Infectious Disease Detection and Surveillance (IDDS) Quarterly Report FY21 Q2: Annex B. Success Stories

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One Health National Agreements to Strengthen Collaboration in Guinea

USAID's Infectious Disease Detection and Surveillance (IDDS) project is seeking to strengthen the surveillance and laboratory networks in Guinea using the <u>One Health</u> approach. One Health recognizes the connection between people, animals, and the environment and that greater collaboration between these sectors is essential to counter the threat of zoonotic diseases like Ebola Virus Disease and Rabies.

IDDS supported the development of two national collaboration agreements¹ covering the surveillance and laboratory networks under the auspices of Guinea's One Health Secretariat and other stakeholders in human, environmental, and animal health. Together with these groups, IDDS facilitated the formation of the Human and Animal Health System technical working group (TWG) and the Laboratory TWG. With IDDS technical assistance and logistical support the TWGs developed terms of reference for the TWGs and a detailed work plan of One Health surveillance activities.

The members of the two TWGs met in Coyah, Guinea, from September 27 to 29, 2020. IDDS provided technical and financial support to review information and indicators collected by human and animal health information systems, identify gaps, and agree on information to be shared between the two systems. The TWGs identified the lack of information sharing as a challenge and decided to develop the two national collaboration agreements between the different ministries. In additional to the national collaboration agreements, IDDS supported the development of guidance documents and tools for information sharing between human and animal health surveillance and laboratory systems These agreements will strengthen technical collaboration between stakeholders in the fight against zoonoses, such as through joint activities, training, and research.

Key highlights of the documents include commitment to the following activities:

- Carrying out activities for the identification, notification, collection, and investigation of cases of public health threats
- Sharing surveillance and laboratory data between sectors using the One Health approach
- Participating regularly in the One Health joint data harmonization meetings

¹ Collaboration agreement between the Departments of Health, Livestock, Environment, and Water and Forestry for the monitoring of priority zoonotic diseases in the Republic of Guinea

Collaboration agreement between human, animal, and environmental health laboratories in the surveillance of priority zoonotic diseases in the Republic of Guinea

USAID Infectious Disease Detection and Surveillance (IDDS) FY 2021 Quarterly Report January–March 2021

IDDS Project Highlighted in India's "Jan Andolan for TB" Meeting and India Tuberculosis Report 2021

Although USAID's Infectious Disease Detection and Surveillance (IDDS) project has only been operating in India since October 2021, the National Tuberculosis Elimination Program (NTEP) has recognized the support provided by the project, leading to visibility at the national level.

IDDS has provided technical support to the public sector laboratories under the NTEP. IDDS conducted onsite assessments at three national reference laboratories and linked intermediate reference laboratories during November to December 2020 to analyze the gaps and challenges faced by the institutions in supervising, mentoring, monitoring, and troubleshooting activities. Moving forward, IDDS is supporting the national reference laboratories and intermediate reference laboratories to meet their technical and managerial needs.

Jan Andolan (meaning people's movement) aims to make 2021 the year for tuberculosis (TB) and to accelerate activities to achieve India's target of TB elimination by 2025. The Government of India invited IDDS to be a development partner for the "Jan Andolan for TB" meeting, chaired by Harsh Vardhan, Union Minister for Health and Family Welfare, on February 24, 2021. IDDS presented on the project's goals and achievements in India so far.

In addition, the India TB Report 2021, released by the Ministry of Health and Family Welfare on World TB Day, March 24, featured IDDS in the section "Strengthening of NTEP Laboratory Network."



IDDS Support to Bihar's Intermediate Reference Laboratory at Patna Improves Tuberculosis Diagnostics

IDDS is providing technical support to national reference laboratories (NRLs) and intermediate reference laboratories (IRLs) under India's National Tuberculosis Elimination Program to overcome challenges and ensure high-quality tuberculosis (TB) diagnostics. This has resulted in recent improvements at IRL Patna, including in specimen testing and staff knowledge of procedures.

