China, [5]Kunming Medical University, Kunming, China, [6]UNC Chapel Hill, Guangzhou, China, [7]University of California San Francisco, San Francisco, CA, USA

Background: Many HIV testing services campaigns for young people are designed by experts with limited input from young people. Hackathons are events in which a diverse community of individuals collaborates over several days, typically developing a new technology. We adapted the concept of a hackathon to focus on developing a community-based HIV testing campaign for young men who have sex with men (MSM).

Methods: We implemented a crowdsourcing designathon focused on creating an HIV test promotion campaign for young men who have sex with men (MSM). The intensive 72-hour crowdsourcing designathon contest brought together eight multi-sectoral teams with expertise in public health, design, advocacy, and communications. The incentive to participate was having the finalist campaign implemented among young MSM in eight Chinese cities.

Findings: A total of 53 individuals applied to participate and 40 were selected to join the designathon. Among the 40 participants, 30/40 (75%) were 30 years or younger, 16 (40%) were young students. Campaign themes developed by the teams were compelling and feasible. Two teams were commended as exceptional, forming the basis for an eight-city HIV testing campaign to be evaluated using a stepped wedge randomized controlled trial (ClinicalTrials.gov NCT02796963). Major themes included HIV self-testing and using social media to promote HIV testing. Six images from the crowdsourcing designathon were included in the final implemented campaign.

Interpretation: Crowdsourcing designathons may be useful for creating more engaging and effective health campaigns for youth, including young MSM. This method increased youth ownership of the HIV testing campaign.

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Abstract #: *2.028_INF*

Diagnosis of Cutaneous Leishmaniasis using Microscopic Detection and Molecular-based PCR Assay Techniques

Y. Wang[1], *R. Armijos*[1], *M. Weigel*[1], *A.O. Balogun*[1], *T. Sorocco*[1], *W. Cevallos*[2], *X. Sanchez*[2], *E. Puebla*[2], *R. Rodriguez*[2]; [1]*Indiana University, Bloomington, Indiana, USA,* [2]*Universidad Central del Ecuador, Quito, Ecuador*

Background: Molecular identification of *Leishmania* species using Polymerase Chain Reaction (PCR) has been studied as a more sensitive approach compared to parasitological and microscopic methods. However, in many Cutaneous Leishmaniasis (CL) -endemic areas in low and middle income countries, there is little to no infrastructure to conduct PCR assays on the site. PCR-based molecular diagnosis aids in CL treatment and follow-up due to its higher sensitivity and specificity.

Methods: Our sample consisted of 16 subjects with suspected cases of CL in North West Ecuador. We used the tissue smear which is the gold standard diagnostic method as well as two molecular-based PCR-assay methods - cytochrome B (cyt B) PCR and the Internal Transcribed Spacer 1 (ITS1) PCR and compared results. Tissue smears were obtained from patients and examined under the microscope on site. Also, tissue samples were obtained using FTA cards and transported to a laboratory for DNA extraction and PCR assay.

Findings: Identification using microscopic tissue smear yielded a sensitivity of 56.25% compared to Cyt B PCR (87.5%) and ITS1 PCR (93.75%). An additional benefit of the molecular methods was the ability to identify the exact species of Leishmania following sequencing of the PCR product.

Interpretation: Our results suggest that molecular techniques are indeed more sensitive than the use of microscopic smears. The FTA cards proved effective at retaining the integrity of the samples during transportation to the laboratory and could also be used more often in addition with PCR for Leishmaniasis diagnosis.

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Abstract #: *2.030_INF*

Patterns and Perceptions of Self-Prescribed Antibiotic Use in Guayaquil, Ecuador

O. Hall[1], *L. Malter*[1], *E. van der Linden*[2], ***J. Weinstein***[1]; [1]*New York University School of Medicine, New York, USA,* [2]*Fundación Sonrisa Naranja, Guayaquil, Ecuador*

Background: The rising incidence of antibiotic-resistant disease is partially attributable to the extensive use and misuse of antibiotics. Ecuador has the second highest rate of per-capita antibiotic consumption in Latin America. The purpose of this study is to identify factors that contribute to self-prescribed antibiotic use in a low-income neighborhood of Guayaquil, Ecuador's largest city, where antibiotics are frequently available over-the-counter.

Methods: Qualitative, oral interviews were conducted with local residents who had seen a physician in the last two years (group A, 101 subjects) and those who had not for two years or more (group B, 100 subjects). Subjects were recruited at a local medical clinic and a nearby food market.

Findings: Although 71% of subjects overall report that they believe antibiotics could be dangerous for them, 74% have self-medicated with antibiotics in their lifetime, and 43% have taken antibiotics in the last month. 73% of subjects report taking just one or two antibiotic pills when they self-medicate. There were no differences between groups for these findings, but subjects in group A were more than twice as likely to have spoken with a physician before starting antibiotics the last time they took them (56% vs. 25% $p<0.001$), and more than three times as likely to complete a full course of antibiotics that had been prescribed by a physician (41% vs. 13% $p<0.001$). Overall, 78% of subjects who had children under the age of 18 reported self-medicating with antibiotics, but 85% said

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they would not give antibiotics to their children without taking them to a physician first. Subjects in group B were more than twice as likely to give antibiotics to their children without seeking the advice of a physician (21% vs. 9% p=0.04).

