

## Publication

### A 5-Year intervention study on elimination of urogenital schistosomiasis in Zanzibar : parasitological results of annual cross-sectional surveys

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The Zanzibar Elimination of Schistosomiasis Transmission (ZEST) project aimed to eliminate urogenital schistosomiasis as a public health problem from Pemba and to interrupt *Schistosoma haematobium* transmission from Unguja in 5 years.; A repeated cross-sectional cluster-randomized trial was implemented from 2011/12 till 2017. On each island, 45 shehias were randomly assigned to receive one of three interventions: biannual mass drug administration (MDA) with praziquantel alone, or in combination with snail control or behavior change measures. In cross-sectional surveys, a single urine sample was collected from 9,000 students aged 9- to 12-years and from 4,500 adults aged 20- to 55-years annually, and from 9,000 1st year students at baseline and the final survey. Each sample was examined for *S. haematobium* eggs by a single urine filtration. Prevalence and infection intensity were determined. Odds of infection were compared between the intervention arms.; Prevalence was reduced from 6.1% (95% confidence interval (CI): 4.5%-7.6%) to 1.7% (95% CI: 1.2%-2.2%) in 9- to 12-year old students, from 3.9% (95% CI: 2.8%-5.0%) to 1.5% (95% CI: 1.0%-2.0%) in adults, and from 8.8% (95% CI: 6.5%-11.2%) to 2.6% (95% CI: 1.7%-3.5%) in 1st year students from 2011/12 to 2017. In 2017, heavy infection intensities occurred in 0.4% of 9- to 12-year old students, 0.1% of adults, and 0.8% of 1st year students. Considering 1st year students in 2017, 13/45 schools in Pemba and 4/45 schools in Unguja had heavy infection intensities >1%. There was no significant difference in prevalence between the intervention arms in any study group and year.; Urogenital schistosomiasis was eliminated as public health problem from most sites in Pemba and Unguja. Prevalence was significantly reduced, but transmission was not interrupted. Continued interventions that are adaptive and tailored to the micro-epidemiology of *S. haematobium* in Zanzibar are needed to sustain and advance the gains made by ZEST.

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