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Infectious Disease Detection and Surveillance (IDDS)

Quarterly Report

October 1, 2022–December 31, 2022



Specimen collection, transport, and qualitative respirator fit testing training in the Philippines. Photo by IDDS

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Abbreviations

AMR	antimicrobial resistance
ARP	American Rescue Plan
AST	antimicrobial susceptibility testing
CBS	community-based surveillance
CDW	Central Data Warehouse
CENAT	Center for Tuberculosis and Leprosy Control
CHU	<i>Centre Hospitalier Universitaire</i> (University Hospital Center)
CNM	National Center for Parasitology, Entomology and Malaria Control
COVID-19	Coronavirus Disease 2019
CME	Continuing Medical Education
CXR	chest X-ray
DAH	Department of Animal Health
DNA	diagnostic network assessment
DR	drug-resistant
DRC	Democratic Republic of the Congo
DRS	Drug Resistant Survey
DST	drug susceptibility testing
DTC	DataToCare
EPHI	Ethiopian Public Health Institute
EQA	external quality assessment
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
INRB	<i>Institut National de Recherche Biomédical</i>
INSP	<i>Institut National de Santé Publique</i> (National Institute of Public Health)
iNTP	introducing New Tools Project
IR	intermediate result
IRL	intermediate reference laboratory

ISO	International Organization for Standardization
LNSA	laboratory network spatial analysis
MARD	Ministry of Agriculture and Rural Development
MATA	Myanmar Anti-Tuberculosis Association
MDR	multidrug-resistant
MENA	Middle East and North Africa
MoH	Ministry of Health
MOU	memorandum of understanding
MTB	<i>Mycobacterium tuberculosis</i>
NAP	National Action Plan
NASIC	National Antimicrobial Stewardship Inter-Agency Committee
NCDC	National Center for Disease Control
NDD	National Diagnostic Division
NIHE	National Institute of Hygiene and Epidemiology
NMRL	National Microbiology Reference Laboratory
NPHL	National Public Health Laboratory
NRL	National Reference Laboratory
NTEP	National Tuberculosis Elimination Program
NTLEP	National Tuberculosis and Leprosy Elimination Program
NTP	National Tuberculosis Program
NTRL	National Tuberculosis Reference Laboratory
PCR	polymerase chain reaction
PMI	U.S. President's Malaria Initiative
QMS	quality management system
RAHO	regional animal health office
RIF	rifampicin
RRH	Regional Referral Hospital
RTRL	regional tuberculosis reference laboratory
SIZE	<i>Sistem Informasi Zoonoses dan Emerging Infectious Diseases (System for Zoonotic and Emerging Infectious Diseases)</i>
SLIPTA	Stepwise Laboratory Improvement Process Towards Accreditation
SOP	standard operating procedure
SOS	simple one-step
SRS	specimen referral system
TB	tuberculosis



TWG	technical working group
UNHAS	United Nations Humanitarian Air Service
USAID	United States Agency for International Development
VAHIS	Vietnam Animal Health Information System
WAAW	World Antimicrobial Awareness Week
WHO	World Health Organization
XDR	extensively drug-resistant

