

**Findings:** Half of the sample were female (51.7%, n = 78), nearly 43% (n = 55) had the equivalent of a high school diploma, and over half of the sample were single (51%, n = 77). The majority of the participants had heard of ZIKV (90.1%, n = 136) and knew it was transmitted via mosquito bites (82.8%, n = 125); however, only 7.9% (n = 21) knew that ZIKV was transmitted via sexual contact and 13.9% (n = 21) knew that it was transmitted via mother to child. Only 18.5% (n = 28) of the sample knew that ZIKV was transmitted via day biting mosquitoes and only 9.3% (n = 14) knew that using condoms would prevent ZIKV. For the HBM items, half of the sample agreed they were at risk for contracting ZIKV, 80% (n = 104) agreed that ZIKV causes serious complications, and the majority agreed that preventive actions (wearing bug spray and long clothing) could prevent transmission, however, only 28.1% (n = 36) agreed that condoms could prevent transmission. The majority agreed that the media impacted their decision to take action to prevent ZIKV (68.2%, n = 88), and the majority were confident they could prevent getting ZIKV (66.4%, n = 85).

**Interpretation:** More credible information is needed in Ecuador to combat misconceptions about ZIKV through the mass media. Finally, the Health Belief Model seems appropriate for designing ZIKV intervention messages.

**Source of Funding:** Internal Ohio University funding.

**Abstract #:** 1.003\_INF

### Strengthening Health Care Waste Management through Strategic Mentoring and Supportive Supervision in Rural HIV Clinics, South-Eastern Nigeria

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**Program/Project Purpose:** HIV pandemic placed additional burden on the weakened health care systems in Nigeria. With an estimated population of over 180 million and national HIV prevalence of 3.6%, the poorly organized health systems were put under serious stress; especially in the rural areas were large number of persons infected with HIV accessed services. The high volume of clients accessing care at these rural health facilities translated into more health care waste being produced without adequate waste management plan. This was complicated by indiscriminate dumping of health care wastes at non-designated points by health workers. Lack of proper waste segregation and disposal systems was observed in 209 rural HIV clinics in Ebonyi, Enugu and Imo States, South-Eastern Nigeria during a pre-service assessment of the health facilities for comprehensive HIV care and treatment program in 2013. This study evaluates the outcomes of mentoring and supportive supervision to health care workers on Health care waste management between October, 2013 and June, 2016.

**Structure/Method/Design:** Health care workers in the supported states were mentored on the segregation and disposal of waste collected into the different color coded bins. 22,207 color-coded bin liners and 1,252 injection safety boxes were provided to the facilities. Guidelines on healthcare waste management were provided at the supported facilities. Facilities were also supported to dig infectious diseases waste disposal pits. Continued Medical Educations were strengthened by incorporating messages on waste management of infectious materials. Program monitoring visits were conducted across the three states to reinforce messages on the use of color coded bin liner for segregation of waste, proper disposal of injection safety containers using burn and bury approach.

**Outcome & Evaluation:** Program monitoring visits revealed increased compliance on the use of color coded bin liners as waste segregation method and utilization of the dug pit from 10% in October, 2013 to 95% in June, 2016 across the supported sites.

**Going Forward:** Health waste management practices improved with provision of commodities and continuous mentoring of health care workers. Routine supportive supervision is need to maintain good waste management.

**Source of Funding:** None.

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### Redefining the Target Area for Leprosy Elimination Programs Through Serological Evaluation of a Broader Definition of Leprosy Contacts

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**Background:** With 33,000 new cases in 2014, Brazil has the highest incidence of leprosy worldwide. Incidence fails to decrease while case-finding campaigns mostly evaluate household contacts (HHC's). In Northeast Brazil several studies have explored risk of exposure to neighbors. Regarding multibacillary leprosy cases, (the primary source of infection) no significant difference was found between *Mycobacterium leprae* seropositivity rates of HHC's compared to next door neighbors. Therefore, the foci of infection could be larger than the current definition of HHC's identifies. The purpose of this study was to compare the rate of seropositivity in individuals living near a leprosy case to those living farther away from a leprosy case.

**Methods:** This cross-sectional study was conducted between June to October 2016 in five neighborhoods of perimetropolitan areas of Natal, in Rio Grande do Norte, Brazil. Index leprosy cases were individuals under current treatment at the referral center for leprosy, Hospital Giselda Trigueiro. Home visits were made to the 9 index cases, 59 participants living within 3 blocks of the patient (contacts), and 80 participants living farther than 3 blocks from the patient (controls). A consent form and a questionnaire were administered verbally. Blood samples were tested for *M. leprae* using ML Flow and LID-NDO standard ELISA. Data analysis

utilized logistic regression to determine potential risk factors for *M.leprae* seropositivity.

