

estimates of parasite prevalence between microscopy and LAMP among persons living in different epidemiological settings in Uganda.

Methods: A malaria surveillance system was established in areas of Uganda with low (Walukuba), medium (Kihihi), and high (Nagongera) transmission intensity. Cohorts of children aged 0.5–10 years and 1 adult from 300 households (100 per site) were followed for 2 years. Blood samples were collected every 3 months to estimate parasite prevalence using microscopy, and the samples negative by microscopy were tested for sub-microscopic parasitemia using LAMP. Comparisons of parasite prevalence were made using generalized estimating equations with adjustment for repeated measures in the same study participants.

Findings: The 24-month study period included 2,662 samples among 397 study participants in Walukuba; 3,389 samples among 432 study participants in Kihihi; and 3,248 samples among 417 study participants in Nagongera. The proportion of study participants with parasitemia was significantly higher when using LAMP plus microscopy compared to microscopy alone at all 3 sites: Walukuba 6.1% vs. 20.5%; Kihihi 7.9% vs. 30.1%; Nagongera 22.5% vs. 64.9% ($p < 0.001$ for all comparisons). Among participants with any parasitemia, the proportion with sub-microscopic parasitemia (only detected by LAMP) was higher among adults compared to children (88.4% vs. 62.8%, $p < 0.001$), and these differences were consistent across the 3 sites.

Interpretation: As expected, parasite prevalence increased with increasing transmission intensity. However, traditional microscopy vastly underestimated the true prevalence of parasitemia across the range of transmission intensity. With increasing age, the proportion of infected subjects with sub-microscopic parasitemia increased, likely due to increasing immunity. These findings have important implications for malaria control programs in Africa that target populations with asymptomatic parasitemia as a means of reducing the parasite reservoir.

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The bridge project: Linking US to Ghanaian children to foster service and education

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Program/Project Purpose: Kybele, Inc. and the Ghana Health Service (GHS) have partnered to improve maternal-newborn healthcare since 2007. Through local connections, Kybele learned the needs of two community schools near Accra. One school was without running water and adequate toilet facilities for 150 children. Kybele and the GHS, worked outside the context of medicine to incorporate US schoolchildren into a service project. The organizers wanted to learn what impact traveling to Ghana would have on US children and determine the long term sustainability of two projects co-led by children. The premise was that not only raising money for

a cause, but actually experiencing the cause, would enhance the development of social responsibility for US children.

Structure/Method/Design: One week service trips were taken to Ghana November 2012 and 2013 to link US and Ghanaian school-children. Prior to travel, the US students raised funds, collected school supplies, and researched internet capability in Ghana. While in Ghana, the GHS provided transportation and technical support for computer installation. The US students utilized modest housing and meals were catered by the GHS. Cultural excursions were taken to former slave castles and to local markets; however, most in-country time was spent with Ghanaian children at the two local schools.

Outcome and Evaluation: Five US children (aged 10–16) traveled to Ghana in 2012; they all returned in 2013. The children co-organized activities that raised \$13,000. Two libraries and computer labs were built that have been sustained. Thirty-two donated computers still function. Water lines and toilet facilities were installed at one school. Over 1,500 books and 800 pounds of school supplies were donated. In 2014, the US students began sponsoring a Ghanaian girl they met to attend junior high school. She would have otherwise been unable to attend school. One US student returned to Ghana in 2015 with the Kybele medical team.

Going Forward: The cultural immersion experience in Ghana by five US schoolchildren was sustained beyond the initial visit. They are encouraging wider participation from their school and are continuing fundraising. They are planning another visit to Ghana in 2016 with additional students to assess their projects.

Funding: Funding was provided through Lovell's Little Bits, Kybele, Inc. and the Ghana Health Service.

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Reviewing implementation fidelity to leverage impact in a multi-country maternal and child health and nutrition study

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Program/Project Purpose: WVI partnered with the Johns Hopkins Bloomberg School of Public Health (JHSPH), to evaluate its key Maternal and Child Health and Nutrition (MCHN) programming models in Cambodia, Guatemala, Kenya and Zambia. The Child Health & Nutrition Impact Study (CHNIS) is a multi-year quasi-experimental study designed to assess the attribution of World Vision's work to improve MCHN outcomes. This is the first time WV has commissioned a large multi-country impact evaluation to generate scientifically rigorous, objective evidence.

Structure/Method/Design: Following baseline data collection and 1.5 years of implementation of three MCHN interventions, a midterm review was conducted in implementation sites to assess implementation fidelity and changes in MCHN health behaviors, outcomes of direct beneficiaries. Assessing implementation fidelity was critical at this point of the study. Without good implementation fidelity, it is unlikely that the intended effect of interventions will be realized. Evaluators looked at five domains of implementation fidelity — adherence, dose & exposure, quality of delivery, participant responsiveness, programme documentation, and assessed changes in direct beneficiaries.