Untreated maternal syphilis during pregnancy will cause adverse pregnancy outcomes in more than 60% of the infected women. In Nairobi, Kenya, the prevalence of syphilis in pregnant women of 2.9% in 1989, showed a rise to 6.5% in 1993, parallel to an increase of HIV-1 prevalence rates. Since the early 1990s, decentralized STD/HIV prevention and control programmes, including a specific syphilis control programme, were developed in the public health facilities of Nairobi. Since 1992 the prevalence of syphilis in pregnant women has been monitored. This paper reports the findings of 81,311 pregnant women between 1994 and 1997. A total of 4244 women (5.3%) tested positive with prevalence rates of 7.2% (95% CI: 6.7-7.7) in 1994, 7.3% (95% CI: 6.9-7.7) in 1995, 4.5% (95% CI: 4.3-4.8) in 1996 and 3.8% (95% CI: 3.6-4.0) in 1997. In conclusion, a marked decline in syphilis seroprevalence in pregnant women in Nairobi was observed since 1995-96 (P<0.0001, Chi-square test for trend) in contrast to upward trends reported between 1990 and 1994-95 in the same population. PIP: This study presents the trend in syphilis prevalence among 81,311 pregnant women in Nairobi, Kenya, from 1994 to 1997. Clinic nurses performed syphilis serology using a rapid plasma reagin (RPR) card test in 10 NCC clinics and Chi square; these were used to study trends over time. Results showed that a total of 4244 women (5.3%) tested positive with prevalence rates of 7.2% (95% CI: 6.7-7.7) in 1994, 7.3% (95% CI: 6.9-7.7) in 1995, 4.5% (95% CI: 4.3-4.8) in 1996, and 3.8% (95% CI: 3.6-4.0) in 1997. Thus, a significant decrease in syphilis seroprevalence among pregnant women in Nairobi was observed since 1995-96, by contrast with the rising trend in syphilis prevalence reported in 1990 and 1994-95 in the same population. This decline was attributable in large part to the syphilis control program initiated in Nairobi in June 1992, which focused on sexual behavior modifications, changes in health care seeking behavior and improved health care services.