**Findings:** Of the 148 participants, 62% were female. Ages ranged from 4 to 89 with an average of 35. Concordance between the ML Flow and ELISA LID-NDO results was 84%. 20% of women were seropositive compared to 16% of men. Seropositivity among contacts was almost twice that of controls (22% vs 13%).

**Interpretation:** Surveillance of multibacillary leprosy patients should include neighboring residents in order to obtain elimination as current programs fail to include individuals with high rates of seropositivity. In addition, PGL-I or NDO-LID assays are effective and affordable tools for diagnosis in endemic areas that could be part of the final push to eliminate leprosy.

**Source of Funding:** National Institute of Science and Technology of Tropical Diseases, Conselho Nacional de Desenvolvimento Científico e Tecnológico, Carver College of Medicine, Ruth L. Kirschstein National Research Service Award.

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### What is the TB Burden in Nigerian Prisons? – An Enhanced TB Case Finding Program experience from 13 Nigerian Prisons

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**Program/Project Purpose:** In resource-limited settings like Nigeria, prisons and correctional facilities are typically congested and lack adequate ventilation. Inmates are therefore particularly vulnerable to infections like TB and Nigeria ranks 4<sup>th</sup> among the 22 high burden countries with TB (WHO report 2015: Global Tuberculosis Control). WHO recommends active case detection to reduce the burden of TB. TB case detection in Nigerian prisons is passive. Our project was designed to actively increase TB case finding among inmates at 13 prisons in Nigeria.

**Structure/Method/Design:** From July 2014 through August 2015, we implemented an Enhanced TB Identification program. A baseline needs assessment of staff and equipment of prison laboratory and

DOTS center was conducted to identify gaps. 12 clinic staff and 5 laboratory staff were trained in active clinical TB screening and AFB microscopy using the National training tools. The laboratories were equipped with microscopes, reagents, slides and reporting tools. Prison **Chest camps** were conducted quarterly during which all inmates were assembled and clinically screened for TB.

**Outcome & Evaluation:** A total of 8584 inmates were clinically screened. 535 had a positive clinical TB screen. 448 sputum samples were obtained and sent to the prison laboratory for AFB smear microscopy. Only 4 samples (0.9%) had positive AFB smears.

**Going Forward:** Although prevalence of tuberculosis was apparently low in our study prisons, our program demonstrated that with investments made in training staff and equipping the labs a simple standardized approach to TB screening is feasible, acceptable and can be sustained in prisons in resource-limited settings. Study limitations include the low sensitivity of AFB microscopy.

**Source of Funding:** WHO Stop TB partnership.

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### Epidemiology of Cutaneous Leishmaniasis in an Endemic Pacific Coastal Rainforest Area of Ecuador

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**Background:** Cutaneous leishmaniasis (CL) is present in Ecuador's northern Pacific coastal rainforest area, similar to the rest of the mainland. Our previous studies in the 1990s indicated that this area was hyperendemic for CL and had a complex epidemiologic profile. Since then, a number of significant ecological and population changes have occurred caused by intensive economic development (primary rainforest destruction, increased mono-cropping of palm oil and other crops, in-migration from non-endemic areas, tourist industry development). The present study was conducted to (1) investigate CL prevalence, distribution, and risk factors and (2) to compare changes in those that may have occurred in the two decades since our last survey in the same area.

**Methods:** The survey was conducted during a 24-month period (2013-2015) in 21 rural communities located in the aforementioned endemic rainforest area. Grid sampling was used to randomly select 10% of households located within each of the 21 community hamlets. Household members who gave their informed consent or assent completed a leishmanin skin test (LST), medical history, and a detailed dermatological exam (n=820). Samples of suspicious lesions were taken for parasitological analysis. Data were collected from an adult participant subsample (n=351) on household and community characteristics.

**Findings:** Thirty-five percent of the 820 participants showed evidence of prior CL (33%) or parasitological evidence of active disease (2%), mostly caused by *L. guyanensis* (86%). Participants identified a number of changes in household reported major changes from 20 years ago regarding occupation and other sociodemographic characteristics, home attributes (exterior wall construction, window coverings, flooring, electricity, water source, sanitation, wastewater, garbage disposal, cooking facilities), type/proximity of cultivated