

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