Infectious Disease Detection and Surveillance (IDDS)

Quarterly Report

January 1, 2022–March 31, 2022

Truenat training in Zimbabwe. Photo by IDDS

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

4WL	Four-Way Linking
AI	Artificial Intelligence
AMR	Antimicrobial Resistance
ARP	American Rescue Plan
AST	Antimicrobial Susceptibility Testing
BJIK	*Balai Jaringan Informasi dan Komunikasi* (Information and Communication Network Center)
BRAC	Bangladesh Rural Advancement Committee
BRIN	National Research and Innovation Agency
CAD	Computer-aided Detection
CBS	Community-based Surveillance
CENAT	Center for Tuberculosis and Leprosy Control
COMMIT	Community Mobilization Initiatives to End Tuberculosis
COVID-19	Coronavirus Disease 2019
CTD	Central Tuberculosis Division
CXR	Chest X-ray
DHIS2	District Health Information Software, Version 2
DNA	Diagnostic Network Assessment
DR	Drug Resistant
DRC	Democratic Republic of the Congo
DST	Drug Susceptibility Testing
DTC	DataToCare
EBS	Event-based Surveillance
EPHI	Ethiopian Public Health Institute
EQA	External Quality Assurance
EVD	Ebola Virus Disease
FY	Fiscal Year
GHS	Global Health Security
GLASS	Global Antimicrobial Resistance and Use Surveillance System
GX	GeneXpert
IDDS	Infectious Disease Detection and Surveillance

IDSR	Integrated Disease Surveillance and Response
INSP	*Institut National de Santé Publique* (National Institute of Public Health)
IR	Intermediate Result
IRL	Intermediate Reference Laboratory
LMIS	Logistics Management Information System
LPA	Line Probe Assay
MDR	Multidrug Resistant
MENA	Middle East and North Africa
MoCI	Ministry of Communication and Information
MoH	Ministry of Health
MoHCC	Ministry of Health and Child Care
MOHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MPHA	Myanmar Private Hospital Association
MTaPS	Medicines, Technologies, and Pharmaceutical Services
MTB	*Mycobacterium Tuberculosis*
NASIC	National Antimicrobial Stewardship Interagency Committee
NDD	National Diagnostic Division
NMRL	National Microbiology Reference Laboratory
NPHL	National Public Health Laboratory
NRL	National Reference Laboratory
NTEP	National Tuberculosis Elimination Program
NTP	National Tuberculosis Program
NTRL	National Tuberculosis Reference Laboratory
PCR	Polymerase Chain Reaction
QMS	Quality Management System
RAHO	Regional Animal Health Office
RDT	Rapid Diagnostic Test
RT-PCR	Reverse Transcription Polymerase Chain Reaction
SIZE	*Sistem Informasi Zoonoses dan Emerging Infectious Diseases* (System for Zoonotic and Emerging Infectious Disease)
SLMTA	Strengthening Laboratory Management toward Accreditation
SOP	Standard Operating Procedure
SRS	Specimen Referral System

TB	Tuberculosis
TWG	Technical Working Group
USAID	United States Agency for International Development
VAHIS	Vietnam Animal Health Information System
WHO	World Health Organization

Program Overview

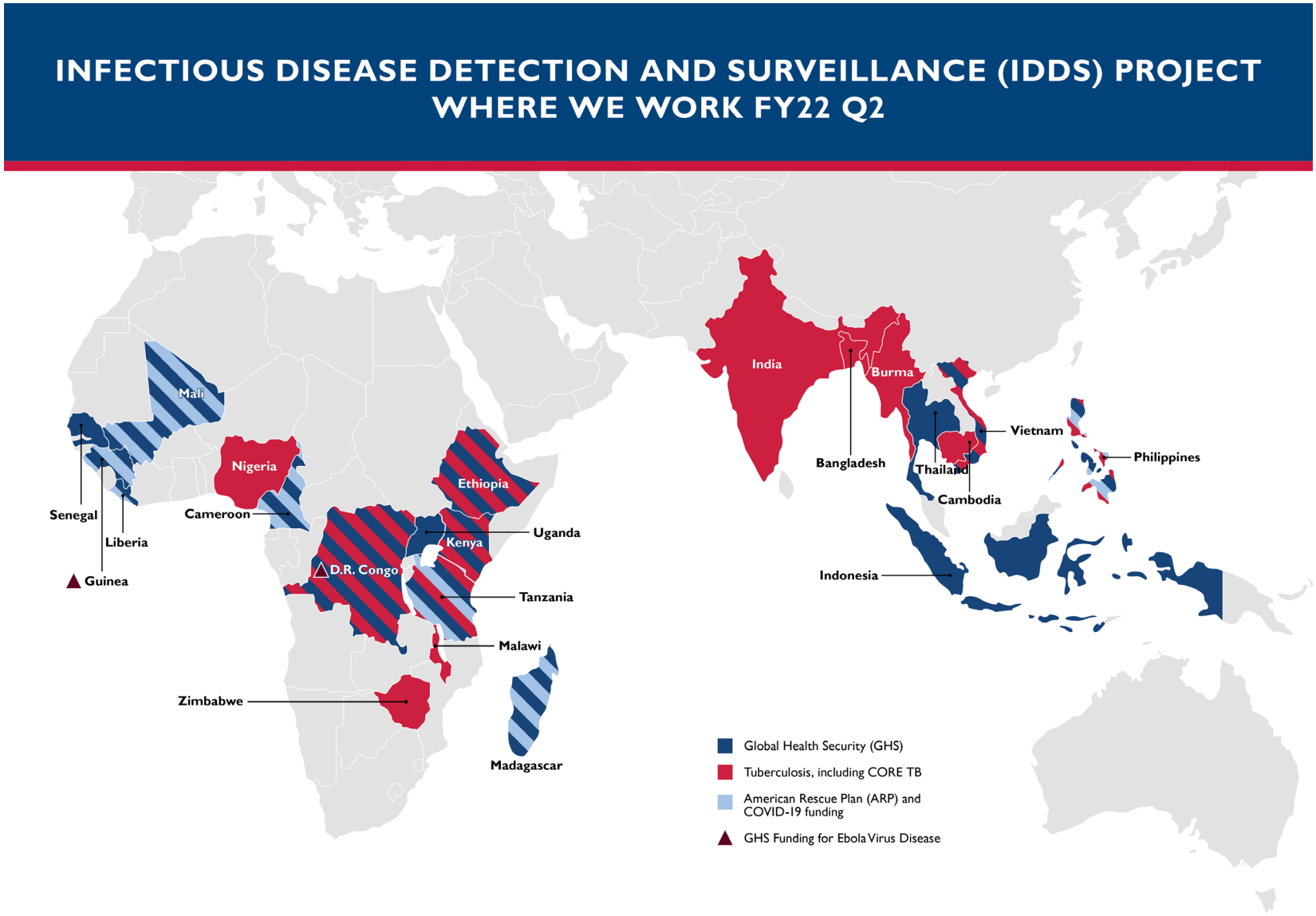
Summary Overview

Activity Name:	USAID Infectious Disease Detection and Surveillance
Activity Start Date and End Date:	May 22, 2018–May 21, 2023
Name of Prime Implementing Partner:	ICF Incorporated, LLC
Contract Number:	GS00Q14OADU119
Names of Partners:	PATH, FHI 360, African Society for Laboratory Medicine, Metabiota, Abt Associates, Gryphon Scientific, Association for Public Health Laboratories, Fondation Mérieux
Geographic Coverage:	*Countries*: Bangladesh, Burma, Cambodia, Cameroon, Democratic Republic of the Congo, Ethiopia, Guinea, India, Indonesia, Kenya, Liberia, Madagascar, Malawi, Mali, Nigeria, Philippines, Senegal, Tanzania, Uganda, Vietnam, Zambia, and Zimbabwe *Regions*: Middle East and North Africa
Reporting Period:	January 1, 2022–March 31, 2022

Program Description

The Infectious Disease Detection and Surveillance (IDDS) project is strengthening the capacity of 22 countries in Africa and Asia to effectively detect and monitor outbreaks of infectious diseases, improve identification and reporting of antimicrobial resistance (AMR) pathogens, increase tuberculosis (TB) detection and notification, and strengthen disease surveillance (Figure 1). The project's two primary intermediate result (IR) objectives are to strengthen country-level **diagnostic networks (IR 1)** and **surveillance systems (IR 2).**

Figure 1: IDDS project map



Quarterly Progress

FY 2022 Q2 Overall Achievements

This report summarizes activities that occurred during quarter 2 (Q2) of fiscal year (FY) 2022 and program year 4: January 1, 2022, through March 31, 2022. This quarter, the project implemented Global Health Security (GHS) activities in 14 countries, including supporting responses to the Coronavirus Disease 2019 (COVID-19) pandemic (through the American Rescue Plan [ARP]), and to the Ebola Virus Disease (EVD) outbreak (Figure 1). IDDS also implemented TB activities in 12 countries.

Global Health Security

Strengthening National Diagnostic Networks

IDDS is a key partner for countries in meeting objectives of the Global Health Security Agenda partnership and the U.S. Government's Global Health Security Strategy, including for the response to EVD outbreaks. Through GHS and EVD funding, IDDS is developing strengthened preparedness systems and national diagnostic networks that are accessible, accurate, adaptable, timely, and integrated. A strengthened network is one that:

- Is reliable and accurate, and provides rapid testing and reporting
- Enables effective communication between patients, clinicians and veterinarians, laboratories, and public health officials
- Spans the tiered levels from point-of-care to national and supranational sites

In FY 2022 Q2, IDDS supported 14 countries to strengthen their diagnostic networks. IDDS also supported response and preparedness for the Ebola outbreak in two countries and continued to support ongoing COVID-19 response activities. Key progress in these areas is presented in the sections that follow.

Identifying gaps in diagnostic networks and supporting essential components (IR1.1)

In FY 2022 Q2, IDDS continued to support countries to identify and address gaps in diagnostic networks, which included the following: collaborating with local stakeholders to operationalize national laboratory and strategic plans; mapping capacity in diagnostic networks; supporting implementation of quality management systems (QMS); improving access to diagnostics for priority infectious diseases including AMR bacteria, EVD, and other priority pathogens; and enhancing specimen transport referral and reporting systems.

IDDS teams continued to support the **development and dissemination of national-level policies,** including laboratory regulations, strategic plans, and standard operating procedures (SOPs) in three countries—**Cameroon,** the **Democratic Republic of the Congo** (DRC), and **Liberia.** In **Cameroon**, IDDS worked with the AMR National Coordination Center, run by the National Public Health Laboratory (NPHL), to operationalize its SOPs (developed in FY 2021) for AMR detection to ensure harmonization across key human and animal AMR sentinel surveillance sites. IDDS trained 59 laboratory staff (35 female) on the SOP for culture media preparation, pathogen identification, and

antimicrobial susceptibility testing (AST) in alignment with international standards of practice. In **DRC,** IDDS printed copies of the National Laboratory Policy and the Strategic Plan 2021-2025 for dissemination in Q3 across the eastern provinces. This will mark a significant step toward establishing strengthened policy implementation and governance of the diagnostic network in this region. IDDS's engagement in **Liberia** was with the National Diagnostic Division (NDD) in the Ministry of Health (MoH). IDDS supported three supervisory visits by the NDD technical team to Lofa, Nimba, and Bong counties to review the implementation of the National Laboratory Policy and the National Laboratory Strategic Plan documents.

IDDS **implemented assessments of laboratory network capacity** in several countries, including **Cameroon, Ethiopia,** and **Senegal.** These assessments were critical for identifying the gaps and areas of focus for subsequent technical assistance, training curricula development, and supportive supervision activities. In **Cameroon,** IDDS assessed key laboratory sites to understand the needs for capacity building and for supplies such as reagents, consumables, and equipment required for AMR detection. IDDS resumed operations in **Ethiopia** during this quarter, and partnerships were revived with several in-country organizations, including the Ethiopian Public Health Institute (EPHI). The first activity IDDS undertook in collaboration with EPHI was to conduct a rapid baseline assessment at one of the six target laboratory sites. This assessment provided the IDDS team with key information on the site-specific infrastructure, equipment, and supply needs. In collaboration with the Directorate of Laboratories in **Senegal,** IDDS completed assessments of the capacities and needs of two new diagnostic laboratories, Polyclinique Medina and Mbour. The assessment results enabled the IDDS team to develop a list of priority training and procurement needs that will be required to establish bacteriology testing and AST.

In three countries, IDDS worked to **enhance QMS** at diagnostic laboratories, namely **Kenya, Liberia,** and **Uganda.** IDDS provided technical assistance to Nyeri County Referral Hospital in **Kenya** in support of its efforts to achieve ISO 15189:2012 accreditation by the Kenya National Accreditation Services. Specifically, IDDS focused on select bacteriology tests for the Kenya National Accreditation Services accreditation assessment. In **Liberia,** IDDS provided Strengthening Laboratory Management toward Accreditation (SLMTA)-based QMS on-site mentorship to eight laboratories enrolled in the SLMTA program. Topics covered included conducting internal and safety audits, management review, and process control. In addition, quality officers at two sites in **Liberia** conducted QMS internal audits, with guidance from IDDS, to ascertain their compliance with ISO 15189:2012. In **Uganda,** IDDS collaborated with several in-country partners to conduct an on-site mentorship exercise at four Regional Animal Disease Diagnostics and Epidemiology Centers to implement QMS as per the ISO 17025:2017 standard requirements. In addition, IDDS worked in collaboration with the National Livestock Resources Research Institute to provide technical support to both the Ministry of Agriculture, Animal Industry and Fisheries and the National Animal Disease Diagnostics and Epidemiology Center to conduct a QMS document review workshop. The two objectives of the session were: (1) to assess alignment of QMS policy documents and procedures with the ISO 17025:2017 requirements; and (2) to ensure that all Regional Animal Disease Diagnostics and Epidemiology Centers have standardized policy documents, SOPs, and forms documents in place to support QMS implementation. Finally, IDDS worked closely with local partners to conduct a Corrective and Preventive Action training in the Jinja District of **Uganda,** which targeted quality managers from QMS implementing laboratories. Ultimately, this training will help these sites identify critical gaps and conduct root cause analyses, which will contribute to the development of corrective action plans throughout QMS implementation.

IDDS worked in several countries to **increase access to bacteriology diagnostic services by decentralizing services**, strengthening specimen referral systems (SRS), and strengthening linkages between clinical and laboratory services. To strengthen the supply chain of microbiology commodities in regional laboratories in **Tanzania**, IDDS organized a three-day workshop in Morogoro to ensure that microbiology commodities are coded into the Tanzania Electronic Logistics Management Information System the system, grouped by utility, and available for order by users at the facility level. In **Tanzania** and **Kenya**, IDDS supported procurement of required supplies and equipment that are critical for ensuring uninterrupted bacteriology diagnostic services**.** In **Kenya** IDDS worked with five laboratories to develop lists of required bacteriology supplies based on current supply needs, including culture media, AST disks, consumables for specimen collection, culture media plates, and other reagents for automated identification and AST. In addition, IDDS worked with the Kitale County Referral Hospital Laboratory in **Kenya** to secure automated blood culture equipment and provide training and technical support to the laboratory team to further strengthen the laboratory's diagnostic testing capacity. In **Liberia**, IDDS supported the National Public Health Reference Laboratory and the NDD in conducting an assessment to validate the readiness of the bacteriology diagnostic services at laboratories that were established with IDDS support. The goal of this assessment was to determine whether these sites should be selected and leveraged for decentralized bacteriology testing for the National Public Health Reference Laboratory. In **Guinea** and **Senegal,** IDDS supported bacteriology decentralization process in the respective countries by providing technical assistance to three and seven diagnostic facilities of the peripheral level of the health pyramid. In **Senegal**, IDDS also assessed two new laboratories to identify what the sites require to begin performing bacteriology testing.

In **Liberia,** IDDS met with hospital staff and supported the dissemination and posting of job aids in strategic locations to **increase clinicians' awareness of newly available bacteriology testing** at three county laboratories in Lofa, Nimba, and Bong counties and to encourage good use of antimicrobials. IDDS also engaged with the newly appointed laboratory director for Phebe Hospital in Bong County, **Liberia,** and helped review the laboratory request form to ensure that it includes bacteriology test options. In **Tanzania**, IDDS helped develop standard case definitions and patient eligibility criteria for culture and antimicrobial sensitivity testing (AST) of urine, blood, and wound site specimens to help orient health care providers on how best to use bacteriology testing services.

IDDS also continued **support for the establishment of SRS** in four countries. In **Kenya,** IDDS continued to provide technical assistance to two counties to establish a coordination mechanism for integrated SRS inclusive of bacteriology specimens for AMR surveillance sites. IDDS also provided support to Bungoma County in **Kenya** to convene its inaugural integrated SRS technical working group (TWG). This TWG resolved to function as the coordination mechanism, develop or revise tools such as the specimen referral forms and transportation logs, and revise the bacteriology tests request form to capture surveillance variables that are often missed. In **Vietnam,** IDDS **engaged private sector couriers to establish specimen transport systems,** provided a refresher training on specimen packaging and incident handling to 68 laboratory staff and representatives of the courier company (23 female), and finalized and disseminated16 specimen transport SOPs for human and animal SRS. IDDS's efforts in **Guinea** and **Liberia** helped to reinforce the existing systems and processes that are required for safe and effective specimen management and transport. In **Guinea**, IDDS completed a specimen management and transport pilot program; this pilot ensured that the country was prepared to implement an effective and cost-efficient specimen referral system (SRS). IDDS provided ongoing mentorship to laboratory personnel on specimen collection, packaging, and transport in **Liberia.** IDDS

also engaged with the clinicians and laboratory personnel in supported sites in facilitating the process of specimen collection, packaging, and transportation to and within the laboratories in **Liberia**.

To **improve biosafety and biosecurity practices** in laboratories, IDDS worked with teams in **DRC, Liberia, Cameroon,** and **Uganda** on various aspects of risk mitigation. In **DRC,** three biosafety and biosecurity manuals were finalized and disseminated with IDDS support. IDDS developed training modules and facilitator guides for priority topics, including laboratory biosecurity, biological specimen storage and transport, and biological specimen collection, and the team confirmed their alignment with the MoH's guidelines. In addition, IDDS provided facility-based waste management training to 13 laboratory staff members (1 female) at Phebe Hospital in Bong County, **Liberia.** IDDS supported the **Cameroon** Laboratories Network for maintenance and certification of 18 biosafety cabinets in six human and two animal laboratories across four regions. A total of fifteen class II, two laminar air flow, and one class I biosafety cabinet were certified. Finally, IDDS worked with several locally based partners in **Uganda** to conduct a biosafety and biosecurity training for laboratory directors and safety managers to satisfy ISO 35001:2019 and ISO 15189:2020 requirements. This training was especially relevant to the participants because they represented laboratories that receive and test dangerous pathogens, and the lessons learned will improve their knowledge of bio risk management.

The **DRC** MoH declared the end of the EVD outbreak on December 16, 2021.[1] Implementing partners, including IDDS, concluded EVD outbreak response activities on January 21, 2022. To **sustain the improved testing capacity for EVD,** IDDS concluded activities by delivering rapid diagnostic test (RDT) kits and pipette tips, which can be used for cadaveric surveillance as needed in the future. IDDS continued to support a pilot program in **Guinea** of the specimen transport, referral, and tracking system, which has been ongoing since December 2021. Thus far, no specimen has been rejected at reference laboratories, indicating that the system is functioning well, and specimens are arriving in good quality. In addition, IDDS delivered reverse transcription polymerase chain reaction (RT-PCR) test kits for Lassa fever and Marburg disease in **Guinea**; although there was a delay in the delivery timeline, IDDS confirmed the quality of these test kits by working with the viral hemorrhagic fever reference laboratory to run a quality check.

Recognizing the importance of sustainability planning and local ownership, IDDS has completed a costing plan for the development of the Rodolph Merieux Laboratory and the Public Health Network Laboratory in the **DRC** eastern region (2022-2025). In addition, IDDS's ongoing focus in the eastern region of **DRC** has expanded to include the ongoing development of a financial sustainability framework for the regional public health laboratory network. In **Liberia,** to drive the NDD's ownership of overarching project activities, IDDS convened a meeting to review planned activities with their technical team and provided technical assistance to expand NDD's leadership role across the diagnostic network. IDDS purposefully ensured that the NDD technical team was leading the efforts on both national and county-level activities that IDDS and other partners are implementing, which will engender country ownership and further promote harmonization of efforts across all partners. In addition, IDDS provided technical support to the county health teams in Lofa, Nimba, and Bong counties in **Liberia** to promote county readiness to provide quality laboratory results. These engagements also included interactions with the county diagnostic officers who are critical for the coordination of partner activities at the county level. In **Kenya,** IDDS collaborated with the National Antimicrobial Stewardship Interagency Committee (NASIC), County Antimicrobial Stewardship Interagency Committees, and the USAID-funded Medicines, Technologies, and Pharmaceutical Services (MTaPS) project to conduct

[1] Source: https://www.who.int/emergencies/disease-outbreak-news/item/2021-DON351.

workshops to promote diagnostic and antimicrobial stewardship at the county level. Each session was facilitated by the county antimicrobial stewardship coordinator, county medical laboratory coordinator, and clinical consultants. The trained health workers are expected to cascade the trainings to their respective health facilities and spearhead strengthening of diagnostic and antimicrobial stewardship activities.

