

Results From the 750 children followed, a total of 2170 stool samples were analysed, of which 236 were diarrhoeal. *Shigella* spp. was isolated from 64 stools. The annual incidence of diarrhoea was 321.8 per 1000 children (95% CI: 283.2, 365.7). The annual incidence of shigellosis was 87.7 per 1000 children (95% CI: 68.6, 112.0). The fraction attributable to *Shigella* infection in cases of moderate to severe diarrhoea was 4.7%. *Shigella* cases were more common in children older than 24 months. All four serogroups of *Shigella* spp were found and the most common serogroup was *Shigella flexneri*. All strains showed multidrug resistance. The most observed resistances were to trimethoprim-sulfamethoxazole (82.81%), tetracycline (81.25%), ampicillin (76.56%), nalidixic acid (25%) and chloramphenicol (17.19%).

Conclusion This study determined the burden of shigellosis and confirmed its endemicity in Burkina Faso. The most frequent species was *Shigella flexneri*. The frequency of multi-antibiotic resistant *Shigella* spp. strains was very high. Complete typing of isolated strains is needed to guide the development of serotype-based vaccines.

PA-659 SERUM PROTEOGENOMIC PROFILING OF CXCL10 AND ZIKA VIRUS RNA IN PREGNANT WOMEN AT NIGERIAN TERTIARY TEACHING HOSPITALS

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Background CXCL10 has been shown to increase up to 200-fold during ZIKV infection in pregnant women and is associated with the pathogenesis of ZIKV. This research aimed to investigate the relationship between Zika virus (ZIKV) infection and overexpression of C-X-C motif chemokine 10 (CXCL10) in pregnant women.

Methods The study investigated a total of 62 serum samples from pregnant women in Nigerian tertiary teaching hospitals who were positive for Zika virus IgM using RTqPCR.

Results Seven samples were confirmed by PCR for the presence of ZIKV RNA, indicating a prevalence of 11.1%. The quantity of ZIKV RNA detected in the seven serum samples ranged from 1.0×10^2 to 11.6×10^3 copies/ml. Further analysis revealed that CXCL10 was overexpressed in four out of the seven ZIKV-positive samples, with an increase of 4-, 24-, 27-, and 126-fold. These findings suggest a link between ZIKV viremia and CXCL10 overexpression in pregnant women. Additionally, the study identified age, gestational age, and ZIKV-related symptoms as risk factors for CXCL10 overexpression in pregnant women infected with ZIKV. Gene expression analysis revealed regulation values ranging from 1.0 to 126.2 among samples positive for ZIKV RNA.

Conclusion The findings of the study provide new insights into the pathogenesis of ZIKV infection in pregnant women and suggest that CXCL10 may serve as a biomarker for the disease. Future studies may investigate the potential of CXCL10 as a therapeutic target for ZIKV in pregnant women. Overall, this research highlights the importance of understanding the immunological and virological factors involved in ZIKV infection during pregnancy.

PA-661 NOVEL CASE FINDING FOR DRUG RESISTANT TB AMONG PASTORAL COMMUNITIES, A CASE OF KAZO DISTRICT, ANKOLE REGION, SOUTH-WESTERN UGANDA

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Background Uganda is one of the 30 countries with a high burden of TB in the world. According to the 2014–2015 National TB prevalence survey, 39% of people with cough for two or more weeks did not seek treatment. Similarly, there was an estimated 1500 people (range 820–2300) with Drug resistant TB (DR TB) in 2018 but only 34% were notified. While Ankole region in South-Western Uganda detected 36 DR TB cases from April 2022 to March 2023, Kazo District, a majorly pastoral community diagnosed 2. Additionally, in 2021/2022, Kazo District had a case detection rate of 46% (Target 90%). There was need to improve TB case finding and therefore pairing Health workers and village health teams (VHT) to screen for TB in community hotspots was initiated. **Methods** Microplanning meetings were held with the District Health Team and USAID LPHS Ankole (TASO). A review of the District TB register was done. Hotspot mapping was done with community participation while prioritising areas with previously high TB notification. Buremba, Kyampangara and Nkungu were selected. In each hotspot, a professional health worker and a VHT were paired to do household health education, TB screening using MOH designed tools and sputum sample collection for 3 days. Samples were tested using Gene-Xpert. All diagnosed clients were started on respective treatment.

Results A total of 524 households were reached, 1526 people were screened for TB. Presumptive TB was identified in 220/1526 (14.4%) and 15/220 (6.8%) (8 male and 7 female) confirmed with TB. Of these, 13 (87%) were from Buremba. Out of the 13 clients, 7 (53.8%) (3 male and 4 female) had Rifampicin resistant TB.

Conclusion Pairing Village Health Teams with Professional Health workers in community hotspot screening leads to high TB yield. These data provide a paradigm for optimal active TB case finding in hard to reach communities.

