Abstract

CDC0368 - Measuring HIV incidence: lessons and results from a field trial in South Africa

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Background: Directly measured estimates of the incidence of HIV infection are rare, particularly in areas with high levels of migrancy and where there are feasibility barriers to the collection of blood samples. We provide the first estimates of HIV incidence from a prospective field study in a rural area of South Africa using oral fluid collection.

Methods: The cluster randomised IMAGE trial was conducted in eight villages from 2001-2005. As one component of this trial, randomly selected individuals aged 14-35 years were eligible for HIV testing at baseline and at follow up three years later. HIV incidence was estimated among this group. HIV status at both timepoints was assessed on the basis of an oral fluid sample collected with the OraSure device and analysed with the Vironostika HIV1/2 Uniform assay.

Results: 3881 individuals aged 14-35 years from randomly selected households were eligible for inclusion in the incidence study in 2001. A baseline HIV test result was available from 2379 of these individuals of whom 2121 were HIV negative. Of those who were HIV negative, 1353 were successfully re-interviewed approximately three years later. Estimated HIV incidence was 2.1% per annum among males and 4.6% per annum among females. Issues that affected the conduct of the study included a low response rate among migrants, a suspected low positive predictive value and issues in the collection, shipping and analysis of samples. Estimates of HIV incidence were relatively robust to sensitivity anlayses examining these parameters where this was possible.

Conclusions: HIV incidence was higher than expected in this study and remains high in rural areas of South Africa. However, there remain considerable challenges to estimating HIV incidence in field studies and trials of prevention programmes in some settings.