Table 1: Project outputs related to strengthening diagnostic networks for FY 2022 Q2 and the countries that contributed to these outputs (covers GHS, EVD, and ARP funding)

GHS IR 1.1: Gaps in diagnostic networks identified and essential components supported								
	TOTAL	Testing Procedures	Equipment Maintenance	Commodity Management	QMS	Specimen Referral	Biosafety	Other Diagnostic Network Topics
People Trained	389	98	0	0	10	225	56	0
SOPs, Plans, and Guidelines Developed, Revised, or Disseminated	133	23	6	3	8	1	92	0
TWG Meetings Held	9	2	0	1	3	1	1	1
Supervisory Visits Conducted	16	7	0	0	4	5	0	0
Pilots Conducted	4	1	0	0	0	3	0	0
Assessment Reports Completed	1	1	0	0	0	0	0	0
Persons Mentored	106	71	0	0	27	8	0	0
Specimen transported-COVID-19	4,491	0	0	0	0	4,491	0	0
Countries[1]								
Cameroon		●				●		
DRC							●	
Ethiopia								
Guinea						●		
Indonesia		●						
Kenya		●				●		
Liberia		●			●		●	
Madagascar								
Mali								●
Philippines						●		
Senegal								
Tanzania		●		●		●		
Uganda		●	●	●	●		●	
Vietnam						●		

TWG=technical working group

[1] Countries listed are those that contributed to specific outputs in Q2. Countries that are working toward an output but have not achieved it are not included.

Integrating appropriate diagnostic network components among various infectious diseases (IR 1.2)

IDDS supported country efforts to **integrate diagnostic network components across human and animal health** in two countries in FY 2022 Q2— **Cameroon**, and **Vietnam**. In **Cameroon,**

IDDS assisted the NPHL with conducting a joint supervision of the seven sentinel bacteriology laboratories engaged in a pilot AMR surveillance program for priority pathogens in human and animal health to ensure the harmonization of procedures for AMR detection. IDDS developed a supervision guide to assess the availability and use of national SOPs and reference manuals, the availability of reagents and consumables, the knowledge of priority pathogens for surveillance, and quality management practices. In **Vietnam,** IDDS is **strengthening private and public sector collaboration for SRS** across human and animal sectors. To pilot the SRS, IDDS developed and shared a preliminary version of the human specimen information management application with the provincial- and district-level facilities and developed a training video on incident (spill or leak) handling during specimen transport. The IDDS team in **Vietnam** also prepared spill kits from locally available materials and distributed the kits to specimen referral facilities and courier companies that are involved in the SRS pilots. These activities, in combination with the establishment of a contract with a local courier company, are key milestones in the establishment of a robust, national-level specimen transport system.

Improving capacity to detect priority pathogens and AMR (IR 1.3)

IDDS **strengthened capacity to detect priority pathogens and AMR** in several countries during FY 2022 Q2. In **Cameroon,** IDDS mentored 56 laboratory staff (35 female) from animal and human health laboratories on the use of standard operating procedures for culture media preparation, pathogen identification and AST in compliance with international norms, the implementation of internal quality control and participation in external quality controls. In **Indonesia,** IDDS trained 23 laboratory officers (18 women) to strengthen the capacity of public health surveillance laboratory officers to detect new zoonotic pathogens that have the potential to initiate an outbreak or pandemic. In **Kenya,** IDDS supported the placement of one laboratory technologist from each of five laboratories (Bungoma, Malindi, Kitale, Murang'a, and Nyeri counties) at the Aga Khan University Hospital Laboratory to enhance skills on organism identification, AST, and quality standards during two-week rotations. In **Liberia,** IDDS provided financial support for the NDD bacteriology champion to provide bacteriology mentorship sessions to two bacteriology laboratories, Tellewoyan and G.W. Harley laboratories. A total of five participants (one female) received mentorship, including on processing of blinded specimens, quality control, and the use of WHONET software

IDDS **prioritized strong external quality assurance (EQA) activities** in **Guinea, Kenya,** and **Tanzania,** which are critical for ensuring the accuracy of test results. In **Guinea,** IDDS initiated the procurement of reagents and supplies for the Institut National de la Santé Publique to support the second round of EQA for the AMR surveillance network. In **Kenya,** IDDS, in collaboration with NASIC and the National Microbiology Reference Laboratory (NMRL), provided feedback to 12 AMR surveillance sites on the EQA findings and trained laboratory personnel from the 12 sites on effective documentation of corrective and preventive action in unsatisfactory EQA results. IDDS and the NMRL in **Kenya** encouraged surveillance sites that were not referring isolates for retesting to start referring monthly as part of a robust EQA strategy to guarantee the quality of AMR testing. In addition, IDDS continued to provide technical assistance to the NMRL to enter, clean, and analyze bacterial isolates retesting data, and provided technical assistance to the supported surveillance sites to address challenges they encountered in the referral of bacterial isolates to the NMRL. Finally, in **Tanzania,** five NPHL microbiology experts were supported to carry out supportive supervision visits at the four IDDS-supported AMR surveillance laboratories. The aim of the supportive supervision visits was to follow up on implementation of the EQA program, conduct root cause analysis, and carry out corrective actions for poor performance.

Strengthening National Surveillance Systems

To help countries to prevent, rapidly and effectively detect, and respond to events of significance for public health, IDDS continues to assist countries with strengthening their national surveillance systems at all levels of the health system. In FY 2022 Q2, IDDS supported countries to address critical gaps in their surveillance systems; strengthen indicator-based surveillance, event-based surveillance (EBS), and community-based surveillance (CBS); improve AMR and priority pathogen surveillance; and increase interoperability between human and animal health and health security information systems.

Identifying and addressing gaps in surveillance systems (IR 2.1)

In FY 2022 Q2, IDDS provided support to countries to strengthen surveillance capabilities for priority pathogens at all tiers of the health system. Specifically, IDDS focused on **establishing a functional data system to perform surveillance** in **Mali** by supporting communications costs for CBS actors across three districts and monitoring the quality of the data collected from the health districts. Also in **Mali**, IDDS worked with the Ségou Region health districts to develop terms of reference and budgets for the first round of biannual integrated disease surveillance and response (IDSR) **supportive supervision visits to underperforming community health centers.**

In **Tanzania,** IDDS supported staff from the Tanzania Veterinary Laboratory Agency to conduct an assessment of laboratory capacity to detect and report AMR in two veterinary laboratories using the Food and Agriculture Organization of the United Nations Assessment Tool for Laboratories and AMR Surveillance Systems, which will help inform on the existing laboratory and surveillance capacity, equipment and supply needs, current personnel capacity, and training needs for implementation of the National AMR Surveillance Framework in these animal health surveillance sites.

Table 2: Project outputs related to strengthening surveillance systems for FY 2022 Q2 and the countries that contributed to these outputs

Result area: GHS IR 2.1: Gaps in core functions of surveillance systems identified and essential activities supported						
	TOTAL	Interoperability	Electronic Reporting	Data Quality	Data Analysis and Use	Other Surveillance Topic
People Trained	266	0	117	63	27	59
SOPS, Plans, and Guidelines Developed, Revised, or Disseminated	0	0	0	0	0	0
TWG Meetings Held	14	2	0	5	5	2
Supervisory Visits Conducted	22	0	0	11	1	10
Pilots Conducted	3	0	3	0	0	0
Assessment Reports Completed	0	0	0	0	0	0
Persons Mentored	31	0	0	27	4	0
Countries[1]						
Cameroon			●		●	●
DRC						
Ethiopia						
Guinea						
Indonesia		●		●	●	

Result area: GHS IR 2.1: Gaps in core functions of surveillance systems identified and essential activities supported						
	TOTAL	Interoperability	Electronic Reporting	Data Quality	Data Analysis and Use	Other Surveillance Topic
Kenya					●	
Liberia						
Madagascar				●		
Mali						●
Philippines						
Senegal					●	
Tanzania				●		●
Uganda			●		●	●
Vietnam				●		

[1] Countries listed are those that contributed to specific outputs during Q2. Countries that are working toward an output, but have not achieved it, are not included.

Improving interoperability and interconnectedness across national disease reporting systems (IR 2.2)

In addition to addressing gaps in surveillance systems, IDDS has continued to **prioritize the integration of national disease reporting systems,** and in FY 2022 Q2, IDDS worked with partners in **Indonesia** and **Uganda** to **strengthen these connections across the diagnostic laboratory networks.** In **Indonesia,** IDDS focused on the implementation of the "Guidelines for Implementation of Four-Way Linking (4WL) for Management of Health Problems at Human, Animal, and Environmental Interfaces" document at pilot sites in Demak District (Central Java) and Bandung Barat District (West Java), with a specific focus on tracking and reporting cases of leptospirosis. The 4WL guidelines provide an integrated framework for understanding risks and gaps in the disease reporting systems across four sub-sectors: animal health epidemiology, animal health laboratories, human health epidemiology, and human health laboratories. The implementation of the 4WL is important, especially when zoonotic endemic diseases increase that have an interface between humans, animals, and the environment. In, **Uganda,** IDDS supported the AMR National Coordination Center in compiling and analyzing 2021 national AMR surveillance data, with the goal of drafting the country's first Annual AMR Report. By integrating data from both the animal and human health sectors, the TWG was able to draft a report that was grounded in a One Health approach.

EBS is used to **identify and track infectious diseases and public health incidents.** EBS integrates collecting, monitoring, assessing, and interpreting data to understand the potential risks associated with unusual events. In **Vietnam,** IDDS collaborated with the Regional Animal Health Offices (RAHOs) to facilitate bimonthly meetings to (1) review the use of the Vietnam Animal Health Information System's (VAHIS) across five pilot provinces, and (2) assess the need for VAHIS implementation at the district-level. IDDS also provided coaching to provincial and district surveillance staff on recording and classifying EBS signals and events to improve accuracy and coverage. To further reinforce these efforts, IDDS also collaborated with the Pasteur Institute of Ho Chi Minh City to hold EBS supportive supervision at provincial, district, and commune levels across the country.

Improving capacity to conduct surveillance of priority pathogens and AMR (IR 2.3)

IDDS has prioritized the **need for timely and accurate data reporting at AMR surveillance sites** and continued to provide support on quality data review in four countries: **Kenya, Senegal,**

Tanzania, and **Vietnam.** In **Kenya,** IDDS visited two AMR surveillance sites that have piloted the use of WHONET software for management and analysis of AMR surveillance data, with a specific focus on reporting the results of AST. During these visits, IDDS also conducted refresher trainings for two participants from each site and piloted data entry using WHONET. IDDS also helped the laboratory teams to extract data from the laboratory information system and convert them to a WHONET file using BacLink for data analysis. With the support of IDDS, all five IDDS-supported AMR surveillance sites in **Kenya** have now piloted the use of WHONET software for management and analysis of AMR surveillance data. This will increase the sites' capacity to provide data-driven recommendations on treatment options as well as monitor resistance trends.

Enhanced data reporting systems for priority pathogens and AMR was a focus area in three countries this quarter—**Guinea**, **Tanzania, and Uganda.** In **Guinea,** IDDS continued providing technical support and internet connectivity to the three IDDS-supported laboratories and the *Institut National de la Santé Publique* (INSP, or National Institute of Public Health) on reporting AMR data to the national-level database. In **Tanzania,** IDDS convened a workshop to clean data uploaded into the Tanzania Electronic Logistics Management Information System (e-LMIS) to ensure microbiology commodities are appropriately coded in the system, grouped by utility, and available for order at the facility-level. The ultimate goals of this exercise were to strengthen the supply chain of microbiology commodities for AMR testing, ensure that the e-LMIS contains an exhaustive list of available microbiology commodities, and minimize stockouts of essential supplies. In **Uganda,** IDDS collaborated with the National Animal Disease Diagnostics and Epidemiology Center to install and pilot an electronic data entry and analysis tool in four districts.

IDDS focused on **improving the quality of surveillance data** in **Cameroon,Senegal, and Vietnam.** IDDS provided training and mentorship support on the WHONET data entry tool for AMR data collection in **Cameroon.** This training aimed to increase the number of bacteriology laboratory staff who can collect quality data using the WHONET software, which further strengthens the reliability and sustainability of the system to capture the impact of AMR nationwide. In addition, IDDS worked with **Cameroon's** NPHL to assess data quality through the implementation of a comprehensive questionnaire that assessed the four dimensions of quality—completeness, timeliness, consistency, and accuracy. the completed questionnaire aimed to assess alignment to the national surveillance guidelines of **Cameroon.** In addition, IDDS provided technical and financial support to the AMR National Coordination Center in **Cameroon** to draft the country's first Annual AMR Report in collaboration with the AMR surveillance TWG and the National Veterinary Laboratory. The report was grounded in One Health themes and included data from both the animal and human health sectors. In **Senegal,** IDDS conducted a training to improve the quality of DHIS2 data and strengthen the capacity of surveillance officers and medical officers to analyze surveillance data prior transmission to the MoH. A total of 27 staff (12 females) from three health districts of the Kedougou medical region (Salemata, Saraya, and Kedougou) were trained. In **Vietnam,** IDDS supported three data review meetings for partners to review animal disease data reported in VAHIS from provincial-level sites, and discussed ways to improve timeliness, completeness, and accuracy in reporting. With IDDS support and the collaboration of RAHOs, provincial Sub-department of Animal Health staff in five pilot provinces across **Vietnam** have increased the use of VAHIS for electronic reporting of animal outbreak data to very high rates (90–100 percent). The **Vietnam** Department of Animal Health requested IDDS to support extending VAHIS use at the district level in the five pilot provinces. Taken together, the use of VAHIS at the provincial- and district-level sites will facilitate data management, access, and reporting by local animal health staff, and contribute to a more cohesive dataset for priority pathogen surveillance.

In **Tanzania,** IDDS and the USAID-funded MTaPS project sponsored a joint session for two TWGs on AMR surveillance and antimicrobial stewardship at the national level. This joint meeting aimed to: (1) **improve AMR data sharing** and use across different interventions, and (2) **explore synergies across various interventions to address the threat of AMR** in country. IDDS continued to conduct periodic AMR data reviews to enhance AST performance and AMR data collection, analysis, and reporting for urine, blood, and wound specimens at four IDDS-supported sites across **Tanzania.** IDDS convened a meeting to discuss the findings of the data reviews and share experiences and best practices to improve the quality of the data reported to the national level and, subsequently, to GLASS.

Finally, in **Uganda,** IDDS collaborated with the National One Health Platform to train district One Health teams from two districts on the implementation of coordinated surveillance using a One Health approach at a sub-national level. This activity decentralized the implementation of One Health and bolsters surveillance of priority zoonotic diseases. The training operationalizes the **Uganda** National One Health Strategic Plan (2018-2022), which calls for the **decentralization of One Health approaches** and promotes multisectoral collaboration and coordination of surveillance activities.

COVID-19

IDDS continued to support the global response to the COVID-19 pandemic by increasing countries' capacity to transport and test COVID-19 specimens, funded by the ARP. In FY 2022 Q2, IDDS supported seven countries in COVID-19 specimen transportation, training and technical assistance, and procurement of essential equipment and supplies. Countries receiving COVID-19 and ARP funding are **Cameroon, Guinea, Liberia, Madagascar, Mali,** the **Philippines,** and **Tanzania.** IDDS continued to strengthen laboratory capacity for providing timely diagnosis of suspected cases and contact tracing as well as safe specimen collection, packaging, and transport, which are critical to preventing the spread of COVID-19.

Several IDDS-supported countries have seen a decline in the number of cases of COVID-19, which has enabled country teams to travel slightly more often than in previous quarters. Country teams are still observing any travel restrictions and taking precautions to maintain their safety during their field visits. In the past, local and international travel restrictions have often prevented in-person engagements; however, with the global reduction in cases, IDDS has resumed field visits, workshop implementation, and on-site mentorship activities. In countries where the COVID-19 transmission rates and case counts remain high, IDDS continued to communicate with partners to ensure transparency, minimize any delays to implement activities as much as possible, and build on the progress made during FY 2022 Q1.

Specimen collection and transport

IDDS supported **specimen collection and transport capacity building activities** in four countries during this quarter: **Cameroon, Madagascar,** the **Philippines,** and **Tanzania. Cameroon** continued efforts to transport specimens for genomic sequencing from air and land entry points in the Adamawa, East, Far-North, and North regions of the country as part of cross-border surveillance for COVID-19 at national entry points. IDDS also liaised with specimen collection sites in five regions during the African Cup of Nations soccer competition that took place in **Cameroon** during February 2022; the influx of athletes and visitors required additional support from partners to maintain robust COVID-19 surveillance practices across the diagnostic network. In **Madagascar** and the **Philippines,** IDDS provided support for the procurement of specimen collection swabs, specimen transport boxes, rapid antigen tests, and personal protective equipment to support ongoing COVID-19 response

activities in both countries. Also in the **Philippines,** IDDS transported specimens to testing sites in 6 IDDS-supported provinces for genomic sequencing, and IDDS mobile swabbers collected 149 specimens for RT-PCR tests and rapid antigen tests.

In **Tanzania,** IDDS purchased 2,000 specimen collection kits (swabs and viral transport media), pipette tips, and pipette holders for the NPHL to expand their COVID 19 testing capabilities. IDDS also provided logistics and technical support to the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) and NPHL staff in **Tanzania** to carry out supportive supervision visits in five regions: Mtwara, Lindi, Geita, Katavi, and Rukwa. These sites were selected for support because they are regional hubs and have points of entry, such as airports, seaports, and ground crossings, where COVID-19 screening, and specimen collection and handling occur. The focus of these visits was to **assess diagnostic specimen management practices** and identify and address gaps and to provide technical guidance on COVID-19 specimen collection, packaging, storage, and transportation to ensure the quality of COVID-19 test results.

Training and technical assistance

During FY 2022 Q2, IDDS provided technical assistance, training, and ongoing mentorship to **assist laboratory networks across four countries to respond to the COVID-19 pandemic.** In **Cameroon,** IDDS facilitated a cross-border surveillance training that included topics relevant to the issue of disease transmission between countries, including safe specimen collection and transport, implementation of guidelines and procedures for the prevention of COVID-19 spread, and response to public health emergency events occurring at national entry points. IDDS also initiated an agreement with the *Centre Pasteur du Cameroun* (Pasteur Center of Cameroon), which will support the deployment of 17 laboratory technicians to 13 reference laboratories to conduct COVID-19 testing. These target sites across **Cameroon** were selected during strategic discussions with the NPHL.

During this quarter in **Madagascar,** two supervisory teams comprising national government representatives from the Department of Health Monitoring, Epidemiological Surveillance, and Response of the MoH, a technical advisor from IDDS, and representatives from the respective district governments carried out supportive supervision visits at health centers in several districts. The **supervisory teams assessed current practices and provided on-site training** for the collection, cleaning, and organization of COVID-19 surveillance data, as well as electronic data management and reporting at 33 basic health centers at the district level. Supervisory visits were also carried out in five regions across **Mali** by a team comprising representatives from the *Direction Générale de la Santé et de l'Hygiène Publique*, representatives of the regional directorates of health, and the surveillance officers of the health districts visited. These visits focused on assisting community health centers with COVID-19 case detection, data management, and reporting. The objectives of supportive supervision visits in **Mali** included the following: verifying the availability of trained human resources, equipment, and commodities and identifying gaps; briefing staff on technical guidelines; evaluating the availability of reporting forms and ensuring the accurate and timely completion of these forms; verifying that collected data are being reported regularly into DHIS2; offering recommendations to resolve challenges encountered at the site level; verifying the list of suspected cases and contacts; and providing feedback and mentorship as needed to fill gaps identified during these visits. Supervisory visits were carried out in five regions across **Tanzania** by supervisory teams comprising laboratory experts from the NPHL and the MoHCDGEC.

