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SCREENING FOR HIV INFECTION DURING ROUTINE PRENATAL CARE

BASED ON ADVANCES in the prevention and treatment of HIV infection, in 1995 the U.S. Public Health Service and CDC issued new recommendations[1] for the universal counseling and voluntary HIV testing of pregnant women. These guidelines from CDC, hereinafter referred to as the "CDC Guidelines," stress that *all* pregnant women should be counseled and encouraged to be tested *voluntarily* for HIV infection, *regardless* of their reported risk factors.

This voluntary approach has gained widespread support among many with long experience in AIDS prevention activities. Some "experts," including not a few representatives in the U.S. Congress, have advocated mandatory testing of all pregnant women. In a 1996 legislative compromise, Congress passed an amendment to the Ryan White Care Act that requires all states to certify that they have "taken steps" to implement the CDC guidelines. In addition, to receive continued federal funding for AIDS patient care, states must demonstrate one of the following by March 20, 2000: 1) a 50% reduction in the rate of new AIDS cases resulting from perinatal transmission; or 2) that at least 95% of women who receive at least 2 prenatal care visits have been tested for HIV, or 3) that they have established mandatory screening of all newborns whose mothers have not been tested.

To determine the current HIV counseling and testing practices of prenatal health care providers in Oregon, the Health Division conducted a survey in January 1997. A questionnaire was mailed to 208 persons named as birth attendants on randomly selected birth certificates of children born in Oregon between January 1995 and July 1996. Birth certificates were selected only if they indicated that the mother was an Oregon resident and had received at least one prenatal examination.

RESULTS

Of the 208 birth attendants surveyed, 167 (80%) returned completed questionnaires, including 159 (76%) who indicated that they provide prenatal care. Of these, 145 (91%) practiced in the private sector, 11 (7%) in the public sector, and 9 (6%) in academic teaching centers (not mutually exclusive categories). The majority (58%) practiced outside the Portland metropolitan area. Respondents were either physicians (86%) or certified nurse midwives (14%). Among the physicians, 76% were obstetricians, 23% were family practitioners, and 1 was a general practitioner. Two-thirds of the physicians were male, whereas all but one of the nurse midwives were female. Respondents estimated attending a total of 18,000 births per year (range 10-400, median 100 births per year), and providing prenatal care for 15,000 births per year. [There were 43,432 births to Oregon residents in 1996; >99% followed at least one prenatal exam.]

HIV counseling and testing practices did not differ significantly by provider type, specialty, location, or number of births attended. Of 153 respondents who reported encouraging pregnant patients to be HIV tested, 100 (65%) said that they encourage *all* of their pregnant patients to be HIV tested ("universal screeners"), and 53 (35%) said that they encourage testing only for those with known risk factors ("risk stratifiers"). Four respondents said that they did not encourage any of their pregnant patients to be tested; two were inexplicably unable to answer the question. Risk stratifiers estimated that, on average, 14% of their patients had "engaged in HIV risk behaviors."* Thus, an estimated 67% of Oregon's pregnant women are encouraged to be tested for HIV (all of the universal screeners' patients plus 14% of the risk stratifiers' patients). Respondents estimated that an average of 70% of the pregnant women whom they encouraged to be tested actually were tested (median 90%, range 0-100%). Thus, assuming that women not encouraged to be tested aren't, just under half of pregnant women in Oregon actually get tested for HIV (70% of 67%). That's a long way from the 95% target specified in the amended Ryan White legislation.

Over 60% of respondents reported being familiar with the CDC guidelines. While familiarity may breed contempt, respondents who had heard of the CDC guidelines were somewhat more likely to be universal screeners than their uninformed colleagues; [68/96 (71%) vs. 32/63 (51%), relative risk 1.4, $p = 0.017$]. Knowledge of the guidelines did not differ significantly by provider type, specialty, location, or number of births attended.

DISCUSSION

To recap, about two-thirds of Oregon birth attendants who also provide prenatal care can be classified as universal HIV screeners. The other one-third encourage only a selected minority of their patients to be tested. While many women may have risk factors for HIV infection, those experiences are not necessarily readily apparent. Some unknowingly may have had sex with an HIV-infected person, while others may not report certain high-risk behaviors (e.g., injection drug use). In some inner-city populations in high-prevalence areas, as many as 50-70% of HIV-infected women may be missed by screening that is based on self-reported risk factors.[2-4]

* a pretty example of bureaucratese.

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Fortunately, the prevalence of HIV among childbearing women in Oregon has been quite low. Between April 1989 and December 1995, only 104 of 294,990 newborn blood specimens tested in Oregon were positive for HIV antibodies (35 per 100,000) [unpublished Health Division seroprevalence survey data]. (By comparison, the 1994 rates in New York, Florida and New Jersey were 520, 460, and 350 per 100,000, respectively.) In other words, given that there are some 43,000 births per year in Oregon, approximately 15 occur annually to HIV-infected women. Without intervention, transmission to the newborn occurs in ~25-30% of pregnancies, which would translate into about four Oregon children being perinatally infected each year.

If a policy of universal counseling and testing were adopted, how many cases of perinatal HIV transmission would be prevented? This, of course, is the Big Question, and we must concede that no precise answer is available. We can get an idea of the magnitude of the answer from the following calculations. Let us assume 1) that the prevalence of HIV among childbearing Oregonians is constant, 2) that all women at risk get prenatal care, 3) that all prenatal caregivers agree to counsel and test all of their patients, 4) that all pregnant women in Oregon agree to be screened, and 5) that this results in the early identification of all 15 HIV-infected women annually. Let us further assume that all women so identified agree to be treated and are compliant with the recommended zidovudine (AZT) regimen, and that the 66% reduction in transmission seen in early clinical trials (aka ACTG 076)[6] would obtain in these cases. Under this scenario, the perinatal acquired infections would be reduced from ~4 to 1.3.

If we assume a minimum charge of $50 per pregnancy for the cost of providing an HIV test with attendant counseling, universal screening in Oregon would cost well over $2,000,000 to prevent at most 2 or 3 cases per year. Even this analysis assumes that there is no more efficient way to identify most or all infected pregnant women.

Is the juice worth the squeeze? Consider the following. First, every child who does not become infected with HIV has the potential for a healthy and productive life. Second, the number of dollars saved by preventing even a single neonatal HIV infection is large and growing. Third, the number of HIV-infected women of childbearing age in Oregon increased steadily over the last several years of the anonymous neonatal screening program,† although nationally, reported perinatal transmission has fallen. Penultimately, it is difficult to predict how the availability of new therapies will affect the reproductive decision making of HIV-infected women. As aggressive therapy makes the risk of transmission to the child lower, will more HIV-infected women decide to become pregnant and to carry their pregnancies to term? In addition, timely counseling and testing (ideally, before pregnancy) will allow these women to make informed choices about how to protect their own health and how to prevent transmitting HIV infection to their children. Finally, universal HIV counseling and voluntary testing may have some collateral benefit for the vast majority of pregnant women who are not HIV-infected. Effective counseling can help women assess their current or future risk for HIV infection and other STDs, and to initiate or reinforce behavior changes that will lower their HIV infection risk.

Ryan White Care Act monies (currently ~$6,000,000/year in Oregon) are used to subsidize medical costs and other supportive care for HIV-infected individuals and their families. Wittingly or not, Congress has imposed conditions on continued eligibility for these dollars that Oregon (and most if not all other states) will be unlikely to meet without compulsory testing of pregnant women. It remains to be seen how this will play out as March 2000 approaches.

† The serosurvey was suspended when grant support ended.

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