PA-666 ADAPTING A COVID-19 ELISA FOR DRIED BLOOD SPOT TESTING IN MALI, WEST AFRICA

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Background Serosurveillance is an important method to help monitor COVID-19 in the community in Mali. We previously adapted and qualified a two-antigen Enzyme-Linked Immunosorbent Assays for use in local laboratories using venous blood

samples (95% CI, 73.9% (51.6–89.8) and 99.4% (97.7–99.9)) respectively as sensitivity and specificity). However, the burden of blood collection set cost can be challenging in resource limited region where alternative source of biological material will facilitate a large scale of COVID19 surveillance. In this study (funded by NIH) we assessed the of dried blood spot (DBS) samples to quantify Sars-Cov-2 antibodies by ELISA using RBD and Spike antigens.

Methods Respectively 248, 226 and 391 volunteers were randomly selected from Sotuba (urban), Bancoumana (town) and Donegoubougou (village). Venous blood and DBS samples were collected, tested in parallel to assess concordance and the performances of the DBS samples. During the optimization phase (n=36), a promising concordance was found. This allowed us to analyze 829 additional samples on the Spike antigen.

Results We had (31/36) of samples that were COVID-19 seropositive (two category kappa 1.0) in both type of samples, suggesting a strong concordance. Analysis of the 829 samples showed a high correlation (Pearson $r = 0.9239$ $p < 0.0001$) with 98% concordance between venous blood ELISA and simplified DBS spike ELISA (kappa = 0.92). As performances, the DBS showed a sensitivity of 99% (95% CI, 98%-99%) and a specificity of 99% (95% CI, 93%-100%). It had 100% (95% CI, 99%-100%) as positive predictive value, 88% (95% CI, 79%-94%) as negative predictive value.

Conclusion Overall, DBS elution and testing was comparable to venous blood testing in the Malian population, and this supports its use in large-scale SARS-CoV-2 serosurveillance studies as a valuable alternative to venipuncture. Our perspective is to optimize/adapt DBS serology to other viruses like Zika virus, Ebola virus, Dengue virus, hepatitis viruses.

PA-668

EDCTP/AFRICA-CDC SUPPORTED MASTER B-LEARNING FIELD EPIDEMIOLOGY PROGRAM IN CABO VERDE: RESULTS FROM FIELD TRAINING IN STRENGTHENING THE HEALTH INFORMATION SYSTEMS OF LUSOPHONE WEST AFRICAN COUNTRIES

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Background Africa's weaknesses in responding to public health emergencies triggered the University of Cabo Verde's EDCTP/Africa CDC supported b-learning Field Epidemiology Program (2022–2024), after Mozambique's and Angola's experiences. The Program targets 15 students from Cabo Verde (CV)(6), Guiné-Bissau (GB)(6) and São Tomé e Príncipe (3). Groups of three students completed their first field training, producing reports focusing on antimicrobial resistance (AMR) and/or One Health Surveillance within existing health information systems (HIS).

Methods During field training students, supported by site supervisors and tutors, selected a HIS, described it, assessed

its quality, and identified opportunities for improvements, namely on the possibility to expand its One Health scope.

Results In the three countries, the HIS for human health is structured around the platform District Health Information System 2 (DHIS2) complemented by population-based surveys. Clinical and public health services, disease programs and surveillance systems are supposed to feed their data into the DHIS2, mostly manually, although this does not always happen. AMR is not regularly monitored for lack of laboratory capacity for antibiograms; when done, it is mostly related to tuberculosis. GB is the only country reporting a National HIS Strategic Plan. Private care providers/services are not included in the DHIS2 data/information circuits.

Animal/plant health have separate information systems with variable degrees of sophistication. CV is the only country reporting the development of coordination structures with animal and environmental HIS.

Besides these experiences, students analyzed disease related data (diarrhoeal diseases, malaria, HIV, tuberculosis) and participated in outbreak investigations (shigella, influenza, rubella).

Conclusion Key obstacles to develop One Health Information Systems are siloed structures for human, animal and environmental HIS, but also significant blind spots in human HIS, related to programs and services that do not dialogue with DHIS2, lack of capacity to obtain laboratory-based data and a private sector growing outside relevant data/information circuits.

PA-673

DEVELOPMENT OF A MOBILE APPLICATION TO SUPPORT PERINATAL PERIOD OF PREGNANT WOMEN IN NIGERIA: USER-CENTRED DESIGN APPROACH

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Background About 99% of global maternal mortality occur in developing countries and Nigeria accounts for 20% of all maternal mortality. Major contributory factors include poverty, distance, cultural and religious beliefs, and ignorance. Mobile health technology (mHealth) is emerging in Africa. While SMS has been the most common intervention, mobile apps have not been explored for maternal care in Nigeria. This study describes the process of design, development, and testing of mobile app for pregnant women in Nigeria.

Methods Using a user-centred design, we conducted semi-structured interviews at each stage of mobile app development with randomly selected pregnant women attending antenatal clinics in Oyo State, Nigeria. The first interview focused on need assessment or empathy, followed by alpha and beta testing of the mobile application prototype at health facilities in Ibadan, Nigeria.

Results The barriers to accessing perinatal care was distance to nearest facility (mean = 3.3km), lack of perinatal education, and cost. Low fidelity prototype of the mobile app was designed with five features (gamified microlearning, lifestyle tracking, clinic connection, financial planning, and chat). Alpha testing showed that 56% (n=7) of pregnant women surveyed considered lifestyle tracking and gamified microlearning as the