Also in **Tanzania,** IDDS supported the MoHCDGEC in convening a validation workshop for SOPs for the management of COVID-19 genomic sequencing specimens. In addition, the SOP for **management**

of COVID-19 specimens for genomic sequencing in **Tanzania**, which was developed with IDDS support in previous months, was reviewed by the National COVID-19 Task Force, endorsed by the Director of Curative Services, and approved by the Chief Medical Officer of the MoHCDGEC. Following the approval, IDDS printed 100 hard copies and supported a dissemination workshop. IDDS reviewed the findings of an assessment conducted at eight laboratories to determine their capacity for COVID-19 testing as part of the national strategy to decentralize COVID-19 testing across **Tanzania.** After the review, the NPHL selected three laboratories to function as part of the decentralized COVID-19 polymerase chain reaction (PCR) testing laboratories based on their capacity for biological specimen collection, packing, and transport; sufficient specimen storage facilities; adequate staffing; and some degree of quality management.. Two of these regional laboratories are strategically positioned to test specimens collected at points of entry from neighboring DRC, Burundi, Rwanda, and Uganda, which positions **Tanzania** as a strong partner country in international public health response.

Finally, IDDS continued to **support procurement needs for essential COVID-19 supplies** across all seven current IDDS-supported countries. In **Cameroon, Guinea, Madagascar, Mali,** and the **Philippines,** IDDS delivered COVID-19 testing supplies, reagents, and consumables, such as PCR plates, cryovials, nucleic acid extraction reagents, and RDT kits, which will support COVID-19 testing and reporting at reference laboratories in these countries. In addition, IDDS ordered a -80°C freezer for **Cameroon,** which will be used to store COVID-19 genomic sequencing specimens at the NPHL. In **Liberia,** the **Philippines,** and **Tanzania,** IDDS also delivered waste disposal bins, sharps boxes, pipettes, and essential personal protective equipment, such as gloves, masks (N-95 and surgical), and aprons, to health teams, which will assist with the ongoing COVID-19 pandemic response efforts in these countries.

Middle East and North Africa

Detailed information regarding diagnostic networks in the Middle East and North Africa (MENA) region is lacking because countries have not had a comprehensive laboratory mapping and diagnostic network capacity assessment performed. Other assessment tools have been completed (e.g., Joint External Evaluation (JEE), TB Diagnostic Network Assessment [DNA], etc.); however, these have been either programmatic (siloed) or lacked granularity and did not capture gaps in specific diagnostic capacities (e.g., whole genome sequencing) across the diagnostic networks (public, private, and academic), including public and private sector laboratories, which can be supported by stakeholders to strengthen the diagnostic network. IDDS received field funds for the MENA region to review and adapt the TB-DNA tool, along with other network capacity assessment tools, for **MENA countries.** The primary objective is to assess laboratory capacity and preparedness for emerging and reemerging disease threats.

During FY 2022 Q2, the IDDS team conducted a desk review of several laboratory assessment tools and developed a new MENA DNA tool that will be piloted in one pre-selected country to capture comprehensive, up-to-date information on the capacities and gaps. The pilot will also reveal the useability of the DNA tool and enable the IDDS team to adjust the questions and scoring guide as needed. Once the DNA tool is piloted, the goals will be to implement the DNA in two pre-selected countries to gather data that will then be leveraged to inform priorities for technical assistance and training. IDDS included several topics in the DNA tool including: infrastructure, human resources, laboratory testing capacity, supply chain management, biosafety, and One Health practices, among others. The proposed countries for the first-round assessments are Lebanon, Morocco, and Tunisia.

Tuberculosis

Strengthening National Diagnostic Networks

IDDS is implementing programs globally to strengthen TB diagnostic networks with both Core and field funding from USAID. Through its work, IDDS is building diagnostic capacity using new rapid molecular diagnostic tools for TB, drug-resistant (DR)-TB, and multidrug resistant (MDR)-TB case detection and enhancing capacities of national and regional reference laboratories and staff across 13 countries in FY 2022 Q2.

Identifying and addressing gaps in diagnostic networks (IR 1.1 TB)

This quarter, IDDS prepared for and conducted high-quality TB DNAs and laboratory spatial analyses, strengthened the TB SRS, expanded use of GeneXpert (GX) and TB diagnostic connectivity solutions, strengthened leadership and management of and within the TB network, and strengthened engagement with the private sector.

IDDS continued **implementation of its flagship DNA** through activities in **Tanzania** and **Ethiopia.** In **Tanzania,** the team disseminated the final report at an event hosted by the African Society for Laboratory Medicine. In **Ethiopia,** IDDS worked with EPHI to conduct the self-assessment step of the DNA and conducted verification visits with 31 external consultants at 78 diagnostic sites in the country. During the DNA, IDDS piloted its DR-TB checklist, which assesses the capacity and availability of first- and second-line drug susceptibility testing (DST) and adds to the comprehensiveness of the IDDS DNA process. IDDS **implemented laboratory spatial analyses** this quarter in numerous countries to inform placement of molecular diagnostic instruments. In **Burma,** spatial analysis was carried out to identify 12 new GX expansion sites to improve diagnostic network coverage, including across the private sector. IDDS continued data collection and analysis in **Ethiopia, Tanzania,** and the **Philippines,** and produced final reports for **DRC, Kenya,** and **Zambia.** IDDS also finalized the spatial analysis protocol, which will provide guidance to national and regional laboratories on conducting their own analyses.

IDDS implemented activities to **strengthen the TB SRS** in two countries this quarter—**Burma** and **Vietnam.** In **Burma,** IDDS developed software architecture for an innovative web-based SRS mobile application, which was shared with the World Health Organization (WHO) to ensure its interoperability with other applications and with private sector TB service providers to enhance utilization and potential sustainability of the initiative. In **Vietnam,** IDDS contracted SystemOne as part of the beginning of its SRS pilot.

IDDS **expanded the use of GX** in four countries this quarter. In **Bangladesh,** IDDS worked to address low GX utilization rates and strengthen monitoring and supervision of GX sites by updating SOPs and monitoring checklists for GX to align with national policies and guidelines. IDDS also subcontracted with the Bangladesh Rural Advancement Committee (BRAC) and the Damien Foundation and selected 80 GX sites for EQA activities and adapted and translated the GX EQA SOPs for the local context. In **Burma,** IDDS met with WHO, USAID, and other partners to follow up on advanced training of GX; in **Cambodia**, IDDS developed the site selection criteria for the GX 10-color system; and in **Tanzania**, IDDS procured a second round of EQA panels for 220 GX sites across the country to bolster the capacity of the National Tuberculosis and Leprosy Program. IDDS also **improved TB diagnostic connectivity solutions** in two countries. In **Bangladesh,** IDDS trained 30 participants as

part of a training of trainers on GX ASPECT, a SystemOne connectivity solution for GX instruments that facilitates reporting for real-time decision-making and will allow the National Tuberculosis Program (NTP) to monitor functionality and use of GX at all sites. In **Cambodia,** IDDS worked with Savics and the Center for TB and Leprosy Control (CENAT) to conduct DataToCare (DTC) training and installation in 10 Community Mobilization Initiatives to End Tuberculosis (COMMIT)-supported operational districts. The 18 super-users trained virtually as part of the training of trainers provided hands-on training to an additional 64 participants on how to use the DTC system, which will allow CENAT to monitor and analyze routine results and diagnostic performance and initiate treatment for TB patients in communities in a timely manner.

Activities to **strengthen leadership and management of the TB diagnostic network** were implemented in five countries. In **Bangladesh,** IDDS supported the NTP to complete costing of the TB Laboratory Strategic Plan (2021-2025), which will enable the NTP to plan for resource mobilization and implementation. IDDS also supported decentralization of the TB program by working with the NTP to shift routine diagnostic activities from the National TB Reference Laboratory (NTRL) to the regional level. In **Burma,** IDDS worked with the private sector Myanmar Private Hospital Association (MPHA) to discuss collaboration on deployment of GX instruments, set up of a sputum SRS, and a subsidized cost scheme for GX testing at private hospitals. This work will be essential to maintaining TB services in the midst of political and pandemic crises. In **India,** IDDS continued to pilot the guiding supervisory checklist and monitoring and evaluation package at two national reference laboratories (NRLs) and two intermediate reference laboratories (IRLs) with the Central TB Division (CTD) and developed a concept note and agenda for a proposed management training for NRLs and IRLs, which includes a component on QMS and data management. The training will facilitate greater governance of the TB diagnostic network. IDDS also piloted its laboratory grading tool at two NRLs and one IRL as a means of enabling the CTD to track laboratory performance and provide targeted technical assistance. IDDS supported the NTP in **Zimbabwe** to develop the National TB Testing Standard Operating Procedures manual to provide guidance to laboratory personnel nationally on how to provide quality TB testing services. In four countries, IDDS **facilitated multisectoral collaboration** to improve national TB diagnostic networks. In **Bangladesh,** IDDS organized a Laboratory Working Group meeting with the NTP to discuss strengthening the network and adjusting implementation timelines, and in **Zimbabwe,** IDDS supported the TB diagnostic network working group meeting for 15 TB experts, who discussed how to improve TB laboratory supervision, quality of the GX network, connectivity of the GxAlert platform, and testing at NTRLs. In **DRC,** IDDS began the formulation of a functional TB diagnostic network working group by drafting terms of reference for the group. In **India,** IDDS worked with a large swathe of stakeholders for the TB program this quarter. IDDS was part of national facilitation teams, along with the CTD and other stakeholders, to support subnational certification of progress toward TB Free Status, participated in the Step Up the End TB Summit 2022 on World TB Day to showcase contributions to the NTP along with a wide range of national and international stakeholders, and participated in a series of events related to AMR, including the first sectoral meeting and the national stakeholders' workshop, which led to development of the National Action Plan for AMR 2022-2026.

IDDS continued to engage extensively with the **private sector** in **Burma** and in **India** this quarter. In **Burma,** IDDS met with the MPHA to discuss how to harness the private hospital system to bolster the national TB diagnostic network. Discussions included equipping five private hospitals strategically with GX instruments based on findings from the spatial analysis, setting up a sputum SRS that will integrate across the public and private sectors to ensure better coverage of diagnostic services, and subsidizing costs for GX testing at private hospitals. These discussions allow expansion of the Double-X strategy

(use of X-ray for screening and GX for confirmation of diagnosis), part of its national TB plan. In **India,** IDDS continued its development of the innovative "One Stop TB/DR-TB Diagnostic Solution" model in the Hisar district. In conjunction with the CTD, iQVIA, and the USAID-supported iDEFEAT TB project, IDDS identified Thyrocare as the private laboratory that will implement the integrated TB diagnostic care cascade approach and developed plans, including hiring of staff, to officially launch the model. IDDS also assessed 60 potential private laboratories for NTP certification in line probe assay (LPA) and liquid culture DST, working with the National Accreditation Board for Testing and Calibration Laboratories and the Initiative for Promoting Affordable and Quality TB Tests, which is an alliance of private laboratories in the country that makes WHO-endorsed TB tests available at affordable prices. Following the assessment, 18 laboratories were shortlisted, and IDDS conducted joint visits with national and state representatives and a WHO consultant to identify the final set of private laboratories that will be certified by the NTP.

Improving capacity to detect TB, DR-TB, and MDR-TB (IR 1.3 TB)

During this quarter, IDDS improved capacity to detect TB, DR-TB, and MDR-TB by supporting NTPs to introduce new TB diagnostic tools, bolster diagnostic capacity of laboratories and laboratory staff, and increase access to quality chest X-rays (CXRs).

IDDS **introduced new diagnostic TB tools and approaches,** including Truenat, ultraportable X-ray machines, computer-aided detection (CAD) artificial intelligence (AI), and simple-one step stool processing to strengthen national TB case detection and initiate treatment in six countries this quarter. IDDS worked with the Stop TB Partnership to deploy 15 Truenat Duo instruments to **Cambodia,** 20 to **Zimbabwe,** and 38 instruments each to **Bangladesh, DRC,** the **Philippines, Uganda,** and **Vietnam.** In **Bangladesh,** IDDS localized Truenat training materials and tools during a workshop with 18 participants and completed a pre-installation assessment of 38 potential Truenat sites, of which 24 met the requirements. IDDS worked with BRAC and the Damien Foundation to identify an additional 14 sites for installation. Through IDDS's efforts, Truenat will be implemented in the country for the first time after the rollout and scale-up begins. IDDS also trained team members through training of trainers on Truenat EQA methodology to support rollout of EQA at Truenat sites and developed a plan to implement Xpert/*Mycobacterium tuberculosis* (MTB)/extensively drug-resistant testing to scale up DR-TB testing in the country. In **Cambodia,** IDDS received approval for the Truenat pilot study, formally handed over the Truenat instruments to CENAT, and organized a workshop for 36 participants from national, provincial, and operational district levels to raise awareness of Truenat applications and use and train super-users and decision-makers. IDDS also conducted the on-site installation and provided hands-on training to 77 participants across the 15 pilot study sites. The placement of Truenat instruments at peripheral-level health centers will enable the country to increase access to rapid molecular testing for TB and DR-TB. In **DRC,** IDDS supported the NTP to install and providing training on the use of the 38 deployed Truenat instruments in the 4 pilot provinces. In **Vietnam,** IDDS handed over the Truenat instruments, ultraportable X-ray, and other commodities in a widely publicized ceremony that raised awareness of the TB prevention and control activities occurring during the COVID-19 pandemic.

IDDS provided **training on modifying the TB diagnostic algorithm and operational planning for Truenat** implementation in **DRC** for 41 participants across 3 regions and in **Uganda** for 26 participants. IDDS provided a refresher training in **Zimbabwe** for 19 participants, which provided an opportunity to share challenges, lessons learned, and best practices. IDDS also **developed a super-user support package** this quarter to provide ongoing technical support, supervision, and mentorship to Truenat sites in supported countries until sites can independently manage operations.

The training was piloted in **Zimbabwe** for 14 participants through technical and hands-on sessions, with the aim that lessons learned will inform improvements to the super-user support package moving forward. Finally, to **support quality control for Truenat testing at sites,** IDDS worked with SmartSpot, an established MTB EQA provider in Africa to provide validated dry culture spot panels for Truenat sites. The panels provide an early assessment of the effectiveness of Truenat implementation and identify low-performing sites in which super-user technical support resources may be needed. Twenty sites in Zimbabwe received the EQA panels; Cambodia and Uganda have received the panels and will distribute them to sites in the coming quarter. IDDS and SmartSpot hosted a remote training on the EQA reporting process for 14 end-users and 8 group managers.

IDDS provided **training support for ultraportable X-ray/CAD** devices for increased access to digital X-ray to diagnose TB in rural settings. In **Uganda,** IDDS facilitated a theoretical training for 20 participants on use of the technology, which was then followed by a hands-on training by the manufacturer Delft Imaging Systems, and in **DRC,** IDDS trained 8 participants in a centralized training and 65 decision-makers and end-users as part of a second training. In **Burma,** IDDS initiated procurement of ultraportable X-ray machines and CAD-AI. IDDS is also working with USAID's Agency, Information, and Services project to support integration of Truenat instruments into the existing TB diagnostic network. In **Vietnam,** IDDS trained 65 national and regional participants on ultraportable X-ray use and set up chat groups on messaging applications such as WhatsApp and Zalo to provide continuous technical and maintenance support from Delft Imaging Systems and local partners. Training materials for Truenat and X-ray/CAD implementation were updated, adapted, and translated into local languages for each country where trainings were conducted—**Cambodia, Uganda,** and **Vietnam.**

To **increase TB case detection among children,** IDDS continued expansion of a novel approach—the use of stool specimens for TB diagnosis as part of a simple one-step stool processing method. In **Burma,** IDDS restarted the pilot on use of stool specimens for TB diagnosis. In **DRC,** IDDS collaborated with the NTP to finalize a protocol to implement the method, which was approved by the ethics committee. In **Malawi,** IDDS worked with the NTP to revise the implementation protocol and submit to the ethics committee. IDDS translated the generic simple one-step method protocol into Portuguese for use in **Mozambique.** IDDS also **increased access to quality CXRs** in **Cambodia** and **Vietnam.** In **Cambodia,** this meant finalizing the CXR Telegram platform terms of reference and assessment report, and in **Vietnam,** IDDS conducted an AI-enabled CXR training for 24 participants to increase TB case detection in both laboratory and clinical settings as part of the country's Double-X strategy.

IDDS began **developing or implementing seven operational research studies** across six countries. In **Cambodia,** IDDS is piloting a feasibility study for Truenat implementation. In **India,** IDDS is conducting a study on Truenat to assess root causes of high invalid and indeterminate results during testing and visited 10 Truenat sites as part of the countrywide assessment of Truenat assay results for TB and rifampicin resistance. IDDS is also reviewing potential novel diagnostic tools such as loop-mediated isothermal amplification(TB-LAMP) assay that could be implemented in the country and is assessing the use of TruePrep DNA as part of a study on next generation sequencing. In **Zimbabwe,** IDDS is conducting a study on GX MTB/RIF Ultra "trace call" results, a study on the use of CXRs for diagnosis, and a study on smear microscopy hub strategy. IDDS also financially supported a training of 17 health care workers from study sites on medical research ethics. Finally, in **DRC, Tanzania, Vietnam,** and **Zimbabwe,** IDDS is investigating the causes of the global stagnation in rates of bacteriological confirmation of TB despite the introduction of highly sensitive rapid molecular tests

IDDS continued to **improve the diagnostic capacity of laboratories and laboratory staff** this quarter through refurbishment of infrastructure, training, and supportive supervision. In **Bangladesh,** IDDS developed SOPs and trained 12 people on how to process and test extrapulmonary TB and childhood TB specimens, developed QMS training materials, and assessed and began work to address refurbishment needs at three regional TB reference laboratories. In **Burma,** IDDS prepared and adapted training materials for TB laboratory biosafety and biosecurity for each laboratory tier in the country and trained 42 national-level participants on the materials. IDDS also met with WHO on the proposed design of the e-learning platform that the Myanmar Anti-Tuberculosis Association will manage until the NTP is able to take over. In **DRC,** IDDS equipped the NTRL with needed consumables during a stockout, and in **Zimbabwe,** IDDS developed a quality improvement framework for one province outlining areas needing improvement to provide high-quality TB diagnostic services. IDDS assessed 25 TB public and private laboratories following development of the framework. IDDS also refurbished one NTRL to ensure optimum conditions for operation of temperature sensitive equipment.

Table 3: Project outputs related to strengthening TB diagnostic networks for FY 2022 Q2 and the countries that contributed to these outputs

TB IR 1.1: Gaps in diagnostic networks identified and essential components supported										
	TOTAL	Equipment Maintenance	Testing skills and Procedures	New Diagnostic Tools	QMS	Diagnostic Connectivity Solutions	Biosafety	TB DNA	Private Sector Engagement	Other Diagnostic Network Topics
People Trained	614	0	12	391	0	112	42	0	0	57
SOPS, Plans, and Guidelines Developed, Revised, or Disseminated	6	0	4	0	1	0	0	0	0	1
TWG Group Meetings Held	7	0	0	5	0	0	0	0	0	2
Supervisory Visits Conducted	42	0	0	10	25	0	0	0	1	6
Pilots Conducted	2	0	0	0	1	1	0	0	0	0
Assessment Reports Completed	4	1	0	0	0	0	0	0	0	3
People Mentored	0	0	0	0	0	0	0	0	0	0
Countries[1]										
Bangladesh		●	●			●				●
Burma							●			
Cambodia				●		●				
Core TB				●						●
India				●	●				●	●
Tanzania										
Vietnam				●						●
Zimbabwe			●	●	●					●

[1] Countries listed are those that contributed to specific outputs during Q2. Countries that are working toward an output, but have not achieved it, are not included.

IMPLEMENTATION STATUS

Work plans and deliverables submitted in FY 2022 Q2 are summarized in the tables that follow.