Patna, the state capital of Bihar, has one IRL and two culture and drug susceptibility testing laboratories in Darbhanga and Bhagalpur districts for providing diagnostic services for drug-resistant TB. Due to a shortage of technical staff at the IRL, senior TB laboratory supervisors from the field were asked to ensure uninterrupted diagnostic services. Although the field staff were trained onsite at the IRL by the existing staff, the IRL was functioning with limited efficiency due to multiple underlying challenges.

IDDS conducted a joint visit to IRL Patna in February 2021, with representatives from the Central TB Division and the National Institute of Tuberculosis and Respiratory Diseases NRL in New Delhi. During the visit, the IDDS team observed multiple gaps and challenges, such as a lack of knowledge of laboratory staff of laboratory processes and standard operating procedures, and prolonged turnaround time for testing of samples, and reporting of test results back to the referring facility. There were also issues in supervision and monitoring that impacted the quality of TB diagnostic services in the state.

The IDDS team held in-depth discussions with the laboratory in-charge and technical staff, and presented findings to the state TB officer. Some priority issues were resolved onsite. In addition, IDDS provided hands-on training in liquid culture and drug susceptibility testing to IRL staff and microbiologists from Darbhanga and Bhagalpur.

Based on IDDS recommendations, steps were also taken by the laboratory manager and IRL staff to resolve key technical, operational, and administrative issues, which has resulted in improved efficiency. For example, out of a huge backlog of 2,000 specimens at the IRL, close to 500 specimens (which were less than 15 days old) were processed immediately within 48 hours after the visit. The rest of the specimens, which were not suitable for testing, were removed, and districts were instructed to send fresh specimens. IDDS will continue to support strengthening IRL Patna through a follow-up visit in the coming months and will review the progress made on the other agreed-on action points during the visit.



IDDS team member, Dr. Jyoti Kayesth, at IRL Patna during the visit.

IDDS Recognized for COVID-19 Response in Indonesia

USAID's Infectious Disease Detection and Surveillance (IDDS) project has received an award for "the excellent support to the Ministry of Health's COVID-19 testing program" by USAID in Indonesia. It was announced by the Mission Director, Ryan Washburn, at a virtual town hall on March 17. This award is a recognition of the hard work and excellent performance of the IDDS team, despite the limitations set by the pandemic.

IDDS contributed to Indonesia's COVID-19 response by supporting specimen collection and transport, training and technical assistance, procurement, and the development of a COVID-19 national laboratory strategy. This included the delivery of 46,250 viral transport media to the Indonesian health services.



Liberia's G.W. Harley Hospital Laboratory Upgrade Completed and Ready for Expanded Testing

On April 2, USAID's Mission Director in Liberia, Sara Walter, officially handed over the newly renovated and equipped G.W. Harley Hospital laboratory to Liberia's Minister of Health, Dr. Wilhelmina Jallah. The handover marked the end of seven months of work led by USAID's Infectious Disease Detection and Surveillance (IDDS) project to expand and upgrade the laboratory at G.W. Harley, Nimba county's referral hospital.

In Liberia, insufficient laboratory diagnostic testing has been a weak link in the cascade of care for many common conditions, including testing for priority pathogens and drug-resistant strains (antimicrobial resistance).

One of the gaps IDDS had identified at G.W. Harley Hospital was the very limited capacity of the laboratory due to its small workspace. The laboratory did not have space for the equipment needed to provide the most basic clinical tests, including bacteriology.

A properly constructed and well-maintained laboratory enables smooth workflow and the safety of health care workers. A fully functional laboratory provides important information to aid diagnosis, treatment, monitoring, and surveillance of diseases, particularly those of public health importance, like COVID-19 and Ebola Virus Disease.

Crucially, this facility will now be able to provide bacteriology testing, equipping clinicians to choose the correct antibiotic to use and curb the rise of antimicrobial resistance.

IDDS also supported the procurement of equipment, reagents, and commodities that will be used to provide general clinical tests to G.W. Harley Hospital. The equipment includes a biosafety cabinet, microscopes, incubators, freezers, and autoclaves.

Through IDDS, USAID is helping Liberia strengthen the diagnostic network that provides qualityassured results and surveillance data to inform health policy and practice, improve clinical treatment, and contribute to global health security.





