
In 1996 and 1997, Baltimore, Maryland, had the highest rate for primary and secondary syphilis among U.S. cities.\(^1\)\(^2\) From 1993 to 1996, the rate for congenital syphilis (CS) in Baltimore increased from 62 to 282 per 100,000 live-born infants. To assess the magnitude of the syphilis epidemic in pregnant women and to identify ways to improve CS prevention, the Baltimore City Health Department (BCHD), the Maryland Department of Health and Mental Hygiene (DHMH), and CDC analyzed CS surveillance data for and reviewed medical records of pregnant women with syphilis. This report summarizes the results of this investigation, which indicated that 90% of cases could have been prevented by adequate prenatal care and more timely syphilis screening and treatment.

BCHD surveillance data and hospital discharge records were reviewed to identify women who had active syphilis during pregnancy and deliveries during January 1, 1996-March 30, 1997, and to assess completeness of surveillance data. To identify factors associated with CS and possible prevention strategies, medical records of pregnant women with syphilis and of their infants were reviewed, and mother-infant pairs were classified as CS cases according to the CDC surveillance case definition for CS\(^3\) or as controls.

The CS rate in Baltimore increased from 62 per 100,000 live-born infants in 1993 to 282 in 1996. The increase among blacks was from 113 in 1993 to 564 in 1996. During the study period, 90 women were identified who had active syphilis during pregnancy and who delivered infants. Of these, 62 (69%) women delivered infants with illnesses meeting the CS case definition; 28 (31%) women (controls) who were adequately treated for syphilis during pregnancy delivered infants who did not have CS. All infants with CS had been reported to BCHD. Of the 62 mothers of case-patients, four (7%) delivered stillborn infants. Mothers of case-patients and mothers of controls had similar demographic characteristics. Of the 90 women, the mean age was 26 years; 86 (96%) were black; 72 (80%) were single; 78 (87%) were unemployed; 28 (31%) had multiple addresses during pregnancy; and six (11%) of 56 mothers tested were HIV-infected. A total of 54 (60%) had either a positive toxology screen or self-reported cocaine or heroin use during pregnancy; 24 (44%) of 54 had a record of substance-abuse treatment. Of those women tested by toxology screen at delivery, nine (23%) of 40 mothers of case-patients and 10 (53%) of 19 mothers of controls were positive for cocaine (p < 0.03), four (10%) of 40 mothers of case-patients and one (5%) of 19 mothers of controls were positive for heroin, and 13 (33%) of 40 mothers of case-patients and one (5%) of 19 mothers of controls (p < 0.05) were positive for both drugs.

Mothers of case-patients and mothers of controls differed with respect to several prenatal care-related factors. Of the 58 mothers of case-patients, 43 (74%) had a third trimester diagnosis of syphilis compared with eight (29%) of 28 mothers of controls (p < 0.01). Records of mothers of case-patients were more likely than mothers of controls to include documentation suggesting their pregnancy was unintended (37% versus 14%) (p < 0.05). Among the 90 mothers, three were allergic to penicillin; none was desensitized and treated with penicillin during pregnancy.\(^4\) Therefore, the three mothers delivered infants who had illnesses meeting the CS case definition.

Thirty-six (58%) mothers of case-patients had no prenatal care or initiated prenatal care late in the third trimester. Approximately 80% of these women had missed opportunities to be reached and referred during pregnancy: six (17%) had spent time in jail; 22 (61%) had contact with a social worker, and at least 16 (44%) were clients of other social service agencies.

Missed prevention opportunities also were identified for most of the mothers of case-patients who had had early prenatal care. At the time of this investigation, Maryland law required syphilis screening of all pregnant women in the first and third trimesters, but there was no stipulation on the timing of the third trimester test. Of the 54 case-patients whose mothers had entered prenatal care by 28 weeks’ gestation, syphilis screening and treatment at 28 weeks’ gestation and other routine serologic testing could have prevented 18 (29%) of the 62 cases. An additional six (10%) case-patients were infected too late in pregnancy to prevent CS, including two who seroconverted after delivery.

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other health-care service providers 
that lack of adequate prenatal care 
consistent with other studies.6,9
Although reducing the risk for 
will ultimately depend on con-
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 active syphilis is feasible. In response 
to this epidemic, BCHD has alerted 
prenatal-care providers and worked 
other health-care service providers 
initiate screening and treat-
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restees was initiated at the Balti-
ental Syphilis in Infants of Women with Syphilis in 
been strengthened at public STD clinics, including 
additional clinicians and other staff.

In addition, the Maryland regula-
tion on syphilis testing during preg-
nancy was amended in January 1998 
to require a third trimester screening 
test at 28 weeks’ gestation or the 
first visit thereafter to ensure diag-
osis in time to prevent perinatal 
mission. A Baltimore City Com-
mensioner’s order was also issued 
mandating syphilis screening at de-

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