Work Plans Submitted and Approved in FY 2022 Q2

	Submitted/Resubmitted	Received USAID Approval in Q2
GHS	• Madagascar 2/15/2022, 2/25/2022, and 3/18/2022	• DRC 3/10/2022 • Madagascar 3/23/2022
ARP for C-19	• Philippines 2/17/2022	• Philippines 2/22/2022
TB	• Cambodia 1/21/2022 • Malawi 1/11/2022, 2/6/2022, 3/3/2022, and 3/30/2022 • Tanzania 2/17/2022, 3/15/2022, and 3/28/2022 • Core Expansion 3/15/2022	• Cambodia (approved with contingencies) 1/5/2022 • DRC 1/6/2022 • India 1/13/2022 • Malawi 3/23/2022 • Tanzania 3/25/2022
PMI	• Cambodia 1/7/2022, 2/2/2022, and 3/15/2022	
Cross-Cutting	• Annual 1/14/2022 and 3/22/2022	• MENA 1/11/2022

Deliverables Submitted in FY 2022 Q2

	Key Deliverables Submitted to USAID during Q2
GHS	12
C-19F/ARP	0
EVD	3
IDSR	2
TB	7
Total	**24**

GHS FY 2022 Q2 Achievements

CAMEROON

Quarterly Highlights

Success Story:

Expanding AMR Surveillance in Cameroon (See Annex B for full story)

Bacteriology Diagnostics:

- IDDS supported the AMR National Coordination Center in the NPHL in operationalizing SOPs for AMR detection to ensure the quality and harmonization of pathogen identification and AST across human and animal AMR sentinel surveillance sites. Fifty-six laboratory staff (35 female) from five AMR surveillance sites were trained and sensitized on the use of SOPs for culture media preparation, pathogen identification, and AST in compliance with international norms; the implementation of internal quality control; and participation in external quality controls. IDDS provided printed copies of the national harmonized SOPs on pathogen isolation and AST to the surveillance sites, along with up-to-date copies of the European Committee on Antimicrobial Susceptibility Testing and the Antibiogram Committee of the French Society of Microbiology reference documents.
- IDDS supported the NPHL to conduct a joint supervision of seven sentinel bacteriology laboratories across three regions engaged in the pilot AMR surveillance systems for priority pathogens in human and animal health to ensure the harmonization of procedures for AMR detection. The NPHL used a supervision guide developed with IDDS support, which covers the following topics: assessing the availability and mastery of SOPs, reference manuals, reagents, and consumables; assessing the knowledge of priority pathogens for surveillance; and applying internal and external quality management practices.
- IDDS supported the Cameroon laboratories network for maintenance and certification of 18 biosafety cabinets in 6 human and 2 animal laboratories located in 4 regions. A total of 15 class II, 2 laminar air flow, and 1 class I biosafety cabinets were certified.

COVID-19 Diagnostics:

- IDDS trained 19 medical staff from air and land entry points on cross-border surveillance for COVID-19 at national entry points. The training covered topics related to cross-border surveillance, including safe specimen collection and transport, guidelines and procedures for prevention of COVID-19, and response to public health emergencies, including the COVID-19 pandemic, at national entry points.
- IDDS is collaborating with the *Centre Pasteur du Cameroun* (Pasteur Center of Cameroon) to recruit and deploy 17 laboratory technicians at testing centers to conduct COVID-19 testing to assist with the nationwide response effort.

Surveillance:

- IDDS provided training and mentorship support on the WHONET data entry tool for AMR data collection to 57 AMR surveillance laboratory staff (41 females) across 7 AMR pilot sites. These

trainings ensure the sustainability and reliability of the system by promoting the collection of high-quality data that the country needs to capture the impact of AMR nationwide.
- IDDS supported the AMR National Coordination Center in compiling and analyzing 2021 national AMR surveillance data, with the goal of drafting the country's first Annual AMR Report. IDDS supported a three-day workshop that convened AMR surveillance TWG members from the NPHL and National Veterinary Laboratory to draft this report. By integrating data from both the animal and human health sectors, the TWG was able to draft a report that was grounded in a One Health approach.
- IDDS supported the NPHL in preparing the 2021 data for submission to GLASS.

Problems Encountered and Solutions

Problem	Resolution	Status
NPHL staff coordinating AMR laboratory activities were unavailable due to competing priorities related to COVID-19. This delayed the implementation of several planned activities this quarter.	IDDS continues to communicate with the NPHL and other partners to adjust scheduled activities based on staff availability.	In progress

Lessons Learned

- Close collaboration with government partners, GHS partners, and the USAID mission is important for the successful implementation of activities.
- Co-funding activities with other partner projects in the country helps save costs and harmonize efforts for greater impact.

FY 2022 Q2 Output Results

76

People trained

Electronic Reporting Systems (57)
COVID-19 Surveillance (19)

7

Supportive supervision visits

Testing and Commodity management

2

TWG meetings held

Data analysis and use

2

Pilots conducted

Electronic Reporting Systems

56

Persons mentored

Testing and QMS

842

Specimens transported

COVID-19 genome sequencing

DEMOCRATIC REPUBLIC OF THE CONGO

Quarterly Highlights

- The DRC FY 2022 GHS work plan was approved on March 10, 2022.

Success Story:

U.S. Assistant Secretary of State Monica P. Medina visits IDDS-supported Rodolphe Mérieux Laboratory in the Democratic Republic of the Congo (See Annex B for full story)

Diagnostic Highlights:

- The importance of biosafety, biosecurity, and containment practices is now more recognized, as the handling of biological samples and chemical products remains a source of infection, and even death, among laboratory personnel. The National Laboratory Policy and Strategic Plan 2021-2025 highlighted this topic as a priority topic of concern. IDDS addressed this gap by deepening the knowledge of targeted participants in biosafety and biosecurity matters for safety and efficiency purposes by implementing a training for 30 participants (3 female) on biosafety and biosecurity in the laboratory, specimen collection, and storage and transport of biomedical samples in two DRC eastern provinces (North-Kivu and South-Kivu).
- IDDS provided 500 printed copies of the National Laboratory Policy and Strategic Plan 2021-2025 and 500 printed copies of the MoH Laboratory Policy to be disseminated in the eastern provinces, which will significantly contribute to the operationalization of these documents and contribute to the improvement of the regulatory environment (policy and governance) for the diagnostics network in this region.

- IDDS prepared a training package to accompany three manuals previously developed in FY 2021: Manual on Biosafety and Biosecurity in the Biomedical Laboratory; Manual on Storage and Transport of Samples in Medical Biology: and Manual for the Collection of Biomedical Samples. The training package included training modules, facilitator training guides, and PowerPoint presentations for each of the three topics.

EVD Surveillance:

- The MoH declared the end of the EVD outbreak on December 16, 2021.[2] Implementing partners, including IDDS, concluded EVD outbreak response activities on January 21, 2022.
- IDDS transported commodities such as RDT kits and pipette tips, which were used for cadaveric surveillance.
- IDDS initially planned to travel to Beni, Butembo, and Mangina for a final round of supportive supervision in collaboration with the *Institut National de Recherche Biomédicale* (National Institute for Biomedical Research) laboratory in Goma. However, IDDS was not able to conduct the visits due to the end of outbreak response activities by implementing partners in the field on January 21, 2022, and the ongoing security instability outside Goma.

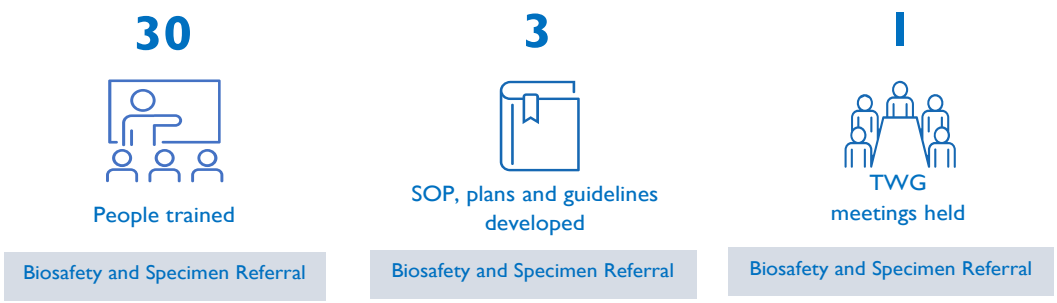
Problems Encountered and Solutions

Problem	Resolution	Status
The security situation and state of emergency in North Kivu and Ituri continue to hinder to the implementation of IDDS activities in those areas. Additionally, flights to Maniema have been canceled and IDDS had to put on hold activities in the province due to lack of access.	IDDS continues to monitor the situation and is discussing alternatives with counterparts	In progress

Lessons Learned

- Given the gap in equipment maintenance training in the DRC Eastern region, IDDS was requested to train more laboratory workers. Adding more practical, hands-on exercises improved skill acquisition by giving a chance to participants to practice new principles learned.

FY 2022 Q2 Output Results



[2] Source: https://www.who.int/emergencies/disease-outbreak-news/item/2021-DON351.

ETHIOPIA

Quarterly Highlights

- IDDS resumed operations in Ethiopia this quarter. Five in-country staff members were hired and onboarded, and the team met frequently with the USAID mission, EPHI, and other implementing partners to revise the work plan that had been previously approved for FY 2021 but was not implemented.

Diagnostic Highlights:

- In partnership with EPHI, IDDS conducted a rapid baseline assessment in one (St. Paul MC Regional Hospital) of the six sites (five human health and one animal health). The objective of the baseline assessment is to get a better idea of site-specific infrastructure, equipment, and supply needs that should be incorporated into the revised work plan.

GUINEA

Quarterly Highlights

- The period of performance for the EVD workplan ended on February 28, 2022; IDDS developed a proposed activity budget to integrate remaining EVD activities and EVD pipeline into the GHS work plan.

Diagnostic Highlights:

- IDDS completed the pilot of the SRS in three regions in Guinea in support of establishing a more efficient and cost-effective referral system. The findings from this pilot will assist stakeholders with future budget planning and advocacy for the long-term implementation and sustainability of the SRS.
- IDDS continued providing technical support and Internet vouchers to the three IDDS-supported laboratories and the INSP to enable reporting of AMR data to the national-level database, and continued to monitor data quality.
- IDDS initiated the procurement of reagents and supplies for the INSP to support the second round of EQA for the AMR surveillance network.

COVID-19 Diagnostics:

- In collaboration with the *Direction Nationale des Laboratoires* (National Directorate of Laboratories), IDDS has continued to work with four laboratories on GX machine maintenance, recalibration, and repair. IDDS issued a purchase order for Cepheid to initiate recalibration at these four sites.
- IDDS procured COVID-19 extraction reagents and PCR testing commodities for the six central reference laboratories in Conakry.

EVD Surveillance:

- A pilot program for the specimen transport, referral, and tracking system in Farannah, Kindia, and Mamou has been ongoing since December 2021. To date, no specimens have been rejected at reference laboratories, indicating that the system is functioning well, and specimens are arriving in good quality.
- IDDS received an order of triple packaging materials along with RT-PCR test kits for Lassa fever and Marburg disease and distributed all items to target facilities.
- IDDS is developing a training, in collaboration with the African Society for Laboratory Medicine, on analyzing laboratory mapping data that were previously collected.

Problems Encountered and Solutions

Problem	Resolution	Status
Stockouts of laboratory commodities and equipment failure resulted in testing interruptions in two facilities this quarter.	Hospital management and the MoH need to support the laboratories with the provision of laboratory commodities and equipment maintenance. This is a long-term solution.	IDDS is engaged in ongoing discussion and planning with the hospital management and the *Direction National des Laboratoires.*

Lessons Learned

- There is a need to strengthen the laboratory logistics system and stock management and establish a central mechanism for monitoring all procurement to avoid leakages in the system.
- Samples are not reaching the laboratories for testing and confirmation of priority pathogens. Most of the ongoing financial and technical support has been provided by implementing partners, and due to the high cost of transporting samples from the peripheral level to the central level, samples have not been shipped for testing.

FY 2022 Q2 Output Results

1

Pilots conducted

Specimen Referral & Testing

INDONESIA

Quarterly Highlights

Diagnostic Highlights:

- IDDS, in collaboration with the Directorate of Surveillance and Health Quarantine, 23 laboratory staff (18 female) on the testing and detection of zoonotic diseases using the PREDICT laboratory protocol. Trainings were held in four Centers for Environmental Health and Disease Control Engineering: BTKLPP Batam on February 14 to18 (five participants), BTKLPP Ambon on March 14 to18 (six participants), BTKLPP Makassar on March 21 to 25 (seven participants), and BTKLPP Manado on March 28 to April 1 (five participants).

Surveillance Highlights:

- IDDS finalized the plan for piloting the *Guidelines for Implementation of the Four Way Linking (4WL) for Management of Health Problems at the Human, Animal and Environmental Interfaces* in collaboration with relevant ministries and local institutions. The pilot will help improve coordination across the humans, animals, and the environment sectors to respond to health threats. The 4WL pilot implementation will be conducted in Demak District (Central Java) and Bandung Barat District (West Java) and will focus on leptospirosis.
- IDDS, in collaboration with the Directorate General of Disease Prevention and Control, MoH, and the G20 committee, held Webinar 1: Socialization of the One Health Self-Assessment Questionnaire to G20 member countries. The meeting was conducted on March 25 and 26 at the Gran Melia Hotel, Jakarta, and with 25 in-person participants and 25 online participants. The result of the meeting was that the One Health Self-Assessment Questionnaire was disseminated and is receiving feedback from G20 member countries.
- IDDS developed the 2022 work plan of the One Health Zoonoses and Emerging Infectious Diseases Prevention, Detection, and Response Working Group. To carry out the tasks and functions of the coordinating working group in an effective and sustainable manner, IDDS disseminated the decree to all members of the working group and evaluated cross-sectoral coordination activities in the prevention, detection, and response of zoonoses and emerging infectious diseases that were implemented from 2020 to 2021.
- IDDS successfully migrated the *Sistem Informasi Zoonoses Dan Emerging Infectious Diseases* (SIZE, or System for Zoonotic and Emerging Infectious Disease) 2.0 and 3.0 (host server) from former Information and Communication Network Center (BJIK), of the National Research and Innovation Agency (BRIN) to the Data National Center (PDN) in the Ministry of Communication and Information (MoCI). Because there was a change in the structure of the Government of Indonesia, related to the agency, hosting the SIZE server (i.e., BJIK of BRIN), it was important to migrate all the SIZE management and operations to the new host server at the MoCI. This shift will ensure that SIZE management and operations will continue to be properly used.
- IDDS facilitated the handover of SIZE 3.0 from to the head of the *Sistem Informasi dan Pengelolaan Data* (Information Systems and Data Management) Bureau of the Coordinating Ministry for Human Development and Culture, which will coordinate and operate the implementation and use of SIZE moving forward.

Problems Encountered and Solutions

Problem	Resolution	Status
COVID-19 cases increased in FY 2022 Q2.	IDDS adjusted timelines so the onsite laboratory training could be conducted in person.	Addressed The planned training has been carried out.
There were delays in the formalization/legal process of the three documents developed (4WL Guidelines, Surveillance Integrated Guidelines, and SIZE Roadmap) because the Government of Indonesia needed to complete a final review. In addition, the government proposed that IDDS conduct a pilot implementation before finalizing the documents that would ensure that the documents are relevant and appropriate for the context.	IDDS conducted formal and informal discussions with the relevant ministries and institutions on next steps. IDDS determined the target areas and priority diseases for the pilot implementation.	Addressed Target areas and priority diseases for the pilot have been determined, and preparation for the formal/legal aspect have been discussed with the relevant ministries and institutions.

Lessons Learned

- Maintaining coordination and collaboration among GHS partners and non-GHS partners is important to support the program, connect the dots, fill the gaps, and prevent duplication of activities. Conducting regular meetings and discussions, and sharing past, ongoing, and future work among one another is very helpful.
- Being adaptive to changing situations in government structure is important to ensure that all the desired outputs of the program can be achieved.

FY 2022 Q2 Output Results

23

People trained

Testing and Biosafety

8

TWG meetings held

Testing and Biosafety (2)
Interoperability and Electronic Reporting (2)
Data Analysis & Use and Data Quality (2)
Data Analysis & Use and Electronic Reporting (1)
Data Quality and One Health (1)

KENYA

Quarterly Highlights

Success Story:

IDDS Microbiology Skills Training for County Laboratory Technologists at Nairobi's Aga Khan University Hospital (See Annex B for full story)

Diagnostic Highlights:

- IDDS in collaboration with the USAID-funded MTaPS project supported NASIC and county antimicrobial stewardship interagency committees with the implementation of sensitization workshops to promote antimicrobial stewardship across five IDDS-supported counties (Bungoma, Kilifi, Murang'a, Nyeri, and Trans-Nzoia). The workshops were facilitated the by MTaPS project staff, the county antimicrobial stewardship coordinator, county medical laboratory coordinator, and clinical consultants from the county, and attended by NASIC representatives, county directors of health, laboratory technologists, clinicians, medical officers, and pharmacists. In total, 111 health personnel (50 female) were trained. The participants are expected to cascade lessons learned and spearhead strengthening of diagnostic and antimicrobial stewardship programs at their respective health facilities, which will improve bacteriology testing capacity, clinical management of patients, and data to guide AMR prevention and control decisions.
- In FY 2021, IDDS, NASIC, and the NMRL finalized the development of the bacteriology isolates referral guide, which has since been adopted by all 12 AMR surveillance sites participating in the national AMR surveillance system. Since the finalization of the guide, IDDS has provided continuous technical assistance to the five IDDS-supported surveillance sites to identify, package, and transport AMR isolates to the NMRL for retesting. In FY 2022 Q2, IDDS supported a workshop during which

NASIC and the NMRL presented the outcome of the retesting of the isolates feedback to the 12 surveillance sites in the national system. The workshop presented an opportunity for participants to discuss gaps and develop an action plan. The NMRL agreed to provide prompt site-specific retesting results and provide a comprehensive report with peer-to-peer analysis on a quarterly basis, and the surveillance sites committed to adhere to international and national guidelines in the selection of antibiotics.

Surveillance Highlights:

- Building on a training held in Q1, IDDS supported piloting of WHONET software for AMR data management and analysis in two IDDS-supported sites: Malindi Sub-County Hospital Laboratory and Nyeri Teaching and Referral Hospital Laboratory. During site visits, IDDS installed WHONET (version 2021) on the laboratories' computers and configured the software to reflect hospital needs. IDDS also conducted refresher training for two participants at each site and piloted data entry using WHONET. All five IDDS-supported sites are now using WHONET software for AMR data management and analysis, which promotes the use of locally produced bacteriology data to inform treatment decisions and monitor resistance trends.
- IDDS collaborated with NASIC and the NPHL to convene a data review and feedback workshop for 12 AMR surveillance sites participating in the national AMR surveillance system. During the workshop, NASIC provided feedback on data quality gaps that had been identified during the August 2021 meeting of the AMR Surveillance TWG; these included poor data completeness and timeliness, drug-organism combination mismatch, and organism-specimen mismatch. In addition, NASIC presented a summary of the first national AMR surveillance report and discussed data transmission challenges and potential solutions.

Problems Encountered and Solutions

Problem	Resolution	Status
Information systems and data transmission challenges are interfering with reporting of AMR surveillance data from AMR surveillance sites to the Central Data Warehouse at the NPHL.	IDDS engaged an informatics consultant who will assist NASIC in resolving transmission challenges. In Q3, IDDS will work with NASIC and the NPHL to update information on the AMR surveillance information system gaps and to train surveillance site information technology staff on AMR surveillance information systems. As an interim measure, IDDS helped Bungoma County Referral Hospital Laboratory (which was experiencing the most significant linkage challenges) to enter AMR data for 2019–2021 into WHONET. This allows the site to export a data file that the NPHL can manually upload into the Central Data Warehouse.	In progress
The NMRL experienced delays in retesting AMR isolates and providing feedback to the referring AMR surveillance sites.	The IDDS diagnostic specialist provided technical assistance to NMRL to enter, clean, and analyze bacterial isolates retesting data. Then IDDS organized a one-day	In progress

Problem	Resolution	Status
	workshop with the NMRL, NASIC, and AMR surveillance sites, during which the NMRL provided isolates retesting feedback to the 12 surveillance sites. All parties agreed that the NMRL will dispatch individual retesting reports to surveillance sites as soon as results are available, and then share a comprehensive feedback report with peer-to-peer analysis on a quarterly basis. In Q3, IDDS will continue to support sites to select and refer isolates, and support the NMRL to analyze data and provide feedback to the sites.	

Lessons Learned

- Providing clinicians with continuous medical education opportunities about the use of laboratory testing for both clinical management and surveillance of AMR is essential, especially given the high turnover of clinicians in public facilities. IDDS is integrating these continuous medical education opportunities into the existing training mechanisms like grand rounds at supported sites as a sustainable way to provide these opportunities.
- It is critical for surveillance sites to adopt laboratory information systems that are easy to use and compatible with what is being used at the national level or used widely in the country. This enables the sites to obtain technical support for system operation and maintenance when issues arise.