USAID Liberia Mission Director, Sara Walter (5th left), Dr. Wilhelmina Jallah, Liberian Minister of Health (6th left), Dr Fatma Soud USAID GHS Advisor (4th from left) and Ellen Munemo, IDDS Country

Building Bacteriology and Antimicrobial Susceptibility Testing in Liberia

USAID's Infectious Disease Detection and Surveillance (IDDS) project is building the capacity for bacteriology testing in three county referral laboratories (Tellewoya in Lofa, Phebe in Bong, and G.W. Harley Hospital Laboratory in Nimba) in Liberia. Bacteriology testing is a crucial tool to detect disease-causing microbes including those resistant to antibiotics, and is necessary to combat antimicrobial resistance (AMR)

G.W. Harley Hospital Laboratory will offer bacteriology services beginning in mid-2021, following a refurbishment led by IDDS (see Liberia's G.W. Harley Hospital Laboratory Upgrade Completed and Ready for Expanded Testing). However, offering bacteriology testing also involves major skills upgrades for the staff to carry out these services.

To support this, IDDS conducted a nine-day training for the laboratory technicians from the three supported county laboratories on bacterial culture and antimicrobial susceptibility testing (AST). The training took place from March 16 to 26, 2021, in Gbarnga and Phebe, in Bong county. The training involved four days of theory and five days of practical sessions. To build country ownership, IDDS collaborated with the National Public Health Reference Laboratory (NPHRL) and the National Diagnostic Division of the Ministry of Health to provide the training. The NPHRL provided one of its senior technologists as a facilitator in the spirit of ensuring country ownership. The practical sessions were conducted at Phebe Hospital Laboratory.

The training for the laboratory technicians comprised theoretical and practical sessions. Important topics of note were safety in the microbiology laboratory, specimen collection, processing including AST, and interpretation and quality assurance. To be able to manage the data generated from AST and its application for AMR surveillance the participants were introduced to the WHONET software and how to use it. WHONET is World Health Organization database software developed for the management and analysis of microbiology laboratory data with a special focus on AST results.

This training has equipped the technicians from the three laboratories to be able to process bacteriology specimens, increasing access to clinical bacteriology in Liberia and boosting the management of treatable infections and detection of AMR. The data collected from these results will also aid in public policy formulation around antimicrobial use in the country.

Josiah George, Senior Technologist at NPHRL who assisted the training, said, "Thank you for this training. I have been working in the laboratory for over sixteen years of which five years were as a supervisor and have never seen a training of this magnitude being provided to the technicians. This training provided by IDDS for nine days was not a mistake. It's like those things we did not learn from school were taught, and that's what makes this training unique. We were able to link the theory sessions to practical sessions which focused on all steps in bacteriology. These participants are now in full gear to implement what they have learnt from this training."

Bill Mulbah, County Diagnostic Officer, Bong county, commented, "Our health system is paralyzed, and we need such hands-on training for us to be able to strengthen our laboratories."

Roland T. Gobeh, County Diagnostic Officer, Lofa county, added, "I would like to thank IDDS, the National Diagnostic Division and USAID, if you invest in your child you want for that child to be better. You have invested in us to improve this country and we promise you that your efforts in training us will not go in vain. We are excited that we are going to start providing bacteriology services in Lofa county after this training."



Participants in the IDDS bacteriology training held in March 2021 in Liberia's Bong county

Senegal's Guediawaye and Linguere Laboratories Restart AMR Detection and Surveillance Activities Through Support From IDDS

Drug-resistant strains of common diseases, known as antimicrobial resistance (AMR), threaten to undermine the huge progress that antibiotics have made in medical treatment. USAID's Infectious Disease Detection and Surveillance (IDDS) project is boosting the capacity of many African nations to detect and track AMR and enabling them to report drug resistance into national and global electronic reporting systems.

Guediawaye and Linguere Hospital Laboratories in Senegal restarted antimicrobial susceptibility testing in March 2021 after a 2-year gap. This was possible through IDDS support to strengthen AMR surveillance through the development of national standard operating procedures and tools for AMR diagnostics, provision of equipment, consumables including reagents, , and hands-on training for key staff at IDDS-supported facilities. Testing had ceased 2 years ago due to insufficient staffing, training, equipment, and consumables.

