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.

Funding: National Institutes of Health, International Centers of Excellence in Malaria Research (U19AI089674). UCSF Resource Allocation Program summer research fellowship.

Abstract #: *2.020_MDG*

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

C. Hawley[1], E. Bray[1], J. Unal[1], B. Barto[1], C. Lovell[1], P. Lovell[1], S. Barto[1], R. Hawley[1], M. Owen[2]; [1]Forsyth Country Day School, Winston Salem, NC, USA, [2]Wake Forest School of Medicine, Winston Salem, NC, USA

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 schoolchildren. 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.

Abstract #: *2.021_MDG*

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

Anna Paden, Annette Ghee, Armen Martirosyan, Bridget Aidam, Jane Chege; Evidence and Learning Unit, World Vision International

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.

Annals of Global Health, VOL. 82, NO. 3, 2016
May–June 2016: 511–531

Outcome/Evaluation: Quantitative and qualitative methods were used to evaluate how well implementation followed the original protocol or program design and plans. Lot Quality Assurance Sampling was used to assess changes in health behaviors of direct beneficiaries across more than 37 MNCHN indicators in each study site. Methods used included key informant interviews, document review, direct observation of CHW visits, surveying direct beneficiaries about CHW visits, focus group discussions with community members. LQAS data was analyzed across study site as a whole, and in each of 4-8 supervision areas to identify high, low performance.

Going Forward: After basic analysis participatory data review workshops were held with 20-40 stakeholders to discuss results and performance of implementing staff, partners and community members. Multiple implementation areas including quality of delivery were identified for improvement, some intervention components were not being delivered. Following the workshops, actionable plans to accelerate improvements in implementation were created to maximize changes in MNCHN outcomes. The plans prioritize communities most pressing health needs within the bounds of project budget, time, and staff capacity.

Funding: The CHNIS study is privately funded by World Vision.

Abstract #: *2.022_MDG*

Strategies for improving pediatric/adolescent HIV suppression rates for patients on HAART in Nigeria

A.V. Enejoh[1], M. Niyang[2], A. Olutola[1], U. Patel[3,6], J. Pharr[5,6], E.E. Echezona[4,6]; [1]Centre for Clinical Care & Clinical Research, Abuja, Nigeria, [2]Maryland Global Initiative Corporation, Abuja, Nigeria, [3]Georgetown University, Washington, D.C., [4]University of Nevada School of Medicine, Las Vegas, Nevada, [5]University of Nevada School of Community Health Sciences, Las Vegas, Nevada, [6]HealthySunrise Foundation, Las Vegas, Nevada

Background: Improving viral suppression rates for patients on highly active anti-retroviral therapy (HAART) is a key goal for HIV programs. Studies have consistently shown pediatric suppression rates to be lower than that of adults. In 2010, the pediatric suppression rate for patients on the AIDSRelief Nigeria program was 69.25% compared with 90% for adults. The aim of this study was to test the effectiveness of interventions to increase the viral suppression rate in pediatric HIV patients in Nigeria.

Methods: A cross sectional cohort study carried out as part of patient-level evaluation for quality improvement of service delivery at AIDSRelief clinical sites in Nigeria. Patients were randomly selected and reviewed to determine viral suppression rates. Measures consisted of plasma RNA HIV -1 levels and structured interviews for pediatric patients and their caregivers. Strategic goals put in place as interventions to improve suppression rate included: Identifying and documenting a primary and an alternate caregiver for 85% of pediatric patients, the caregivers completing a new session of treatment support classes, 60% of pediatric patients receiving at least one home visit in six months, and 80% of all pediatric charts were to be completed. All strategies were implemented and a reevaluation was conducted one year later.

Findings: Participants consisted of 354 HIV-positive children (< or = 15 years old) on HAART for nine months or longer. Mean age was 6.62 years. 183(50.8%) were males, 49.2% females. 100% of caregivers were identified and documented, 63.3 % received and completed a treatment support class while 36.7% of pediatric patients received home visits. There was a decrease in incidence of new opportunistic infections from 76.5% in 2010 to 35.3% in 2011. McNemar test demonstrated the percentage of virally suppressed patients significantly differed by time. $x^2 = 9.470$,df =1 $p < 0.005$. (CI: -15.03, - 3.66). Overall viral suppression rate increased from 69% in 2010 to 85% in 2011.

Interpretation: Findings suggest that multi-faceted interventions including identification of caregivers, remedial classes in treatment preparation for caregivers, and counseling and support in both clinical and community settings are required to improve suppression rates for pediatric patients.

Funding: PEPFAR.

Abstract #: *2.023_MDG*

Tobacco use and secondhand smoke exposure among women in Aleta Wondo, Ethiopia: A cross-sectional study

A.B. Petersen[1,2], L.M. Thompson[1], J.K. Cataldo[1]; [1]University of California-San Francisco, San Francisco, CA, USA, [2]Loma Linda University, Loma Linda, CA, USA

Background: In Ethiopia, female smoking rates are currently low (<1%). However, because male smoking rates are higher (up to 27% depending on region), women and children's risk of second hand smoke (SHS) exposure is a pressing concern. In order to develop effective public health interventions that prevent the uptake and exposure to smoking, thereby averting the projected increase in tobacco-induced disease, an understanding of Ethiopian women's practices regarding tobacco is needed. The purpose of this study was to describe Ethiopian women's tobacco use, prevalence of SHS exposure, and covariates associated with SHS exposure.

Methods: We conducted a cross-sectional study in Southern Ethiopia between August and October 2014, and systematically sampled households in Aleta Wondo town and surrounding districts. Interviewers verbally administered surveys to women (18-55 years old). Descriptive statistics and multiple logistic regression were performed.

Findings: None of the 353 participants reported current tobacco use, and only 0.8% reported that they had ever used tobacco. Twenty-seven women (7.6%) reported living with a tobacco user, however, twice that number (14.4%) reported that smoking occurred daily inside their home. Living with a tobacco user (OR = 9.68, 95% CI [3.31, 28.32]), absence of a home smoking ban (OR = 6.11, 95% CI [2.82, 13.25]), urbanicity (OR = 3.36, 95% CI [1.52, 7.44])], and exposure to point-of-sale advertising within the last 30 days (OR = 2.66, 95% CI [1.21, 5.83]) contributed significantly to a model predicting the likelihood of daily exposure to household SHS.

Interpretation: Few women reported having ever used tobacco. However, one in seven women in this study were exposed to household air pollution from SHS; this is a health concern for women and children in this rural community. A low level of social acceptability of female tobacco use and high levels of tobacco-related stigma may have led to underreporting of tobacco use and SHS exposure.