FY 2022 Q2 Output Results

188

People trained

Specimen Referral Systems (113)
Testing (75)

1

TWG meetings held

Specimen Referral Systems

9

Persons mentored

Data Analysis and Use (4)
Testing (5)

LIBERIA

Quarterly Highlights

Success Story:

Promoting Bacteriology in Liberia (See Annex B for full story)

Diagnostic Highlights:

- With financial support from IDDS, the bacteriology mentor provided mentorship to laboratory technicians at the three supported bacteriology laboratories on the use of the WHONET software in bacteriology processing. This software will be used for the management and analysis of microbiology laboratory data, with a special focus on the analysis of AST results. With three IDDS-supported laboratories now optimized to be able to process bacteriology specimens, the WHONET software offers them an opportunity to be more efficient.
- IDDS provided facility-based waste management and biosafety and biosecurity training to 13 laboratory staff at Phebe Hospital Laboratory. Improper waste disposal from laboratories can harm the laboratory itself, the environment, and the health of the public, and thus it is essential that laboratory workers understand how to handle the different kinds of waste generated in the laboratories.

COVID-19 Diagnostics:

- In January, IDDS donated 13,710 pieces of personal protective equipment, such as gloves, masks (N-95 and surgical), and aprons to G.W. Harley Hospital Laboratory and the Nimba County Health Team. At the handover ceremony, Nimba County Health Officer Dr. Netty Joe expressed appreciation for the donations.

Problems Encountered and Solutions

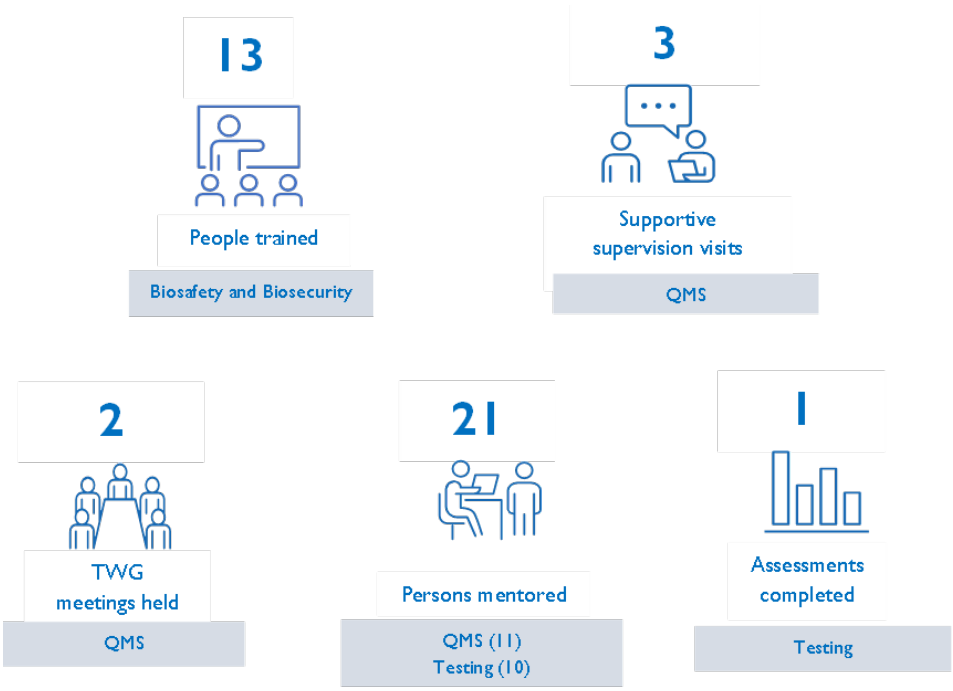
Problem	Resolution	Status
One main issue is staff attrition at the SLMTA enrolled and bacteriology laboratories. Kolahun Laboratory in Lofa has no technician, and thus IDDS could not provide on-site QMS mentorship while the bacteriology focal person at Tellewoyan left the facility.	IDDS discussed the staff situation with the MoH to address the challenge and motivate staff to stay.	In progress
Non-payment of salaries at the laboratories has resulted in lack of commitment to work by laboratory technicians.	IDDS brought the situation to the attention of both the MoH/NDD and the USAID mission.	In progress

Problem	Resolution	Status
There are a low number of bacteriology requests by clinicians.	IDDS is conducting awareness meetings with the various clinicians. IDDS is printing job aids with messages on availability of bacteriology testing and turnaround time, which will be posted in consulting rooms.	In progress

Lessons Learned

- Decentralization of laboratory services requires a very well-coordinated approach with both national and county-level understanding of the contribution of these services to the health care delivery system.
- When new testing services are introduced in a facility, a series of sensitization meetings with both clinicians and communities are required so that demand can be created and specimen flow improved.
- Workforce development in the form of specific laboratory training, for instance on AMR testing coupled with mentoring of laboratory technical staff for microbiology, should be consistent to improve the expertise of the technicians and build sustainable services.
- Establishing an effective system for AMR characterization and surveillance requires a properly functioning microbiology laboratory with inventory management, quality media production, biochemical testing, serotyping, DST capacity, and an SRS.

FY 2022 Q2 Output Results



MADAGASCAR

The Madagascar FY 2022 GHS work plan was submitted on February 15, 2022, and resubmitted following revisions on February 25, 2022, and on March 18, 2022. The work plan was approved on March 23, 2022. No activities against this work plan were implemented in Q2. The following updates reflect work carried out through ARP funding.

Quarterly Highlights

COVID-19 Diagnostics:

- Two supervisory teams comprising national government representatives from the Department of Health Monitoring, Epidemiological Surveillance, and Response of the MoH and a technical advisor from IDDS traveled to the field to carry out supportive supervision visits at health centers in five districts (Tsiroanomandidy, Arivonimamo, Ambatolampy, Faratsiho, and Fandriana). The team assessed current practices and provided on-site training for the collection, cleaning, and organization of COVID-19 surveillance data, as well as electronic data management and reporting at 33 basic health centers across the 5 districts.
- During this quarter, the MoH validated and disseminated the fifth biweekly COVID-19 surveillance bulletin, which was developed with IDDS support in December 2021. In addition, IDDS supported one two-day bulletin development workshop, during which the Department of Health Monitoring, Epidemiological Surveillance, and Response, IDDS, and other implementing partners reviewed surveillance data from the IDSR database and compiled them into a sixth bulletin.
- IDDS ordered and delivered an automated nucleic acid extractor, PCR extraction reagents, COVID-19 PCR tests and reagents, and specimen collection swabs for the CHU PZaGa laboratory in Mahajanga region to support COVID-19 testing.

Problems Encountered and Solutions

Problem	Resolution	Status
None to report	N/A	N/A

Lessons Learned

- None.

FY 2022 Q2 Output Results

5

Supportive supervision visits

Data Quality (5)

MALI

Quarterly Highlights

COVID-19 Diagnostics:

- IDDS submitted an abstract on strengthening SARS-CoV-2 diagnostic capacity to the West Africa Consortium for Clinical Research on Epidemic Pathogens. IDDS staff attended the conference in Yamoussoukro, Côte d'Ivoire, from March 17 to 19 to present the accepted abstract in person. Participation in this conference allowed IDDS to share its experiences with other countries and organizations regarding the strengthening of the laboratory system in Mali.

Surveillance Highlights:

- IDDS has produced and disseminated (electronically) the 2021 annual epidemiological surveillance bulletin at the different levels of the health pyramid. The bulletin was submitted to USAID as a key deliverable. This document will serve as a decision-making tool for surveillance actors at different levels of the health system to improve data reporting through DHIS2.
- IDDS submitted an abstract on the implementation of community-based epidemiological surveillance to the West Africa Consortium for Clinical Research on Epidemic Pathogens. IDDS staff attended the conference in Yamoussoukro, Côte d'Ivoire, from March 17 to 19 to present the accepted abstract in person. Participation in this conference allowed IDDS to share its experiences with other countries and organizations regarding the strengthening of epidemiological surveillance in Mali.

Problems Encountered and Solutions

Problem	Resolution	Status
Kadiolo and Kati health districts experienced a decreasing completeness rate for daily SMS. Due to budget constraints, there was a lack of direct supervision of community health workers, so there was no way to ensure that messages were being sent. It is also possible that the network provider or company might be affecting whether SMS messages were sent or received.	On March 3, IDDS met with the director *of Sous-direction Prevention et Lutte contre la Maladie* (Sub-Directorate Prevention and Disease Control) of the General Directorate of Health and Public Hygiene (DGSHP) or). In response to the low completeness rate of daily SMS messages sent by community health workers, the director had a phone call with the health districts and proposed that the general director of DGSHP send a letter to the two regional directors about this issue. During the April supervision visit, IDDS will likely change the company, which is currently facing technical issues, or the network provider in Q3 to improve the SMS completeness rate.	In progress

Lessons Learned

- None

FY 2022 Q2 Output Results

2

TWG
meetings held

One Health Platform (1) &
COVID-19 Data Harmonization (1)

10

Supportive
supervision visits

COVID-19 Case Detection and Reporting

PHILIPPINES

IDDS submitted a supplemental ARP workplan for the Philippines on February 17, 2022, and it was approved by USAID on February 22, 2022.

Quarterly Highlights

In February 2022, IDDS received ARP Rapid Response funding to further extend IDDS's support to the Philippines' response to COVID-19 from February to May 2022. This funding focuses on rapid procurement of COVID-19 diagnostic commodities.

Procurement:

- IDDS procured and distributed 2,960 rapid antigen tests to four health facilities in Palawan province and 26,890 personal protective equipment items (e.g., N95 masks, disposable gowns, pairs of gloves, etc.) to 12 IDDS-supported facilities across the country. IDDS delivered specimen transport boxes to Bulacan, Palawan, and Rizal provinces, and PCR extraction kits to the Bulacan Medical Center
- IDDS was informed by the mission that the Philippines' Department of Health requested additional support for procurement to respond to a surge of COVID-19 cases in the country. In collaboration with local government officials, IDDS assessed and quantified the need for COVID-19 RDT and PCR testing kits, which will be procured during FY 2022 Q3.

COVID-19 Diagnostics:

- IDDS facilitated diagnostic specimen transport activities in six IDDS-supported provinces (Bulacan, Cavite, Isabela, Laguna, Palawan, and Rizal); IDDS transported 3,506 RT-PCR specimens from collection sites to testing sites located across these six provinces. In addition, IDDS mobile swabbers collected 1,707 specimens for RT-PCR and rapid antigen testing.
- Due to a decrease in COVID-19 cases in IDDS-supported sites, the weekly number of specimens that need transport are declining. IDDS is working with local government officials to review the list of facilities supported by IDDS and explore the possibility of including hospitals in these provinces for IDDS support.

Problems Encountered and Solutions

Problem	Resolution	Status
IDDS experienced a difficulty in hiring qualified individuals for field implementation coordinators and mobile swabbers, which delayed the start of specimen collection and transport activities in Bulacan, Cavite, Isabela, Laguna, and Rizal provinces.	IDDS temporarily hired medical technologists from TB Innovations and Health Systems Strengthening Project to facilitate IDDS specimen transport in Bulacan, Cavite, Laguna and Rizal provinces. For Isabela province, IDDS made an arrangement with the Isabela Provincial Health Office to allow their staff to temporarily facilitate specimen transport, using the IDDS vehicle while awaiting deployment of the field implementation coordinator for the province.	Resolved. IDDS completed the recruitment and onboarding for all positions at the end of February 2022.

Lessons Learned

- None

FY 2022 Q2 Results

3719

Specimens transported

COVID-19 testing (3506)
COVID-19 genome sequencing (213)

1707

COVID-19 Specimens

SENEGAL

Quarterly Highlights

Success Story:

Expanding AMR Detection and Surveillance in Senegal (See Annex B for full story)

Diagnostic Highlights:

- From March 14 to 18, 2022, IDDS supported Senegal's Directorate of Laboratories to assess the capacity and needs of the laboratories of two additional laboratories, Polyclinique Medina in the Dakar region and Mbour in the Thies region, to begin bacteriology testing, including AMR testing. The assessment was conducted using the tool developed by IDDS for the assessment of the seven IDDS-supported laboratories in 2019, which was validated by Senegal's MoH and is in compliance with international standards. Based on the assessment findings, in FY 2022 Q3, IDDS will develop a procurement plan to support the two new laboratories to start performing bacteriology tests, including AST.
- IDDS supported seven laboratories to implement and expand AMR detection and surveillance activities. These seven laboratories provide services to half of all the regions in Senegal.

Surveillance Highlights:

- IDDS conducted a training to improve the quality of DHIS2 data from March 15 to 19, 2022 in Kedougou. A total of 27 staff (12 females) comprising surveillance officers and chief medical officers of the three health districts of the Kedougou medical region (Salemata, Saraya, and Kedougou) were trained. This training focused on DHIS2 quality modules, data verification and data approval procedures, and aimed to strengthen the capacity of surveillance officers and medical officers to analyze surveillance data prior transmission to the MoH.
- IDDS supported Guediawaye, Kaffrine, Linguere, and Tivaouane laboratories in reporting complete monthly AMR surveillance data to the MoH. IDDS worked closely with the head of the laboratories, the quality managers, and assistants to upload their full report into the DHIS2 software. IDDS provided technical assistance as necessary in using the software.

Problems Encountered and Solutions

Problem	Resolution	Status
The training of the four supported medical regions was delayed due to unavailability of the staff from the Division of Health Information Systems from the MoH, which was engaged with reporting COVID-19 vaccination data into DHIS2.	The team met with the head of the Division of Health Information Systems to determine whether two staff can jointly conduct the training sessions with IDDS staff in the target regions. Two staff from the Division of Health Information Systems joined the IDDS team for the Kedougou training session that was completed on March 19.	Addressed

Lessons Learned

- The need for DHIS2 data quality training of the health district staff is a priority because this training has not been implemented before by the MoH. Four more regions have expressed their interest in implementing this activity.

FY 2022 Q2 Output Results

27

People trained

Data analysis and Use & Data Quality

TANZANIA

Quarterly Highlights

Diagnostic Highlights:

- From January 31 to February 2, 2022, IDDS provided logistics and financial support to technical staff from the Medical Store Department and the Pharmaceutical Services Unit to conduct a three-day workshop to clean data in the Tanzania e-LMIS to ensure that microbiology commodities are coded into the system, grouped by utility, and available for order by users at the facility level. The workshop was held in Morogoro and attended by the heads of Microbiology sections from the four IDDS-supported sites and Mbeya Zonal Hospital and Muhumbili National Hospital (two tertiary-level hospitals). The purpose of this exercise was to ensure that the e-LMIS system has a comprehensive list of microbiology commodities (with assigned catalogue numbers) through which facilities can easily report stock levels and order microbiology commodities. Through this workshop, IDDS enhanced the national diagnostics supply chain logistic system to ensure that essential, quality-assured microbiology commodities are available to AMR surveillance sites, enabling uninterrupted detection of priority pathogens and AMR.

COVID-19 Diagnostics:

- IDDS delivered 44,960 auxiliary diagnostic testing commodities including personal protective equipment (laboratory coats and gloves), absolute ethanol, waste disposal bins, sharps boxes, pipettes, pipette tips, pipette carousels, and microcentrifuge tubes, to the NPHL. These commodities will be redistributed to seven decentralized PCR testing laboratories in the following regions: Mt. Meru-Arusha, Mbeya, Bugando-Mwanza, Dodoma, Maweni-Kigoma, Iringa, and Kagera.
- IDDS provided financial and logistics support for a workshop to validate the content of the Sample Management Procedure for SARS-CoV-2 RT-PCR and Genomic Sequencing, which IDDS helped draft in Q1. Following the workshop, the SOP was reviewed by the National COVID-19 Task Force, endorsed by the director of Curative Services, and approved by the chief medical officer of the MOHCDGEC on March 28, 2022. IDDS printed 100 hard copies and financially and logistically supported a dissemination workshop for the MoH's Laboratory Services Unit, the NPHL, regional laboratory coordinators, and PCR testing laboratories in Morogoro on March 30, 2022.
- From March 14 to 18, 2022, IDDS provided logistics and technical support to MOHCDGEC and NPHL staff to carry out supportive supervision visits in five regions: Mtwara, Lindi, Geita, Katavi, and Rukwa. These sites were selected for support because they are regional hubs and have points of entry, such as airports, seaports, and ground crossings, where COVID-19 screening and specimen collection and handling occur. The focus of these visits was to assess diagnostic specimen management practices and identify and address gaps and to provide technical guidance on COVID-19 specimen collection, packaging, storage, and transportation to ensure the quality of COVID-19 test results. The supervisory teams visited 21 facilities across the 5 regions.

Surveillance Highlights:

- Building on the joint site visit conducted in FY 2022 Q1, and under advice from the mission, IDDS collaborated with the USAID-funded MTaPS project to provide logistic, financial, and technical support for a joint meeting of two national-level TWGs: the National AMR Surveillance and

Research TWG and the Antimicrobial Stewardship TWG. The joint meeting was convened on March 1, 2022, in Dar es Salaam. The purpose of this joint meeting was to discuss ways of improving AMR data sharing and use across different interventions and explore areas in which different interventions can bring synergy in addressing the AMR problem in the country. The meeting resolved to use platforms such as academic institutions' scientific conferences and symposia to highlight AMR activities and advocate for AMR policy changes in the country.

Problems Encountered and Solutions

Problem	Resolution	Status
None to report		

Lessons Learned

- IDDS's use of TWGs and Multisectoral Coordination Committee meeting platforms to highlight best practices and lessons learned in the implementation of activities influences AMR policies and plans, contributes to national AMR data, and encourages use of data for patient management and planning and implementation of interventions, such as antimicrobial stewardship and infection prevention and control activities.

FY 2022 Q2 Output Results

1

SOP, plans and guidelines developed

COVID-19 Specimen Management

5

Supportive supervision visits

COVID-19 Specimen Management

3

TWG meetings held

Commodity Management (1), Data Quality (1) & Development of Case Definitions (1)

1

Pilots conducted

Testing

UGANDA

Quarterly Highlights

Success Stories:

IDDS Improves Biosafety and Biosecurity in Uganda (See Annex B for full story)

IDDS Brings One Health Surveillance for Zoonotic Diseases to Uganda's Kazo and Mbale Districts (See Annex B for full story)

IDDS Hosts the U.S. Ambassador and Shows U.S. Support for Global Health Security Capacity in Uganda's Mount Elgon Region (See Annex B for full story)

Diagnostic Highlights:

- From March 21 to 25, 2022, IDDS conducted biosafety and biosecurity training of laboratory directors and safety managers. The 5-day training workshop took place in Jinja district and was attended by 13 participants from four laboratories (in Gulu, Moroto, Mbale, Mbarara), the National Animal Disease Diagnostics and Epidemiology Center, the Uganda Wildlife Authority Murchison Veterinary Lab, and the National Livestock Resources Research Institute. IDDS organized the training in collaboration with the Bio Risk Management Department of the National Health Laboratory and Diagnostic Services of the MoH, the Ministry of Agriculture, Animal Industry and Fisheries/National Animal Disease Diagnostics and Epidemiology Center, the National Livestock Resources Research Institute, and the Uganda Wildlife Authority.

- IDDS supported four laboratories to develop or update 116 SOPs and 12 guidelines for laboratories to strengthen testing, biosafety, equipment maintenance and QMS procedures.

Center	Guildines	SOPs	Total	QMS	Biosafety and Biosecurity	Testing	Commodity Management	Equipment Maintenance
Mbale	3	22	25	19	2	3		1
Gulu	3	47	50	32	2	13	1	2
Mbarara	3	28	31	21	2	5	1	2
Moroto	3	19	22	17	2	1	1	1
Grant Total	**12**	**116**	**128**	**89**	**8**	**22**	**3**	**6**

Surveillance Highlights:

- IDDS installed and piloted an electronic data entry and analysis tool in the districts of Gulu, Mbale, Mbarara, and Moroto to improve reporting of priority zoonotic diseases in the animal health sector and trained 60 persons (12 female) in the use of the new data entry tool.
- IDDS trained district One Health teams in Mbale and Kazo districts from January 17 to 28. A total of 40 district staff (14 female) were trained on the implementation of coordinated surveillance using a One Health approach at a subnational level. Trainees were from the district human health office, the water and natural resources department, the district veterinary office, and UWA. This activity decentralized the implementation of One Health and improves coordination of surveillance of priority zoonotic diseases.

