A decentralized syphilis control program in pregnant women was implemented in nine Nairobi City Council antenatal clinics between July 1992 and August 1993, whereby pregnant women were screened for syphilis, treated before leaving the clinic if RPR seroreactive, and counselled on the importance of partner treatment and sexual abstinence during treatment in order to protect their unborn babies from getting congenital syphilis. A total of 13,131 pregnant women were screened for syphilis (RPR test), 87.3% of seroreactive women were treated on site and 50% of partners returned to the clinic and were treated. The prevalence of RPR reactivity was 6.5%. Based on other data the program could theoretically have prevented 413 cases of congenital syphilis at a cost of approximately 50 USD per prevented case. This demonstration project shows that decentralized prevention of congenital syphilis in antenatal clinics by nurses is feasible and inexpensive and should receive priority in resource allocation in reproductive health and child survival programs.