

## **ABSTRACT**

**Background:** Non-facility based strategies that increase HIV counseling and testing may reduce HIV related morbidity and mortality. However, there is paucity of data on mortality following community based HIV counseling and testing. We sought to estimate the rates and determinants of mortality in a community-based cohort.

**Methods:** This was a prospective community based cohort of heterosexually active couples enrolled in Western Kenya. Eligible households were identified following spatial sampling and eligible enrolled couples were followed up six monthly for a period of two years. At each visit participants underwent individual audio computer assisted self-interviews and home based couple HIV counseling and testing. At each follow-up visits, information on linkage to care was obtained and possible cause of mortalities ascertained from the family through verbal autopsy and where available medical sources. We conducted survival analysis and obtained weighted mortality rates. Univariate and multivariate analysis was conducted to determine the predictors of mortality.

**Results:** Of the 2593 (1274 male and 1319 female) participants followed up, 79 deaths were reported. The overall mortality rate was 1.55 per 100 person years. There were 29, 14, 17 and 19 deaths at 6, 12, 18 and 24 months respectively. Majority of deaths occurred among men (n=58) compare to women (n=21), giving mortality rates of 2.34 versus 0.80 per 100 person years respectively. The predictors of mortality were male gender (odds ratio [OR] 2.41, 95% Confidence Interval [CI] 1.39-4.19 p=0.002), HIV infection (OR 4.71, 95% CI 2.59-8.59 p< 0.001), partner HIV infection (OR 1.83, 95% CI 1.12-3.02 p=0.02) and polygamy (OR 1.20, 95% CI 1.02-3.99 p=0.049). The weighted mortality rate was 2.8 among HIV infected participants compared to 0.9 among those who were HIV uninfected.

**Conclusions:** In this low resource and high HIV prevalence setting, there was a higher than base population HIV related mortality despite increased national HIV testing and antiretroviral coverage. Urgent community based interventions are required to address barriers to early diagnosis and linkage to care especially among men and those in polygamous relationships.