Dr. Adama Tall, Head of Guediawaye Hospital Laboratory, said, "IDDS contributed significantly to the improvement of diagnostic capabilities in Guediawaye health district with the procurement of equipment, reagents, and consumables that allow them to perform microbiological tests. With this new capacity, our patients no longer need to go to the University Hospital facilities to access this service."

These activities support IDDS's main objectives to strengthen the AMR diagnostic capacity of the national laboratory system and ensure sustainable AMR surveillance reporting to Senegal's Ministry of Health.

IDDS Improves Priority Diseases Reporting in Senegal with Training for 234 Nurses and Midwives on DHIS2

USAID's Infectious Disease Detection and Surveillance (IDDS) project trained 234 newly recruited nurses and midwives in the use of District Health Information Software, version 2 (DHIS2), from December 1, 2020, to March 25, 2021, in Senegal's Saint-Louis and Tambacounda regions. This will improve the quality of surveillance reporting on priority diseases such as yellow fever, including completeness and timeliness of the reports. DHIS2 is the world's largest health management information platform, used by 73 low and middle-income countries.

This training allows the health districts and the Ministry of Health to have access to high-quality data for epidemiological surveillance, as well as for their other national health programs. This training was conducted in close collaboration with the Directorate of Prevention and the Directorate of Health Information Systems from the Ministry of Health, and the Saint-Louis and Tambacounda Medical Regions.

IDDS organized a training workshop for four days in each of the health districts in the two regions, in line with the national training curriculum. For each district, IDDS first administered a pretest and followed with training modules, practical case studies, posttests, and finally an evaluation of the training by the attendees.

The average score for participants increased from 57.9 percent in the pretest to 84.0 percent in the posttest. During the trainings, participants were able to work on existing data that had been submitted to the Ministry of Health to perform a data quality assessment. Data were cleaned, identifying and removing all data discrepancies, aberrant data, and out of range data. Now, all nurses and midwives in the IDDS-supported health districts, both the newly recruited and the veteran staff, have the skills to collect high-quality data and report them to Senegal's Ministry of Health.

Dr. Tidiane Gadiaga, Tambacounda Health District Chief Medical Officer, said, "The training was very timely, and it responded to an urgent need in the district, which was to provide training on DHIS2 to newly recruited staff. Moreover, the training allowed us to manage surveillance data quality and for other national programs data."

Dr. El Hadji Cheikh Abdoulaye Diop, Koumpentoum Health District Chief Medical Officer, added, "With the training of the midwives, there is no longer any risk of transmitting late reports to the Ministry of Health. If the head nurse is out of the office, the midwife now has the skills to collect the data and send the report to the Ministry of health in a timely manner."



IDDS trained 234 newly recruited nurses and midwives in the use of District Health Information Software

IDDS Support Improves Antimicrobial Resistance Data Quality and Reporting at Tanzania's Regional Hospitals

Between December 2020 and March 2021, USAID's Infectious Disease Detection and Surveillance (IDDS) project supported Tanzania to initiate its national antimicrobial resistance (AMR) surveillance framework. The framework covers improving reporting on drug-resistance (known as AMR) in priority diseases across Tanzania. IDDS support focuses on four regional hospitals in Dodoma, Morogoro, Temeke, and Maweni.

The Joint External Evaluation on International Health Regulations conducted in Tanzania in 2016 had identified the lack of capacity for AMR detection and surveillance of infections caused by AMR pathogens. AMR threatens to undermine the huge progress antibiotics have made in medical treatment. IDDS is boosting the capacity of many African nations to detect and track AMR and enabling them to report drug resistance into national and global electronic reporting systems.

IDDS provided a package of technical and logistical assistance including the procurement of computers, installation of the WHONET, and training and supervision to improve AMR data management. WHONET is a free World Health Organization software for the management and analysis of microbiology laboratory data with a special focus on AMR surveillance, which reports into the World Health Organization's Global Antimicrobial Resistance Surveillance System. The four hospitals can now report the name and number of priority pathogens isolated, such as E. coli, where previously they could only report the number of samples collected.