Interpretation: Lifetime patterns and perceptions of self-prescribed antibiotic use were generally the same between groups, but when looking at recent behavior, subjects who had seen a physician in the last two years were more likely to get a prescription and take the full course as prescribed. Further studies should be conducted to determine whether improving healthcare access and/or enforcing regulations on antibiotic sales could reduce antibiotic misuse in the region.

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Abstract #: *2.031_INF*

Epidemiological Burden and Health Outcomes of Tuberculosis in the Philippines from 2000-2015

T. Yuen[1], *D. Geocaniga-Gaviola*[2], *C. Garfin*[2], *R.P.H. Yadav*[3]; [1]*University of Toronto, World Health Organization, Toronto, Canada,* [2]*Philippine Department of Health, Manila, Philippines,* [3]*World Health Organization, Manila, Philippines*

Background: Despite meeting all three Millennium Development Goals on tuberculosis (TB) prior to the 2015 end date, the Philippines remains to be one of the 22 high-burden TB countries. In 2013, TB was the seventh leading cause of death and attributed to 4.4% of total death. The objective of the current study is to summarize the epidemiological burden and health outcomes of TB from 2000-2015.

Methods: TB surveillance information on case finding and case holding activities reported by rural health units and health centers were validated by the National TB Programme (NTP). Measures of TB epidemiological burden were calculated over time and by region. Hierarchal regression models were used to estimate time- and regional-trends and to compare treatment outcomes between population subgroups. All statistical analyses were carried out in Stata and Microsoft Excel.

Findings: Case notification has steadily increased over time, reaching 276.8 cases per 100,000 persons in 2015. The number of clinically diagnosed cases exceeded bacteriologically confirmed cases since 2011. Extrapulmonary TB contributed to <2% of all new cases since 2005. The proportion of cases in children aged 0-14 years was <3% from 2003-2014 but reached 12% in 2015. Case notification for drug-resistant TB also increased over time, with 6581 cases reported in 2015. Treatment success rate (TSR) for drug-sensitive TB has been above 87% since 2000 and reached 93% in 2015. For drug-resistant TB, however, TSR was consistently low and only 50% of the 2013 cohort successfully completed treatment. Compared to adults, children <15 years were 43% (95% CI: 20-71%) more likely to not initiate treatment after diagnosis. But of those on treatment, children had 11% (95% CI: 9-14%) higher odds of treatment success and 88% (95% CI: 85-90%) lower odds of death than adults. Regional differences in case notification and treatment outcome were also noted.

Interpretation: Increased case notification of clinically diagnosed, extrapulmonary and children cases reflected the shift in priorities of the NTP. Moving forward, the programme should focus on regions with limited clinical and laboratory capacity to diagnose extrapulmonary TB and TB in children. Moreover, emphasis on monitoring cases lost to follow-up, particularly for drug-resistant TB, is necessary to ensure cases are successfully treated over time.

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Abstract #: *2.032_INF*

Delayed HIV Testing among Men Who Have Sex with Men in Australia Has Improved but Remains an Issue

H. Zou[1], *X. Meng*[2], *Z. Xu*[2], *D. Callander*[1], *B. Donovan*[1], *A. Grulich*[1], *M. Chen*[3], *C. Fairley*[3], *C. O'Connor*[1], *M. Hellard*[4], *R. Guy*[1]; [1]*University of New South Wales, Sydney, Australia,* [2]*Wuxi Center for Disease Control and Prevention, Wuxi, China,* [3]*Melbourne Sexual Health Centre, Melbourne, Australia,* [4]*Burnet Institute, Melbourne, Australia*

Background: Guidelines in Australia and other countries recommend regular HIV testing for men who have sex with men (MSM) and up to 3-monthly for MSM at higher risk of HIV transmission. We determined trends and factors associated with delayed HIV testing in among MSM attending Australian sexual health clinics.

Methods: Longitudinal data from MSM attending 42 sexual health clinics in the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS) from 2007-2014 were analysed. Patients were assigned "high-risk" status if they had >5 partners in the past 3 months or >20 partners in 12 months or a sexually transmissible infection in the past 2 years. Delayed testing status was defined as having no retest or re-testing outside of the guideline time intervals (6 months for high-risk men, 12 months for non-high-risk men). Mixed effects logistic regression models were used to determine factors associated with delayed testing status.

Findings: A total of 54,139 MSM had 102,317 HIV tests during 2007-2014. At first visit, 35.9% (19,416) of men were categorized as high-risk. The proportion of high-risk MSM assigned delayed HIV testing status decreased from 73.3% in 2007 to 63.2% in 2013 (p for trend<0.001). The proportion of non-high-risk MSM with delayed HIV testing also decreased year-on-year (p-trend<0.001). Delayed HIV testing was more likely in men who lived in regional and remote areas (OR=2.00, 95% CI: 1.76-2.28); were Indigenous (1.44, 1.04-2.00); and older (>29 years vs <29 vs: 1.98, 1.82-2.15). Delayed test was less likely in men born overseas (0.72, 0.65-0.79); and categorised as high-risk (0.39, 0.36-0.42).

Interpretation: Delayed HIV testing is common among MSM in Australia, although declining over the past 8 years. Efforts are needed to further decrease delayed HIV-testing among MSM, particularly men who are Indigenous and those living outside of urban areas.

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