Program Overview

Summary Overview

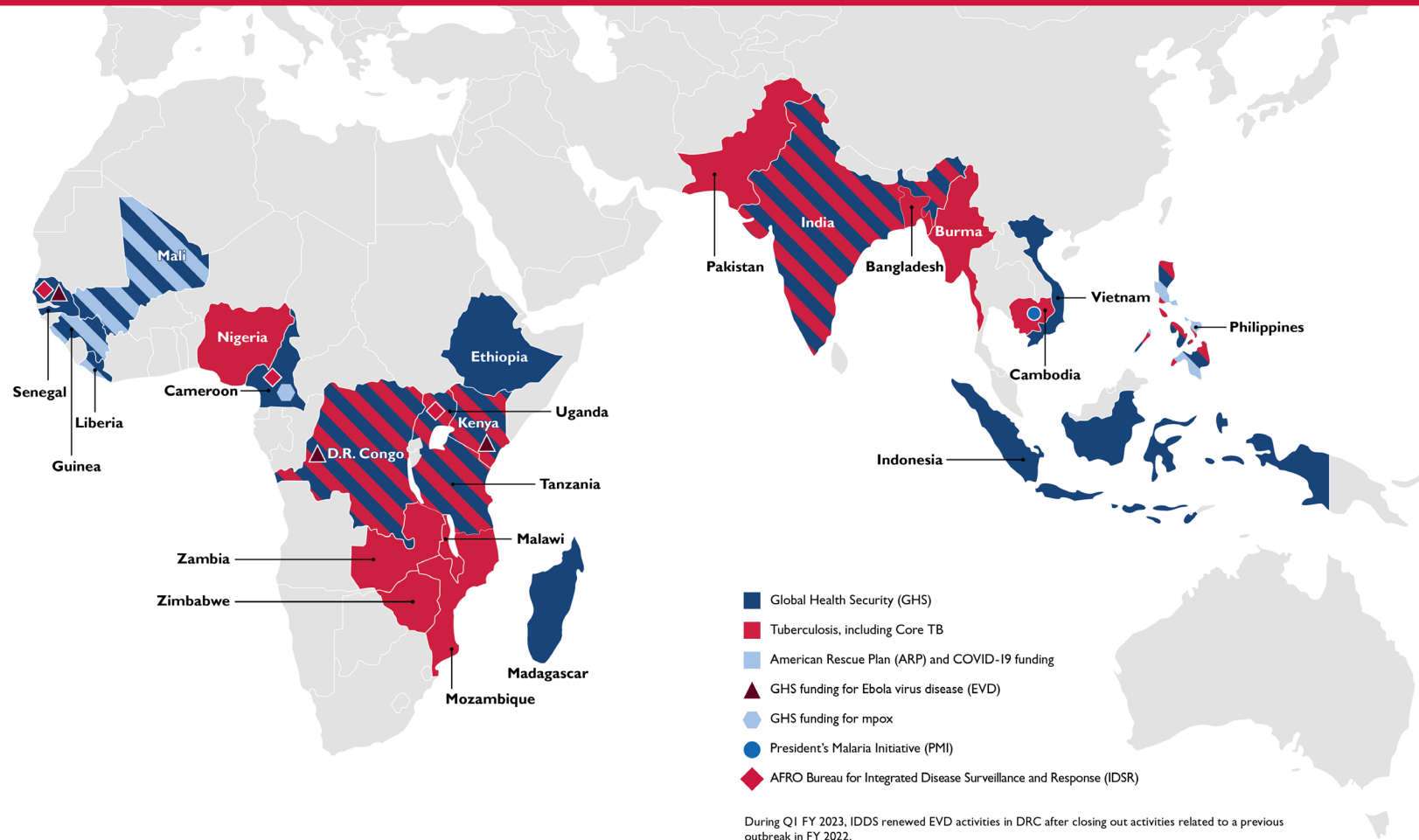
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Contract Number:	GS00Q14OADU119
Names of Partners:	PATH, FHI 360, African Society for Laboratory Medicine, Metabiota, Abt Associates, Gryphon Scientific, Association for Public Health Laboratories, Fondation Mérieux
Geographic Coverage:	<i>Countries:</i> Bangladesh, Burma, Cambodia, Cameroon, Democratic Republic of the Congo, Ethiopia, Guinea, India, Indonesia, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Pakistan, Philippines, Senegal, Tanzania, Uganda, Vietnam, Zambia, and Zimbabwe <i>Regions:</i> Middle East and North Africa
Reporting Period:	October 1, 2022–December 31, 2022

Program Description

The Infectious Disease Detection and Surveillance (IDDS) project is strengthening the capacity of 24 countries in Africa and Asia to effectively detect and monitor outbreaks of infectious diseases, improve identification and reporting of antimicrobial resistance (AMR), 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, FY 2023 Q1

USAID INFECTIOUS DISEASE DETECTION AND SURVEILLANCE (IDDS) PROJECT WHERE WE WORK, Q1 FY 2023



Quarterly Progress

FY 2023 Q1 Overall Achievements

This report summarizes activities that occurred during quarter 1 (Q1) of fiscal year (FY) 2023 and program year 5: October 1, 2022, through December 31, 2022. This quarter, the project implemented Global Health Security (GHS) activities in 15 countries, including supporting responses to outbreaks of mpox (1 country) and Ebola virus disease (EVD) (2 countries). IDDS also implemented activities in response to the Coronavirus Disease 2019 (COVID-19) pandemic in 3 countries, President's Malaria Initiative (PMI) activities in 1 country, Integrated Disease Surveillance and Response (IDSR) activities in 2 countries, and TB activities in 15 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 the COVID-19 pandemic and country-level EVD outbreaks. Through GHS and American Rescue Plan (ARP) 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 2023 Q1, IDDS supported 15 countries to strengthen their diagnostic networks. IDDS also supported response and preparedness for the EVD outbreak in the Democratic Republic of the Congo (DRC) and Kenya, supported mpox response in Cameroon, and continued to support ongoing COVID-19 response activities in Guinea, Mali, and the Philippines. Key progress in these areas is presented in the sections that follow.

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

In FY 2023 Q1, 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; and enhancing specimen transport referral and reporting systems.