Laboratory staff at Benjamin Mkapa Hospital in Dodoma, Tanzania participating in AMR data management training. The generated antibiograms help to improve clinical decisions and patient management at hospitals with limited capacity for antimicrobial sensitivity testing.

IDDS Revitalizes Facility- and Community-based Surveillance for COVID-19 in Eastern Uganda

Uganda was experiencing extensive community spread of COVID-19 by October 2020, and the established COVID-19 treatment centers were overwhelmed with the number of cases. To manage this wave, the Ministry of Health revised its COVID-19 treatment guidelines to bring on board primary health care facilities and allow for home-based care of patients with mild symptoms. However, primary health care facilities had not been trained in COVID-19 management, and there was a need to intensify both facility-based surveillance and community-based surveillance (CBS) for the disease. Training and increasing surveillance would enable early detection and the swift management of cases.

IDDS support for COVID-19 pandemic response efforts enabled the Ministry of Health and district governments to conduct facility-based surveillance in-person training and mentorships in 60 health facilities in the districts of Busia, Mbale, and Tororo in eastern Uganda. IDDS strengthened the COVID-19 surveillance systems at the same 60 facilities through training and mentorship on the use of surveillance tools, data capture, analysis, and reporting.

In addition, 619 village health teams were trained in CBS. The training and mentorship activity took place from October 28 to December 4, 2020. As a result of the intensified facility training and CBS, the number of confirmed cases identified per month at the Tororo Mobile Laboratory increased by 30 percent in 2 months (from 565 in October 2020 to 736 in December 2020), as shown in Figure 1. As part of the training, trainees were updated on the new COVID-19 case definition, developed by the World Health Organization, and adopted by the Uganda Ministry of Health. The training meant that the right specimens were collected that fit the COVID-19 clinical description. Figure 1 shows the impact of the improved and more precise case definition which led to fewer specimens collected and higher positivity rate. This big increase in cases identified meant that there were fewer undiagnosed individuals in the community in the three districts. Facility-based surveillance and CBS are key to timely and effective COVID-19 response.

In a presentation to the COVID-19 Incident Management Team on February 20, 2021, Dr. Freda Loy Aceng, Senior Epidemiologist with the Ministry of Health, noted that 65 percent of the health facility alerts received at the national call center were from districts implementing accelerated facility-based surveillance.

Figure 1: Number of tests and positives per month from May to December 2020



IDDS Supports Uganda's Ministry of Agriculture Animal Industries and Fisheries First Ever International Standards Organization Training

In Uganda, the Animal Health Department, under the Ministry of Agriculture Animal Industries and Fisheries (MAAIF) is tasked with investigating animal diseases and outbreaks in the field. This work requires a strong laboratory network that can guarantee accurate, reliable, traceable, and reproducible results.

The department has tiered systems that start from the district veterinary laboratories to regional animal disease diagnostics and epidemiology centers, and to national reference laboratories. However, despite the tremendous efforts to date, there is no animal health laboratory in Uganda that meets International Standards Organization (ISO) requirements for accreditation, specifically for ISO 17025:2017 standards, requirements for the competence of testing and calibration laboratories.

IDDS supported MAAIF to conduct the first training of trainers (ToT) for the ISO 17025:2017 standards. It was facilitated by the Uganda National Bureau of Standards (ISO country member) trainers from March 22 to 26, 2021. IDDS support is part of the project's drive to improve detection of priority zoonotic diseases in the regional animal disease diagnostics and epidemiology centers.

These 12 pioneer trainers will now in turn conduct ISO trainings for the animal health care providers from the various animal laboratories. They will be used as mentors to build the laboratory quality management systems at laboratories selected by MAAIF. These trainings will be based on a mentorship tool kit, developed through a series of consultative discussions by a multisectoral team of ISO experts (auditors, trainers, and mentors), with support from IDDS.

"I would like to thank IDDS for organizing this training that has demystified the implementation of the particular clauses of the ISO 17025:2017," said Dr. Atim Stella Acaye, Principal Veterinary Officer in charge of laboratories at the National Animal Disease Diagnostics and Epidemiological Centre. "This will streamline the implementation of the quality management system across the veterinary sector."