Problems Encountered and Solutions

Problem	Resolution	Status
None to report		

Lessons Learned

- None to report

FY 2022 Q2 Output Results

123

People trained

One Health (40)
Biosafety and Biosecurity (13)
QMS (10)
Electronic Reporting (60)

128

SOPs, plans and guidelines developed

QMS (89)
Testing (22)
Biosafety and Biosecurity (8)
Equipment maintenance (6)
Commodity Management (3)

2

Supportive supervision visits

QMS (1)
Data Analysis & Use (1)

1

TWG meetings held

QMS

1

Pilots conducted

Electronic Reporting

16

Persons mentored

QMS

VIETNAM

Quarterly Highlights

Success Stories:

IDDS Support Leads to Vietnam's First Standard Operating Procedures for Specimen Packaging and Transport (See Annex B for full story)

Transforming Vietnam's Animal Health Information System (See Annex B for full story)

Diagnostic Highlights:

- For the SRS pilot, IDDS, in collaboration with the National Institute of Hygiene and Epidemiology, developed a video on handling of specimen spillage and leakage incidents. This video and a video on specimen packaging that was developed in FY 2022 Q1 serve as illustrative training materials and useful references for laboratory staff and courier staff who will be involved in the specimen transport process. IDDS also signed a contract with a local courier company for specialized specimen transport services in Don Thap province. This is a key milestone in the development and pilot implementation of the new SRS. In addition, IDDS prepared 100 spill kits for the pilot because spill kits are not commercially available in Vietnam, and it would be too costly to import them. IDDS prepared the kits with locally available materials and products and distributed them to specimen referral facilities and courier companies that will be involved in the SRS pilot.

Surveillance Highlights:

- Through collaboration with RAHOs, IDDS has been providing technical assistance to five provinces (Binh Dinh, Can Tho, Dong Thap, Khanh Hoa, and Thai Nguyen) to increase the use of the VAHIS. In this quarter, the electronic reporting rate of animal outbreak data in the VAHIS by provincial sub-department of animal health staff in the five pilot provinces has increased, reaching 90 to 100 percent. In response to this success, the Department of Animal Health of Vietnam requested

IDDS to extend its support on VAHIS use to the district-level facilities in the five pilot provinces, which will further facilitate access, reporting, and management of data by local animal health staff and reduce the workload of provincial animal health staff. Decentralization of data is particularly important during the prolonged and widespread outbreak periods.

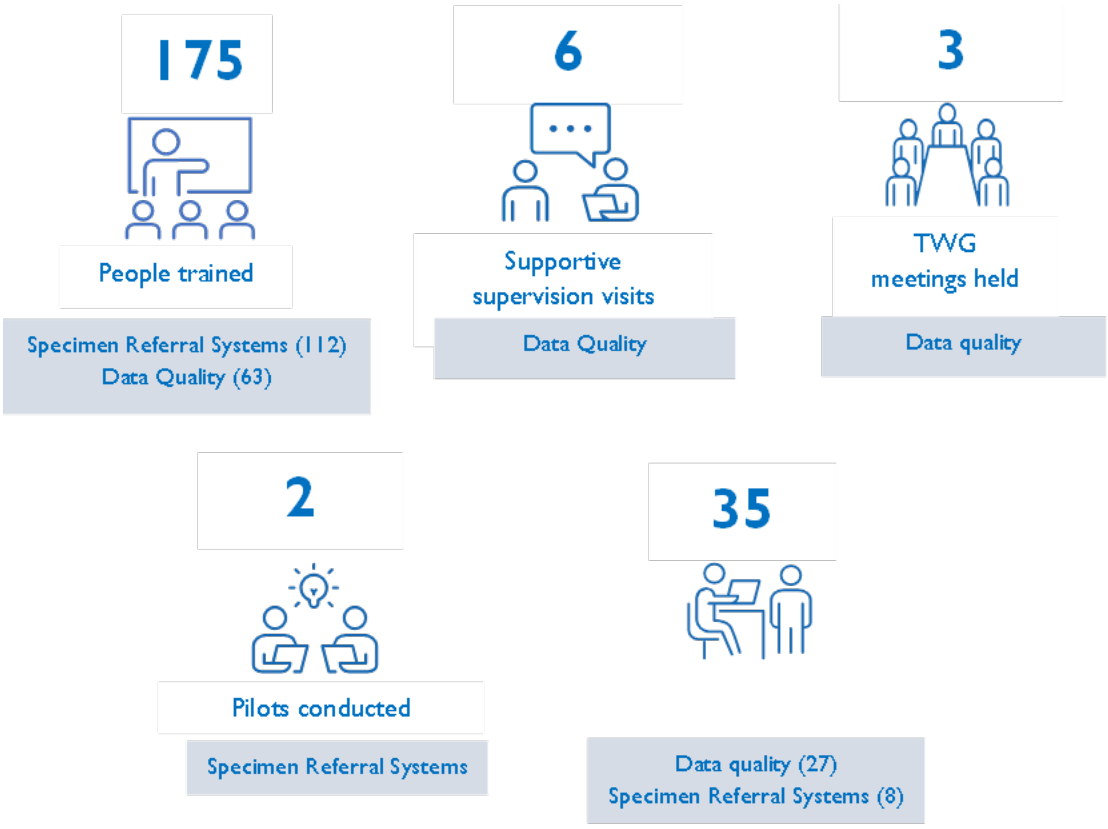
Problems Encountered and Solutions

Problem	Resolution	Status
IDDS experienced challenges in establishing a contract with national or state-owned courier companies due to the bureaucratic operational and managerial mechanisms of these companies. There was little to no flexibility in routes and schedules that they can offer, which was not acceptable to IDDS, given the specimen viability time. These companies were not willing to invest in specimen transport activities because they would not generate significant profit.	IDDS engaged private-sector companies with existing networks that use both motorcycles and cars to transport commodities. During the negotiation with companies, IDDS emphasized the significance of establishing a specimen transport system in Vietnam, which will strengthen the country's diagnostic capacity and ultimately promote public health.	Addressed
In Dong Thap and Thai Nguyen provinces, human resources have been redirected to the COVID-19 pandemic response and had little availability for the implementation of a One Health EBS system. With the limited budget, IDDS was not able to conduct frequent in-person supportive supervisionvisits..	IDDS provided support remotely and resumed on-site supportive supervision to the two provinces when the COVID-19 situation permitted. During the visits, local EBS implementors proposed that IDDS extend EBS support through the end of FY 2022 to ensure a smooth transition to the government. Per the current work plan, IDDS support for EBS is set to start phase out in Q3.	Ongoing—IDDS is revising its work plan.

Lessons Learned

- To establish a specialized specimen transport service, small private courier companies are likely to be more flexible in transport routes and schedules than large state-owned firms.

FY 2022 Q2 Output Results



TB FY 2022 Q2 Achievements

CORE TB

The Core TB expansion work plan was submitted on March 15, 2022.

Quarterly Highlights

Diagnostic Highlights:

- IDDS produced final reports for Laboratory Network Spatial Analysis for DRC, Kenya, and Zambia and presented findings to stakeholders. An additional analysis was conducted for DRC to support placement of GX instruments and digital X-ray equipment procured with Global Fund support.
- IDDS and the Stop TB Partnership completed the delivery of Truenat instruments to Cambodia (15 instruments) and to Bangladesh, DRC, the Philippines, Uganda, and Vietnam (38 instruments each). IDDS also trained 101 persons (38 female) in DRC, Uganda, and Zimbabwe on Truenat implementation. To monitor the quality of Truenat testing, IDDS contracted with SmartSpot, a long-established MTB EQA provider in Africa, to provide validated dry culture spot panels for Truenat sites. Cambodia, Uganda, and Zimbabwe received the first cycle of EQA during this quarter.
- IDDS collaborated with the Stop TB Partnership to introduce ultraportable X-ray/CAD devices to increase access in rural settings with limited access to digital X-ray to diagnose TB. IDDS helped revise training materials and trained 8 persons (all male) in DRC, 20 persons (7 female) in Uganda, and 65 persons (9 female) in Vietnam on the use of this technology.

Problems Encountered and Solutions

Problem	Resolution	Status
Reporting EQA results has been a challenge for some Truenat sites due to lack of Internet access.	IDDS is collaborating with SmartSpot to provide live virtual trainings for the IDDS country teams and super-users to support timely reporting of EQA results and identify solutions to Internet access.	In progress

Lessons Learned

- None

FY 2022 Q2 Output Results

278

People trained

New diagnostic tools (215)
TB DNA implementation (63)

1

SOP, plans and guidelines developed

BANGLADESH

Quarterly Highlights

Success Story:

Bringing Bangladesh's National TB Laboratory Strategic Plan to Life (See Annex B for full story)

Diagnostic Highlights:

- IDDS completed the costing of the TB Laboratory Strategic Plan (2021-2025), which IDDS developed in FY 2021. IDDS convened a workshop with key decision-makers from the NTP and other stakeholders to cost all activities under different objectives of the strategic plan. The costing data will enable the NTP to mobilize funding from the government and donors for the implementation of the strategic plan.
- IDDS is planning to introduce Truenat for detection of TB and DR-TB for the first time in Bangladesh. To prepare for the introduction and implementation pilot, IDDS finalized Truenat training materials through a workshop with the Ministry of Health, Family, and Welfare, the NTP, and the NTRL, as well as IDDS's implementation partners (BRAC and the Damien Foundation). The training materials will help the NTP develop its institutional capacity to meet future training needs for the rollout and scale-up of Truenat.

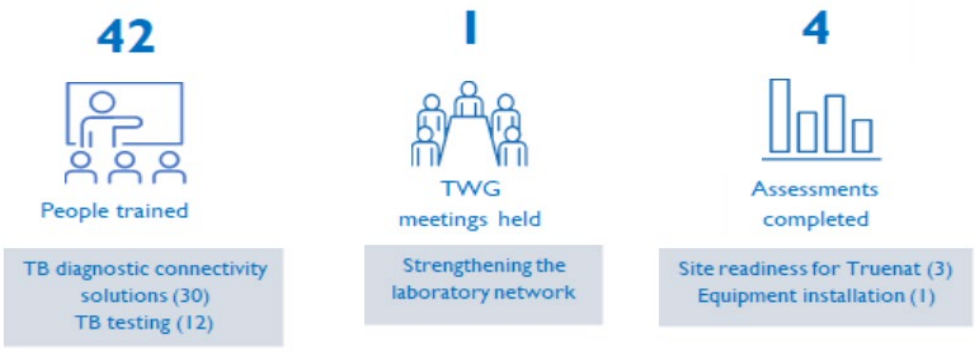
Problems Encountered and Solutions

Problem	Resolution	Status
Laboratories are faced with a shortage of reagents to conduct culture and LPA tests. As a result, the implementation of proficiency testing is delayed.	IDDS brought up this issue and continuously followed up with the NTP. The NTP finally submitted an urgent procurement request to Global Fund to procure the reagents.	Addressed—The reagents are expected to arrive in June 2022.
In this quarter, IDDS continued to experience challenges regarding the NTP's slow decision-making and last-minute changes in their decisions, which hindered timely implementation of IDDS activities.	To navigate these challenges, IDDS is frequently meeting with the NTP to expedite their decision-making.	The issue is partially addressed but requires IDDS to be proactive in following up and closely communicating with the NTP.
The NTP communicated the new requirement for performance data collection. Implementation partners are required to obtain an approval from the NTP every quarter to collect performance data.	IDDS is adhering to the new data collection approval requirement and submitted a request for approval for Q2 data collection.	Addressed—The NTP has provided approval.

Lessons Learned

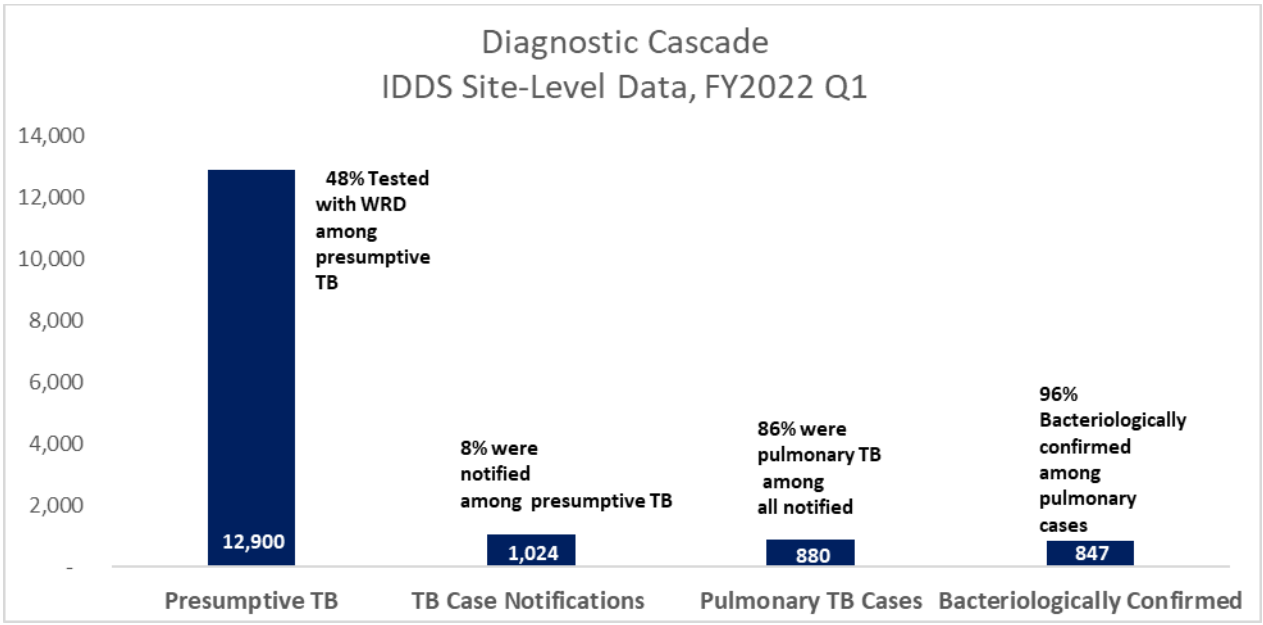
- To minimize the implementation delays, it is important for IDDS to frequently check in and closely communicate with the NTP.

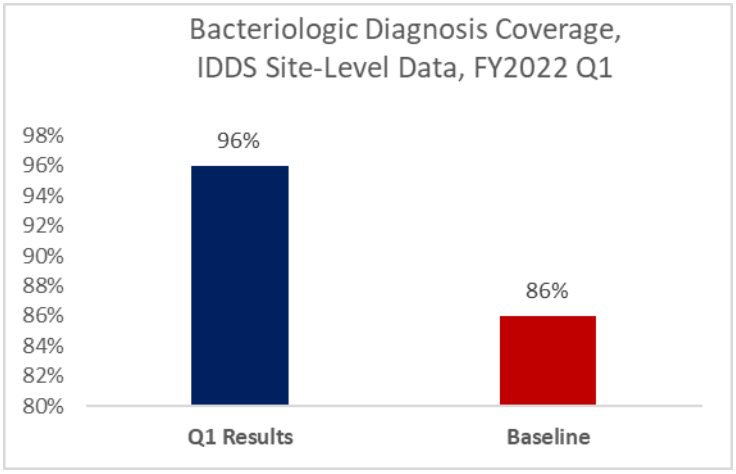
FY 2022 Q2 Output Results

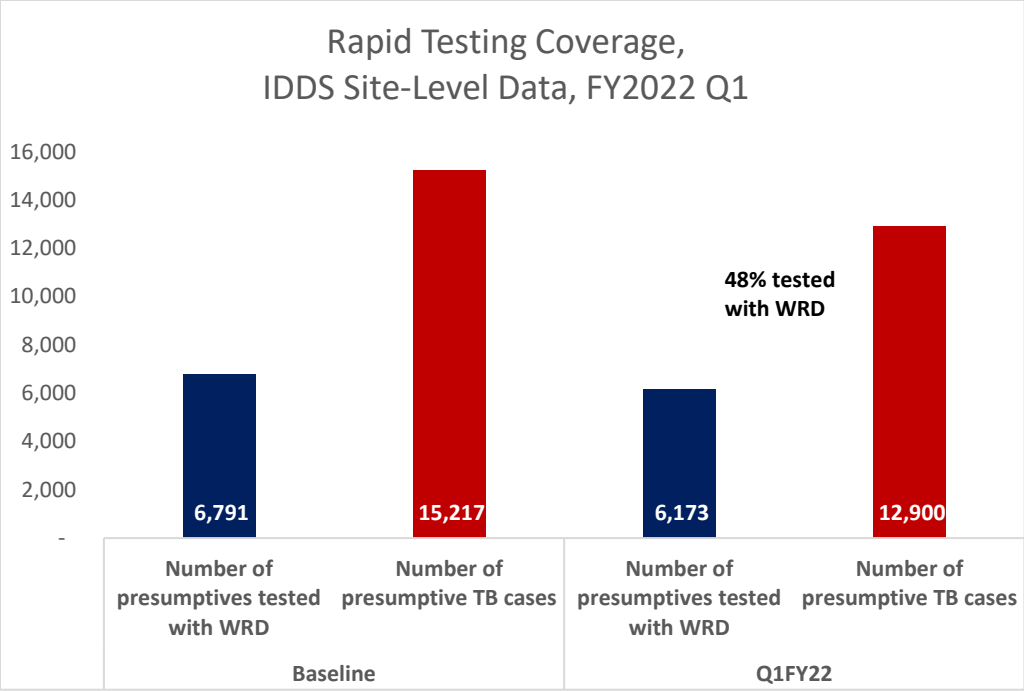


Outcome Results

Outcome data reflect results achieved through FY 2022 Q1 due to delays in receiving data from the NTP.






Rapid Testing Coverage,
IDDS Site-Level Data, FY2022 Q1
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
6,791
15,217
6,173
12,900
48% tested with WRD
Number of presumptives tested with WRD
Number of presumptive TB cases
Number of presumptives tested with WRD
Number of presumptive TB cases
Baseline
Q1FY22

BURMA

Quarterly Highlights

Diagnostic Highlights:

- To achieve the optimal service coverage of GX services in the private sector, IDDS conducted a consultative meeting with technical bodies such as WHO and MPHA. The output of the meeting was successfully intertwined with the innovative usage of IDDS's SRS platform, which is being developed to be fully functioning for GX services. This work is significant for the service expansion of the Double X strategy in the private, for-profit sector amidst the weakening public health system. Moreover, it will set a foundation for the integration of SRS into private entities for better coverage of diagnostic services.

Problems Encountered and Solutions

Problem	Resolution	Status
The coup d'état started on February 1, 2021, and quickly shut down all access to government facilities and staff. In addition, most TB services have been suspended. Internet communications have been severely restricted, and there are ongoing concerns that they may completely shut down with no notice. Due to reduced production of electricity, both urban and rural areas are suffering from severe electric outages.	IDDS staff continue to work from home. Due to frequent power outages across the country, the IDDS office allows its staff to come in during workdays to charge their laptops. With recommendation from the mission, IDDS is shifting its focus toward building TB diagnostic capacity and establishing referral networks, and away from public sector technical assistance. IDDS is proposing a work plan revision to cover the scope of meaningful and sustainable private (for-profit) sector engagement in TB diagnostics.	In progress
Due to the lack of a central coordinating mechanism for TB control activities in Burma and the disruption of regular communication channels, there are persistent challenges in coordination with the NTP and the NTRL, and even among TB implementing partners. There is no responsible body to synchronize partners' TB control activities across donors and geographical areas. Therefore, many IDDS planned activities at the national level are delayed.	IDDS worked closely with USAID and participated in coordination meetings to update the activities and plans. IDDS proactively identified and asked for collaboration with potential partners to synergize efforts. IDDS participated in national-level consortiums, such as the public-private mix ad hoc group, to ensure sustainability of TB treatment services, and the Joint Support Diagnostic Group, to ensure access to quality TB diagnosis services. This quarter, a coordination consultant was assigned as an intermediatory body to establish informal communication with the NTP and NTRL to ensure progress of prioritized IDDS activities, which are directly related to the survival of TB-affected communities.	In progress

Lessons Learned

- IDDS learned about the importance of change management, specifically focused on unpredicted, external factors, which affected IDDS's ability to implement certain project activities. Specifically, activities that are co-dependent on collaboration with national bodies and implementing partners needed to be reconfigured and executed in an alternative manner. For example, IDDS helped form the Joint Support Diagnostic Group as an alternate coordinating mechanism with technical bodies and implementing partners to strengthen laboratories and collaboration for the introduction of new diagnostic tools. In Burma, the public sector contributed the majority of TB case notification and case management. Following the political crisis, the NTP's capacity for essential TB diagnosis and treatment services was affected. This was exacerbated by the existing burden of the COVID-19 pandemic. According to the Global TB Report 2021, Burma has suffered from more than a 20 percent decrease in TB notification, with only 62 percent of TB treatment coverage in 2020. In 2022, more missing cases are expected according to the grey data presented by partner organizations. To ensure the sustainability of essential TB services in the community, TB implementing partners and donor agencies are formulating an interim mechanism in which intermediatory bodies will serve as the buffers between the public and non-governmental organization sector when providing technical support to the national TB control mechanism. These approaches will not only improve the accessibility of TB services for the community but will also help minimize political controversies while carrying out TB control activities.

FY 2022 Q2 Output Results

Outcome Results

TB outcome data for Burma are reported annually and are obtained from WHO, the only operational data source for TB currently in the country.

