Data collected in the years 2001-2003 from an antenatal clinic in Nairobi, Kenya, were used to assess the benefit of couple counseling and test it as a way of increasing the uptake of interventions in the prevention of mother-to-child transmission of HIV-1. Among 2833 women enrolled, 311 (11%) received couple pretest counselling and 2100 (74%) accepted HIV-1 testing. Among those tested 314 (15%) were HIV-1 seropositive. We incorporated these and other data from the cohort study into a spreadsheet-based model and costs associated with couple counselling were compared with individual counselling in a theoretical cohort of 10,000 women. Voluntary couple counselling and testing (VCT), although more expensive, averted a greater number of infant infections when compared with individual VCT. Cost per disability-adjusted life year was similar to that of individual VCT. Sensitivity analyses found that couple VCT was more cost-effective in scenarios with increased uptake of couple counseling and higher HIV-1 prevalence.