"I am privileged to be among the first national trained ISO 17025:2017 ToTs in the country. This training coupled with the structured mentorship tool kit and guide will facilitate the accreditation drive at my facility. Thank you so much IDDS," added Dr. Patrick Vidriko, Laboratory Manager at the Research Center for Tropical Diseases and Vector Control laboratory, Makerere University College of Veterinary Medicine, Animal Resources and Biosecurity.

The training and the mentorship tool kit developed are part of IDDS's work to facilitate the development of laboratory quality management systems in veterinary diagnostics facilities across Uganda, ultimately improving disease detection and diagnosis.



Trainees with their certificates after Uganda's MAAIF first training of trainers (ToT) for the ISO 17025:2017

IDDS Support Starts Event-based Surveillance Using a One Health Approach in Two Pilot Provinces in Vietnam

Integrated human and animal health event-based surveillance (EBS) reporting will start for the first time in Vietnam's Dong Thap and Thai Nguyen Provinces in April 2021. The new integrated EBS reporting was made possible with IDDS support and the training of more than 1,100 staff across 21 districts.

EBS uses information reported by community members such as a large number of children being absent from school, that might signal a potential community health issue to detect unusual health-related events. Integrated human and animal health EBS is important for early detection of zoonoses, diseases that jump between animals and humans such as rabies. This integration between human health, animal health, and the environment is known as the <u>One Health</u> approach.

In March 2018, the Vietnam Ministry of Health issued guidelines for implementing EBS and requested EBS to be scaled up nationwide. Between 2018 and 2019, training of trainer workshops were held for provincial health staff from all provinces, with the expectation that provinces would cascade down EBS trainings to district and communes and start EBS in 2018.

However, according to information provided by national and regional public health agencies to IDDS, EBS implementation in many provinces is facing significant barriers, such as lack of training and communication materials and limited technical support and supervision. EBS reporting is happening in only a few provinces, with variable timeliness, completeness, and quality of reported data. Although EBS integration across the human and animal health sectors is required for avian influenza and rabies, the current link between the two sectors is very weak in most provinces.

In June 2020, IDDS established a partnership with relevant government agencies, including the National Institute of Hygiene and Epidemiology, Pasteur Institute of Ho Chi Minh City, Department of Animal Health, and selected Regional Animal Health Offices. The provinces of Dong Thap (in Southern region) and Thai Nguyen (in Northern region) were selected as the first pilot sites in Vietnam for implementing integrated EBS using a One Health approach, with the intention of expanding to additional provinces in the coming years.

After completing field assessments in Dong Thap and Thai Nguyen, the IDDS team worked with government partners to develop and implement a standard approach for initiating integrated EBS activities by conducting joint trainings for human and animal health sector staff at the province, district, and commune levels. Using this One Health approach, four EBS training workshops were held in December 2020 and January 2021 for human and animal health staff, representatives of other relevant agencies, and community groups at the provincial level.

Following these initial trainings and with support from IDDS and partner organizations, 21 EBS training workshops were held by the provincial centers for disease control (human health) and provincial sub-departments of animal health in all 21 districts of the 2 provinces during January–March 2021 for trainees at the district and commune levels. These trainings included lectures, USAID Infectious Disease Detection and Surveillance (IDDS) 18 FY 2021 Quarterly Report January–March 2021

discussion, and practical sessions, as well as instructions for implementing EBS and for supporting EBS implementation at lower levels. Through these training workshops, more than 1,100 local staff have been provided with the necessary knowledge and skills to start EBS activities and reporting data from the commune level to the EBS system beginning in April 2021.

IDDS also worked with partners to develop communications materials for the community. These include a community-oriented poster and a set of keychain-attached cards showing selected EBS signals of disease outbreaks and public health events of concern that need to be reported by community members to the commune health station. These IDDS-supported EBS materials and tools use simplified language to help community members understand the EBS alert signals better and facilitate the reporting of health-related signals from the community.



An EBS training practical session in Thai Nguyen province: a group of trainees and trainers discuss a case study and how to record relevant information on EBS forms.



A community poster showing EBS signals of disease outbreaks and public health events to be reported by community members to the commune health station.



A set of keychain-attached cards showing EBS signals of disease outbreaks and public health events to be reported by community members to the commune health station.