CAMBODIA

Quarterly Highlights

- The Cambodia FY 2022 TB work plan was approved with contingencies on January 5, 2022. A revised version was resubmitted by IDDS on January 21, 2022.

Diagnostic Highlights:

- In collaboration with Savics, CENAT, and COMMIT, IDDS installed DataToCare in 10- operational districts and trained 18 super-users (1 female) from CENAT, COMMIT, the United States Agency for International Development, and IDDS. Super-users then conducted hands-on training from February 7 to 11 for 64 end-users at 10 laboratories, with remote support from Savics. The DTC connectivity will allow monitoring and analysis of routine results and standard performance quality indicators, which will help the country address challenges in timely collection, analysis, and use of data for decision-making.
- IDDS conducted on-site installation and hands-on training for Truenat at 15 selected pilot sites from February 21 to March 4. A total of 77 people (9 female) from provincial health departments, operational districts, CENAT, and COMMIT participated in the training. Truenat instruments are placed at the peripheral-level health centers, which will enable the country to increase access to a rapid diagnostic tool for TB, including DR-TB. Additionally, 36 super-users were trained at the central level to support Truenat implementation.

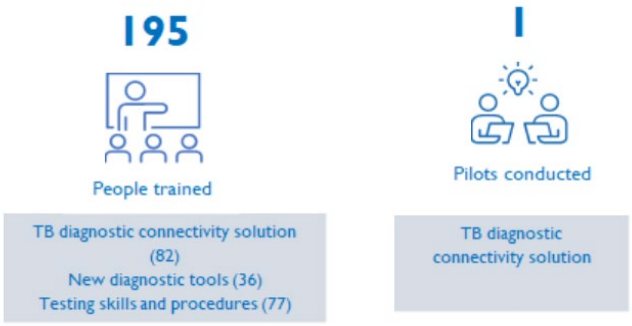
Problems Encountered and Solutions

Problem	Resolution	Status
The IDDS team in Cambodia has only two full-time staff who have been taking on several responsibilities for the project implementation.	IDDS proposed to hire a full-time project officer and part-time monitoring and evaluation focal point in the FY 2022 work plan. The recruitment for these positions is ongoing.	Ongoing
IDDS's counterparts at the NTP and other stakeholders are occupied with other competing priorities, which delayed implementation of some activities.	IDDS discussed this issue with CENAT and COMMIT and agreed to start implementation of the pending FY 2022 activities in April 2022 and onward.	Addressed

Lessons Learned

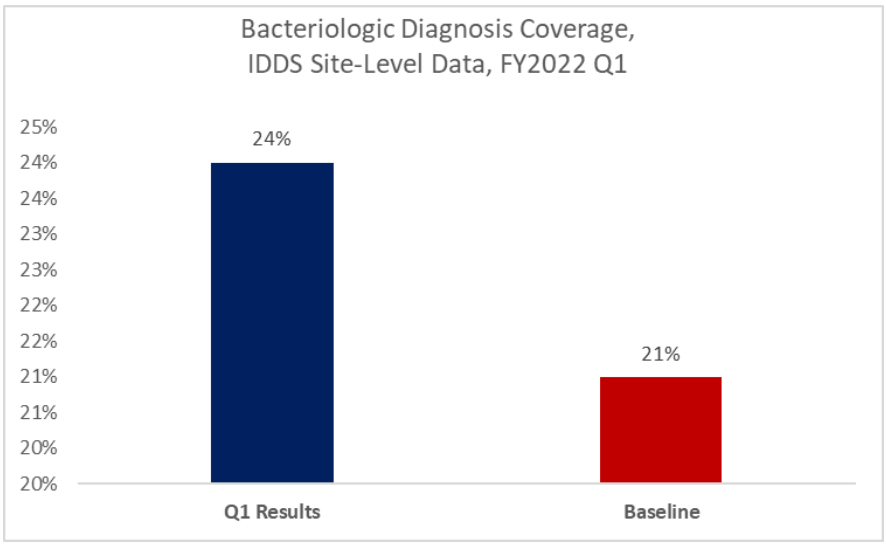
- If a training is conducted remotely, it is important to provide participants with mentoring and coaching from local facilitators to ensure that trainees have the capacity and are competent.
- When a training is led by an international facilitator who does not speak the local language, it is important to take into an account the time for local facilitators to translate the content for training participants.

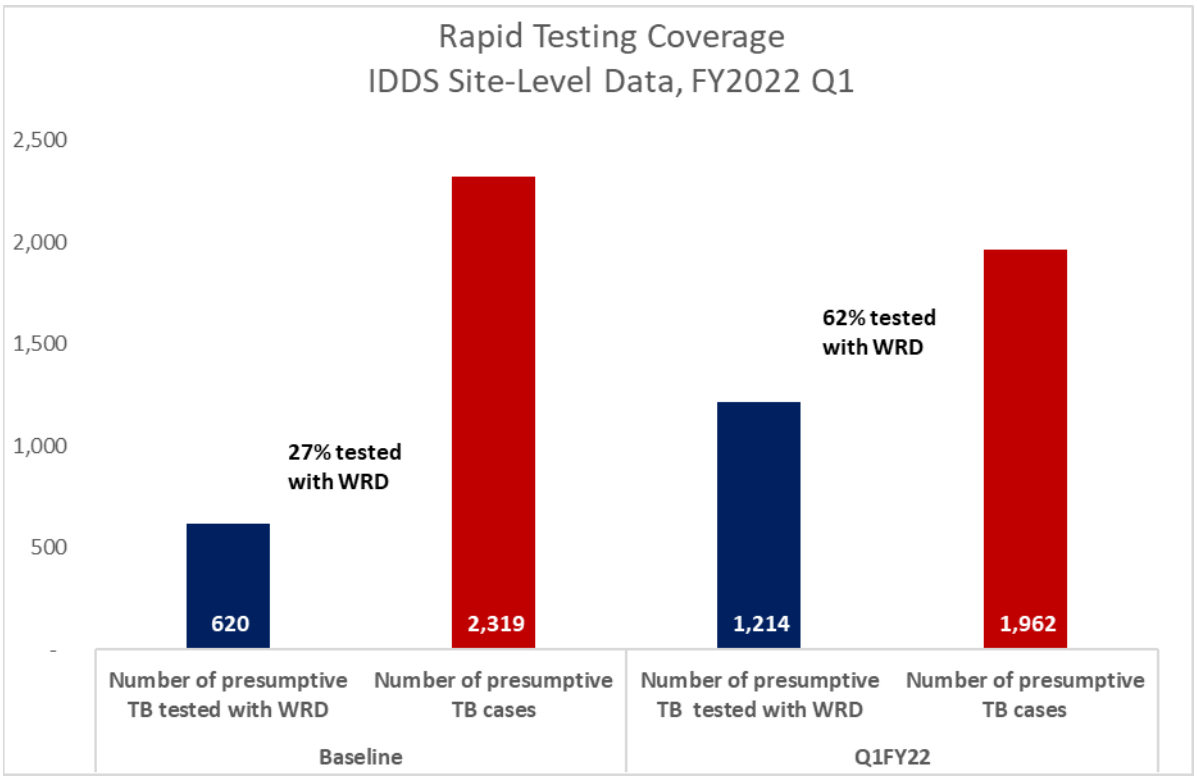
FY 2022 Q2 Output Results



Outcome Results

Outcome data reflect results achieved through FY 2022 Q1 due to delays in receiving data from the NTP.




Rapid Testing Coverage
IDDS Site-Level Data, FY2022 Q1
2,500
2,000
1,500
1,000
500
-
27% tested with WRD
62% tested with WRD
620
2,319
1,214
1,962
Number of presumptive TB tested with WRD
Number of presumptive TB cases
Number of presumptive TB tested with WRD
Number of presumptive TB cases
Baseline
Q1FY22

DEMOCRATIC REPUBLIC OF THE CONGO

Quarterly Highlights

- IDDS received the DRC FY 2022 TB work plan approval on January 6, 2022. IDDS subsequently hired and onboarded the team lead, the senior TB diagnostic advisor, and the TB program assistant during this quarter.

Success Story:

IDDS Supports Installation of and Training on Truenat Machines for Tuberculosis Diagnosis in the Democratic Republic of the Congo (See Annex B for full story)

Diagnostic Highlights:

- IDDS and the NTRL developed a training plan to reinforce biosafety and equipment maintenance and have started planning the training sessions, which will take place in Q3. IDDS and the NTRL finalized the list of necessary personal protective equipment and materials, including the trash bins and other needed waste management supplies for the NTRL.
- With Core TB funding, IDDS delivered and installed 38 Truenat machines in four pilot provinces (Kinshasa, Haut Katanga, Kasai Oriental, and Lualaba), and trained 41 participants (17 female) on the use of Truenat across 3 regional trainings held between March 22 and 31 in Kinshasa, Lubumbashi, and Mbuji-Mayi.
- Also with Core TB funds, IDDS helped train eight participants (all male) in a centralized training in Kinshasa for X-ray/CAD on March 23 to 25.

Problems Encountered and Solutions

Problem	Resolution	Status
None to report		

Lessons Learned

- None to report

FY 2022 Q2 Results

The work plan was approved this quarter, and IDDS is still negotiating with the NTP for access to data.

INDIA

The India FY 2022 TB work plan was approved on January 13, 2022.

Quarterly Highlights

Success Stories:

IDDS Supports the Development of a National Action Plan on Antimicrobial Resistance, 2022-2026, for India's Livestock Sector (See Annex B for full story)

IDDS USAID's Infectious Disease Detection and Surveillance Project Exhibits at India's Step Up to End TB Summit on World Tuberculosis Day 2022 (See Annex B for full story)

Diagnostic Highlights:

- IDDS completed the piloting of the supervision, monitoring, and evaluation package at two NRLs and two linked IRLs. Based on the learnings and recommendations by the NRLs, the supervisory package will be introduced formally by the CTD for comprehensive, effective, and impactful supervision of the TB diagnostic network. IDDS also completed the piloting of a grading tool for ranking the NRLs and IRLs. This will help the CTD in assessing the performance of the NRLs and IRLs and provide feedback on potential areas of improvement and create a healthy competition for improvement.
- IDDS participated in the Step Up to End TB Summit 2022 on World TB Day from March 24 to 25, 2022, organized by the India's Ministry of Health and Family Welfare. IDDS displayed the ongoing and planned interventions for strengthening the TB diagnostic network in the National Tuberculosis Elimination Program (NTEP). This has resulted in a wider recognition of the IDDS project among national and international key stakeholders engaged with the NTEP.
- IDDS participated and contributed to the National Workshop on AMR 2022-2026 for Livestock organized under the leadership of Ministry of Animal Husbandry, Dairying and Fisheries, Department of Animal Husbandry and Dairying. The workshop led to the development of a draft revised version of the National Action Plan-AMR for the livestock sector. This will contribute to the development of the new National Action Plan-AMR 2022-2026.

- IDDS successfully conducted field visits to 10 Truenat sites for the invalid/indeterminate study. The findings and observations from the visited Truenat sites will be discussed with the CTD laboratory unit to decide the next steps. This is the first country-wide assessment of Truenat assay results for TB and rifampicin resistance to understand the proportion of valid, invalid, and indeterminate results. The potential recommendations from the study are likely to reduce the invalid and indeterminate rates at Truenat sites at the NTEP by identifying the root causes of the high invalids and indeterminates in Truenat results.
- IDDS has received authorization to proceed with the identified private laboratory (Thyrocare), and IDDS completed the onboarding of the site coordinator for the implementation of "One-Stop TB/DR-TB Diagnostic Solution" Model in the Hisar district of Haryana. This will help initiate implementation and demonstrate the model for the TB diagnostic care cascade in the NTEP through private sector laboratory engagement.

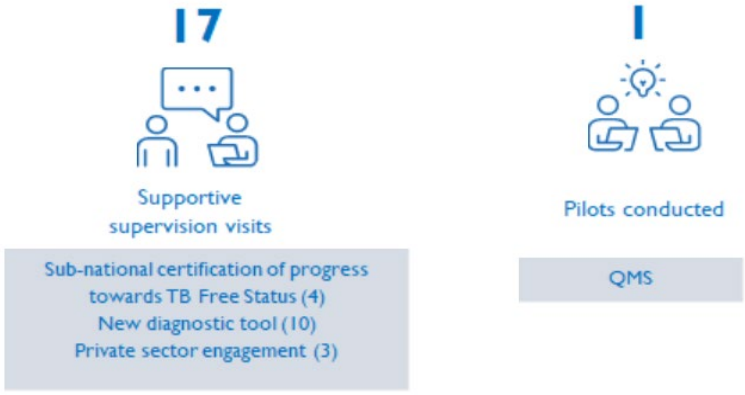
Problems Encountered and Solutions

Problem	Resolution	Status
The framework document on Feasibility, Impact, and Cost Assessment of "One Stop TB/DR-TB Solution" expected to be developed by IQVIA has not yet been completed.	IDDS conducted joint meetings involving IQVIA, the iDEFEAT TB team, and the USAID mission to understand the challenges and suggest possible solutions.	In progress
An unprecedented surge in the COVID-19 cases during this quarter has delayed planned activities.	IDDS continuously monitored the state-specific COVID-19 situation and travel advisory. Wherever case loads reduced and restrictions were relaxed, IDDS resumed the planned activities in the field.	Addressed

Lessons Learned

- Prior planning, prompt action, and regular follow-up helped IDDS in continuing the momentum of the planned activities.

FY 2022 Q2 Output Results



Outcome results not yet available. IDDS still waiting for the data sharing agreement from the CTD.

TANZANIA

IDDS submitted the Tanzania FY 2022 TB work plan to USAID on February 17, 2022, and responded to comments on March 15, 2022 The work plan was approved on March 25, 2022.

Quarterly Highlights

Diagnostic Highlights:

- IDDS submitted the final Tanzania TB DNA report to USAID as a key deliverable under the Core TB portfolio. The finalization of the report provides an opportunity for the National Tuberculosis and Leprosy Program, the MOHCDGEC, partners, and donors to review gaps and plan activities to strengthen the diagnostic network components as recommended in the assessment. In Q3, IDDS will hold a high-level dissemination workshop for the final report to communicate the report's findings.
- In March 2022, the National Tuberculosis and Leprosy Program received a second round of EQA panels for 220 GX sites in the country. (The two rounds of panels were purchased by IDDS in August 2021. The first round of EQA was completed in FY 2022 Q1.) The panels were distributed to the participating laboratories, and testing is scheduled for April 2022. IDDS will collaborate with the National Tuberculosis and Leprosy Program to provide support to poor-performing sites. Participation in EQA schemes and implementing corrective action plans improves the quality of laboratory data and surveillance systems.

Problems Encountered and Solutions

Problem	Resolution	Status
None to report		Addressed

Lessons Learned

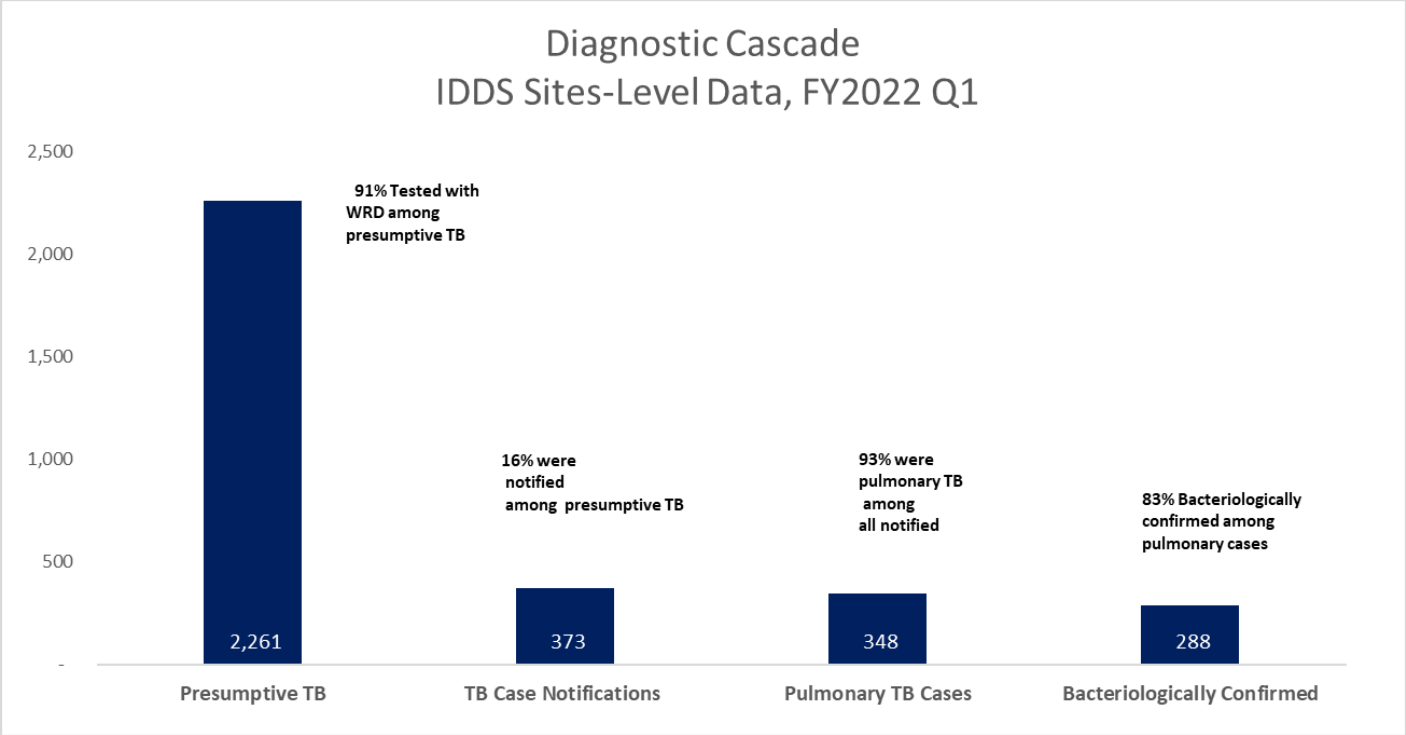
- None this quarter

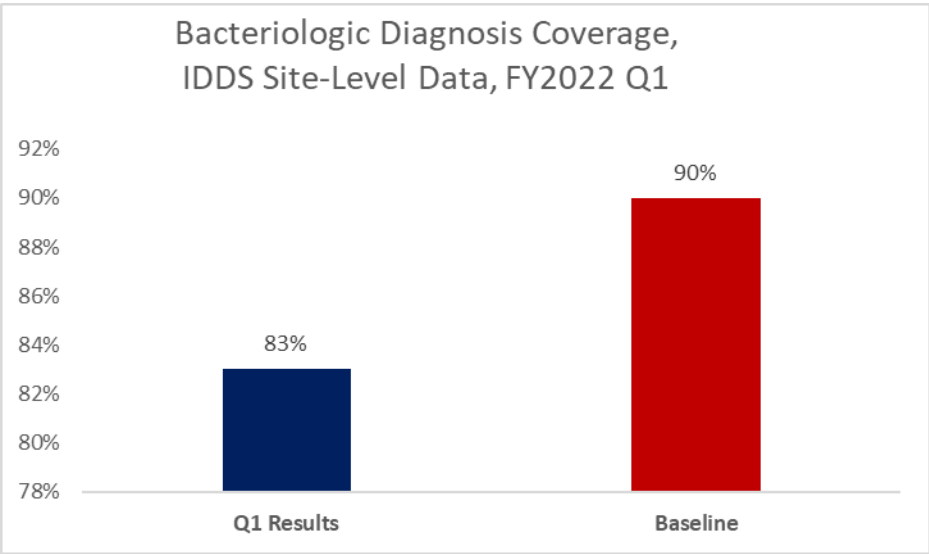
FY 2022 Q2 Output Results

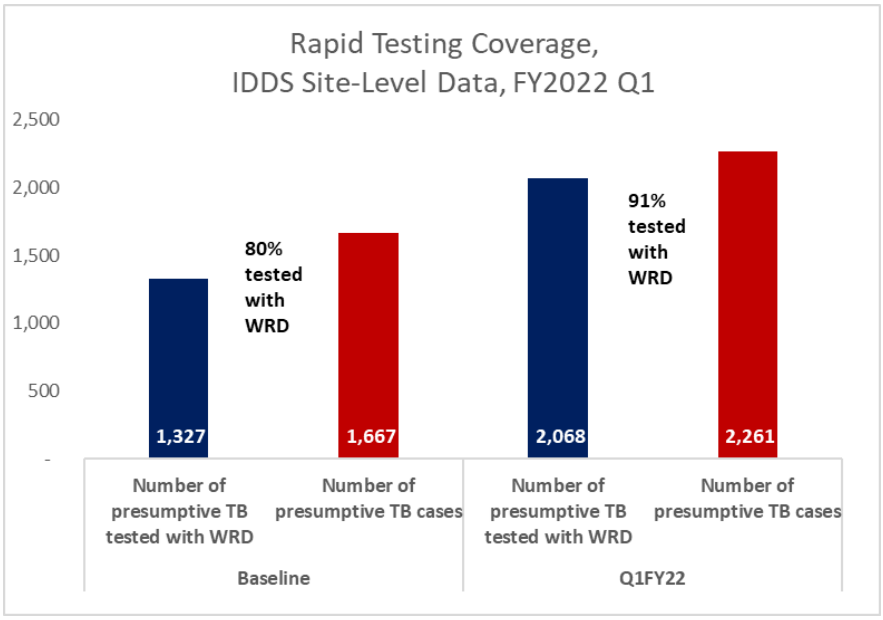
No outputs to report this quarter.

FY 2022 Q2 Outcome Results

Outcome data reflect results achieved through FY 2022 Q1 due to delays in receiving data from the NTP.






Rapid Testing Coverage,
IDDS Site-Level Data, FY2022 Q1
2,500
2,000
1,500
1,000
500
-
80% tested with WRD
91% tested with WRD
1,327
1,667
2,068
2,261
Number of presumptive TB tested with WRD
Number of presumptive TB cases
Number of presumptive TB tested with WRD
Number of presumptive TB cases
Baseline
Q1FY22

VIETNAM

Quarterly Highlights

Diagnostic Highlights:

- IDDS conducted the AI-enabled CXR training in Khanh Hoa province from January 17 to 20, 2022. A total of 25 participants (11 female) from the NTP, the mission, and 3 pilot sites in the province attended the training. Trainees include radiologists and clinical doctors. The pilot implementation of AI-enabled CXR began after the training. IDDS has been liaising between the pilot sites and the AI software company to troubleshoot connectivity issues, solve bugs, and monitor operation data daily. Introduction of AI-enabled CXR reading technology will contribute to increasing the capacity of health facilities in detecting TB and improving the skills of radiologists and clinical doctors in screening patients. The implementation of AI-CXR will also help enhance the Double X Strategy of the Vietnam NTP.
- In collaboration with the NTP, the NRL, and the mission, IDDS organized a handover ceremony for Truenat and ultraportable X-ray machines on February 16, 2022. The ceremony was widely covered by Vietnamese media, which helped raise awareness of TB prevention and control activities in the community. The donation of these TB detection tools also brought the significant attention of Vietnamese leaders and the community to the efforts to eliminate TB.
- IDDS, with Core TB funding, organized the national-level training of ultraportable X-ray from February 16 to 18, 2022, and two regional-level trainings from March 2 to 4, 2022, in Hai Duong province and March 9 to 11, 2022, in Can Tho province. A total of 65 participants, including provincial NTP staff from 10 implementation provinces, completed the training. Trainees strengthened their capacity to use the new technology to increase the possibility of detecting TB in their communities. This activity is aligned with other active case finding activities organized at the community level to increase the overall TB case notification in the country.

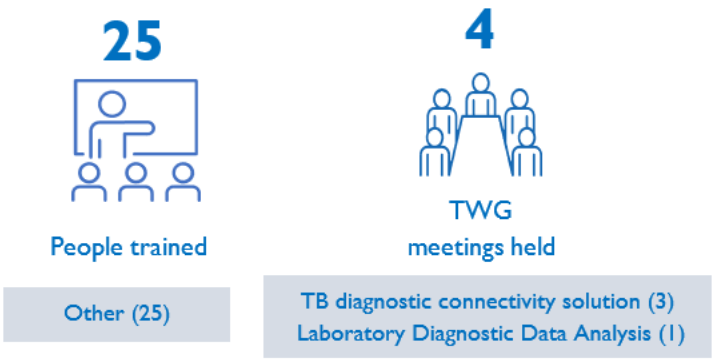
Problems Encountered and Solutions

Problem	Resolution	Status
Importation process of new diagnostic tools, such as ultraportable X-ray and Truenat, was prolonged, causing delays in the activity implementation.	IDDS worked closely with the NTP and Stop TB Partnership to prepare necessary documents to facilitate and expedite the process.	Addressed
Travel restrictions due to the ongoing COVID-19 pandemic were in place, which prevented IDDS from organizing ultraportable X-ray training sessions at each pilot site. Technical experts from the manufacturer were also not able to travel to Vietnam to provide on-site training.	IDDS organized four separate training sessions that used both online and on-site methods. Hands-on support from the vendor's representatives in Vietnam complemented the virtual training.	Addressed

Lessons Learned

- Flexibility in the implementation methods (virtual versus on-site) will help IDDS implement activities according to the work plan and its timeline. Close communication with the NTP and the mission aided in decision-making.

FY 2022 Q2 Output Results



FY 2022 Q2 Outcome Results

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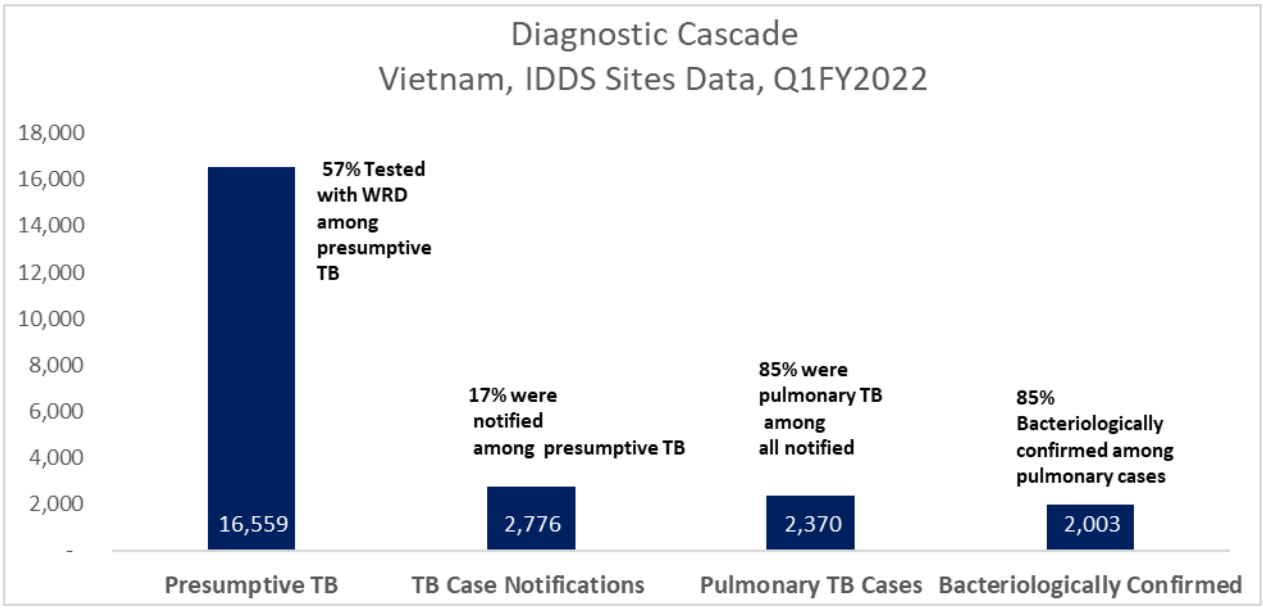
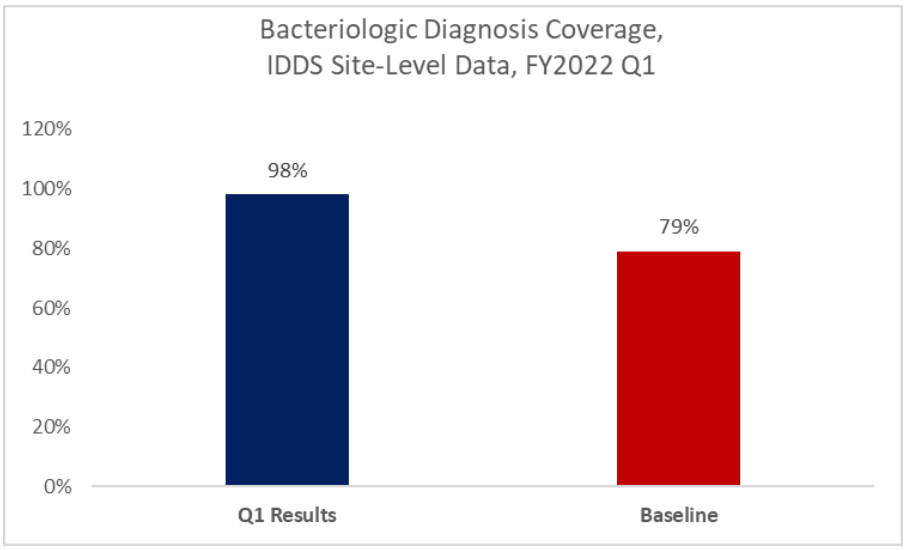
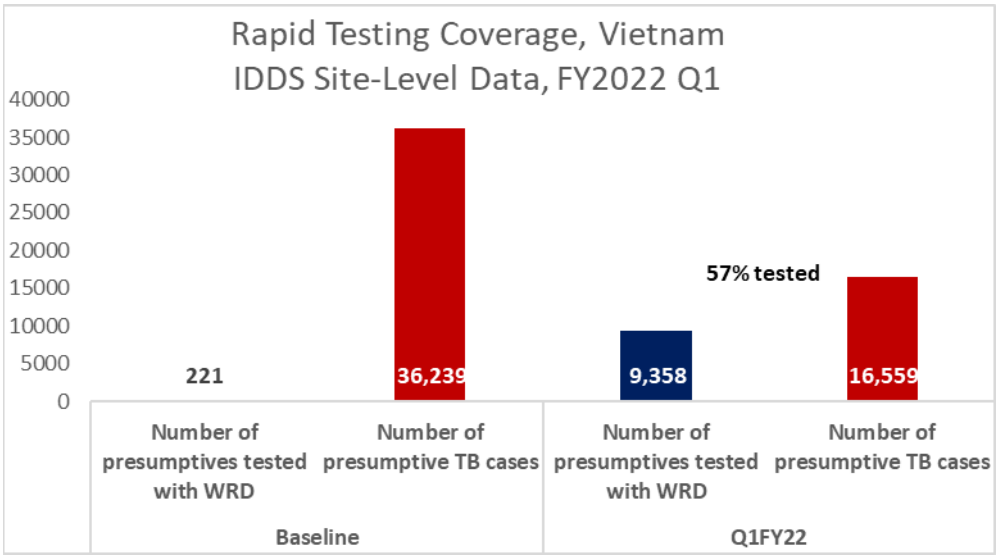



Bacteriologic Diagnosis Coverage,
IDDS Site-Level Data, FY2022 Q1
120%
100%
80%
60%
40%
20%
0%
98%
79%
Q1 Results
Baseline


Rapid Testing Coverage, Vietnam
IDDS Site-Level Data, FY2022 Q1
40000
35000
30000
25000
20000
15000
10000
5000
0
221
36,239
57% tested
9,358
16,559
Number of presumptives tested with WRD
Number of presumptive TB cases
Number of presumptives tested with WRD
Number of presumptive TB cases
Baseline
Q1FY22

ZIMBABWE

Quarterly Highlights

Diagnostic Highlights:

- IDDS supported the development of the National TB Testing Manual. The manual contains SOPs on GX, Truenat, microscopy, line probe assay, and culture and DST. This manual will provide guidance to laboratory personnel at the national, provincial, district, and facility levels on how to provide quality TB testing services.
- IDDS supported the development of the Quality Improvement Framework document for Harare Province. The document outlines areas to be improved to ensure the provision of quality TB diagnostic services.
- IDDS provided financial and technical support to a team of TB laboratory supervisors who conducted baseline assessments in 25 TB laboratories in Harare Province. In Q3, IDDS will mentor these laboratories to address findings from this baseline assessment.

Problems Encountered and Solutions

Problem	Resolution	Status
None to report		

Lessons Learned

- Collaboration with the Ministry of Health and Child Care experts in the implementation of activities was very important because it allowed IDDS team members to support multiple activities at the same time by assigning different team members to work with these ministry experts. This enabled faster implementation of activities.

FY 2022 Q2 Output Results

32

People trained

Operational Research (32)

5

SOP, plans, and guidelines developed

Testing skill and procedure (4)
QMS (1)

25

Supportive supervision visits

QMS (25)

2

TWG meetings held

New Diagnostic tool (1)
Other (1)

FY 2022 Q2 Outcome Results

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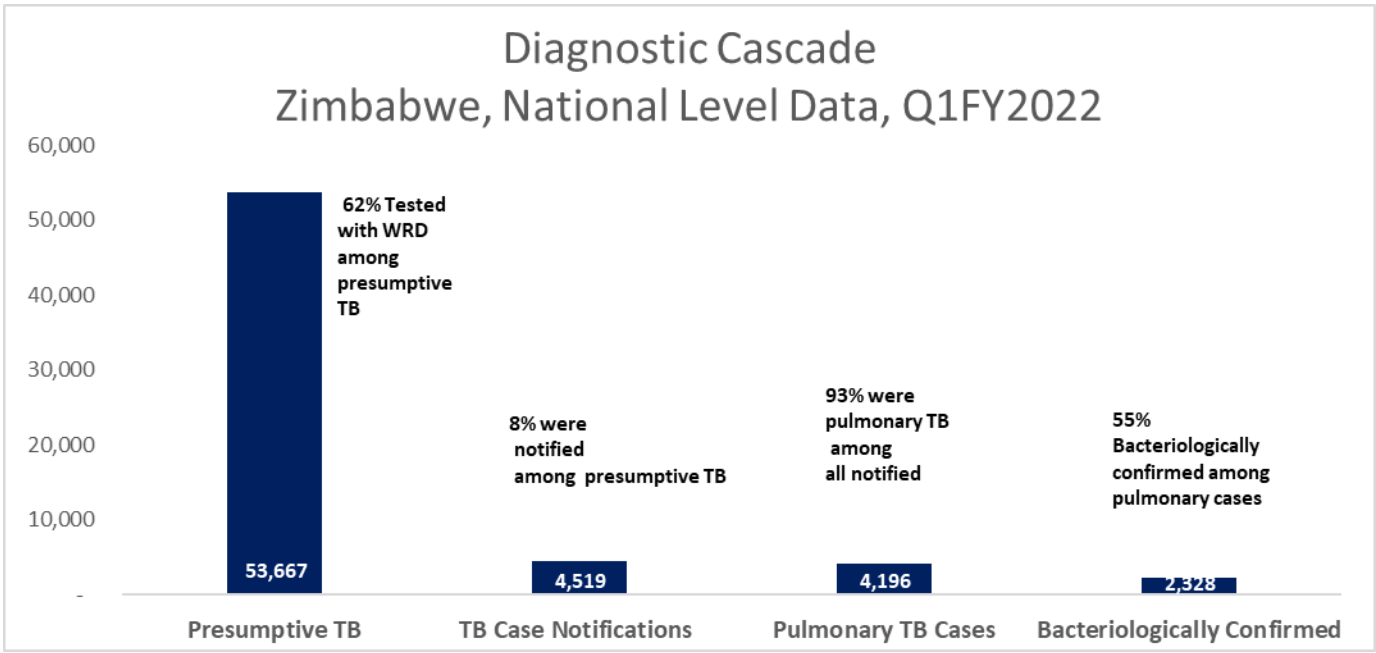
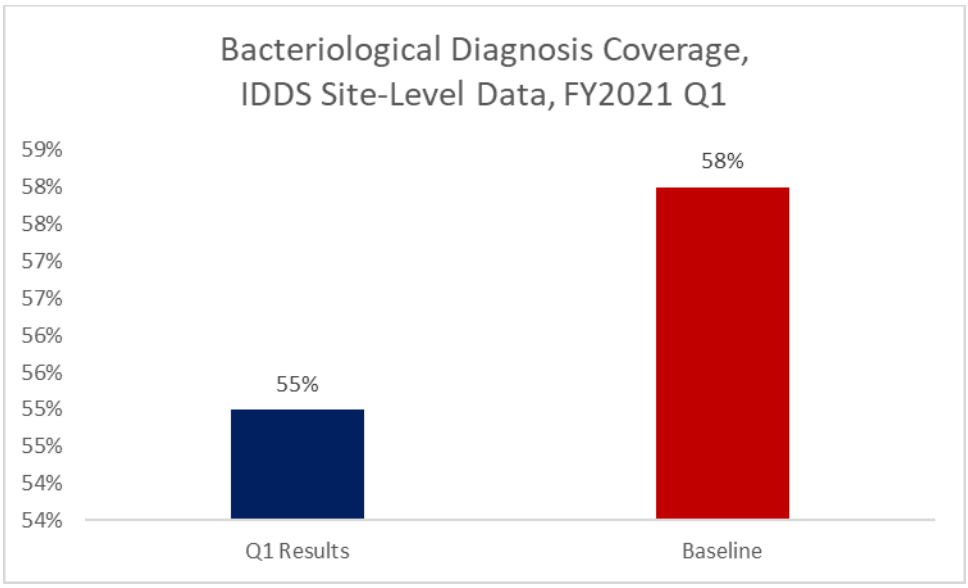
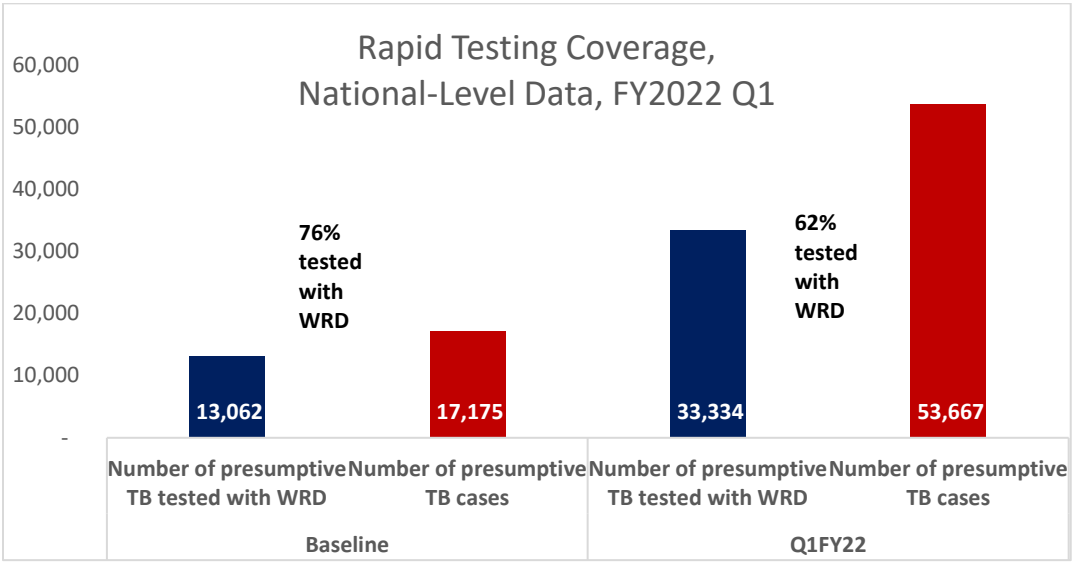



Bacteriological Diagnosis Coverage,
IDDS Site-Level Data, FY2021 Q1
59%
58%
58%
57%
57%
56%
56%
55%
55%
54%
54%
55%
58%
Q1 Results
Baseline


Rapid Testing Coverage,
National-Level Data, FY2022 Q1
60,000
50,000
40,000
30,000
20,000
10,000
-
76% tested with WRD
62% tested with WRD
13,062
17,175
33,334
53,667
Number of presumptive TB tested with WRD
Number of presumptive TB cases
Number of presumptive TB tested with WRD
Number of presumptive TB cases
Baseline
Q1FY22

Middle East and North Africa

Quarterly Highlights

The MENA FY 2022 work plan was approved on January 11, 2022.

Diagnostic Highlights:

- IDDS completed the first draft of a DNA tool to be used by MENA countries to assess the diagnostic network and the ability to detect and characterize novel emerging pathogens to inform a timely public health response.

Problems Encountered and Solutions

Problem	Resolution	Status
The final list of target countries for assessment has not yet been determined.	USAID provides IDDS with a final list of preferred, strategic countries in which to implement the pilot.	In progress

Lessons Learned

- None

Annex A: Activity Implementation Progress

Annex B: Success/Highlight Stories

Annex C: Country Monitoring and Evaluation Tables for GHS