IDDS teams continued to strengthen partnerships and collaboration to improve diagnostic network capacity, and to support the **development and dissemination of national-level policies**, including laboratory regulations, strategic plans, and standard operating procedures (SOPs) in five countries. In **DRC**, IDDS developed a quality assurance manual and a biosafety and biosecurity manual for health laboratories in eastern DRC. In **Kenya**, IDDS prepared for the revision of bacteriology SOPs by

working with the surveillance sites' laboratories and the National Microbiology Reference Laboratory (NMRL) to identify technical SOPs with key gaps and opportunities for improvement. In **Madagascar**, IDDS provided financial and logistic support to the Ministry of Health (MoH) to organize a workshop to officially launch the National Strategic Plan for the Development of Laboratories 2021–2025, a document that was developed with IDDS support. The workshop mobilized partners to begin implementation of the strategic plan. In **Mali**, IDDS provided technical and financial support to the *Institut National de Santé Publique* (INSP, or National Institute of Public Health) to hold two meetings of the Multisectoral Committee for Laboratory System Strengthening, during which participants discussed advocacy for the establishment of the National Laboratory Directorate, quality control at the national blood transfusion center, and laboratory equipment management challenges in the hospitals of Sikasso, Mopti, and Ségou. In **Tanzania**, IDDS provided technical assistance and participated in a stakeholder meeting held in Dar es Salaam to validate the National Action Plan (NAP) for AMR and the National AMR Surveillance Framework, which was later launched during World Antimicrobial Awareness Week (WAAW) in November 2022.

IDDS filled gaps in diagnostic networks by **transporting specimens and improving specimen referral systems** (SRS). In **Kenya**, IDDS continued to track bacteriology specimen referral from high-volume peripheral health facilities to Bungoma and Murang'a county testing hubs within the established specimen referral mechanisms. The project provided specimen collection and packaging materials for distribution to peripheral health facilities, provided technical assistance (educational materials and data analysis) to the county teams to educate clinicians, and provided specimen transportation costs (fuel costs in Murang'a and motorbike riders' transport cost reimbursements in Bungoma) to complement support from the county and other partners. IDDS also convened forums for medical providers in these counties during the WAAW celebrations to promote awareness of laboratory services and thereby increase the number of specimens that are referred for bacteriology testing.

In four countries, IDDS worked to **enhance QMS** at diagnostic laboratories. In **Ethiopia**, IDDS conducted five days of International Organization for Standardization (ISO) 15189 training for its five human health AMR sites, in collaboration with the Ethiopian Public Health Institute (EPHI), for 19 participants (7 female). The training aimed to improve understanding of ISO 15189, including its QMS, required documents and records, and performance monitoring mechanisms. In **Kenya**, IDDS designed tools to monitor laboratories' key performance indicators (e.g., blood culture contamination rates, specimen rejection rates, and external quality assessment [EQA] performance). The project will use these tools to monitor the five IDDS-supported sites' internal quality controls starting in FY 2023 Q2. EQA was also completed by the five sites in FY 2023 Q1, and results will be available next quarter. In **Liberia**, IDDS provided QMS mentorship on development of corrective and preventive action plans to 27 laboratory staff (3 female) from 3 supported sites, in response to gaps identified during their Stepwise Laboratory Improvement Process Towards Accreditation (SLIPTA) audits. The technicians at one of the sites (Ganta United Methodist Hospital Laboratory) were also trained on tracking of quality indicators and equipment maintenance. IDDS also provided financial support for MoH auditors certified by the African Society for Laboratory Medicine to conduct SLIPTA audits for Lofa County at four sites, and the project is engaged with the National Diagnostic Division (NDD) and the National Public Health Reference Laboratory to discuss the participation of a bacteriology laboratory supported by IDDS in an interlaboratory comparison program for EQA. In **Mali**, IDDS provided technical and financial support to INSP to finalize a quality manual for accreditation processes during a workshop in Fana and Koulikoro regions that was attended by 15 participants.

IDDS also continued to **support the establishment of SRS** to increase access to quality laboratory testing and improve the detection and confirmation of priority diseases. In **DRC**, IDDS participated in a technical working group (TWG)—which includes partners from the provincial MoH, *Institut National de Recherche Biomédical* (INRB-Goma, or National Institute for Biomedical Research-Goma), and local airline companies on the specimen transportation system in the eastern DRC—that aims to expand a service agreement with a courier company (public or private) for specimen transportation from at least half of the health facilities in the public sector throughout all levels of the health system in the country. In **Guinea**, IDDS visited two regions (Kankan and Labe) to conduct baseline assessments of sites where IDDS will support SRS activities. IDDS provided financial support to initiate specimen transport in Nzérékoré beginning in October 2022, a region located more than 1,000 kilometers from the reference laboratory in Conakry. In collaboration with the World Health Organization (WHO), IDDS has begun transporting specimens using United Nations airplanes, improving the time of transport and the quality of specimens received at the reference laboratory. In **Tanzania**, IDDS visited one of the catchment areas of Morogoro Regional Referral Hospital (RRH) to collect information on available specimen referral mechanisms (e.g., number of patient or specimens referred, mode of referral). Visits to the remaining three sites in FY 2023 Q2 will inform recommendations to the local government health management teams about collaborative efforts to strengthen the referral mechanisms. In **Vietnam**, IDDS summarized SRS evaluation data on timeliness, biosafety and biosecurity issues, operation cost, and effectiveness of the SRS for an evaluation report and shared evaluation results with the private sector partner (Nhat Tin Logistics) during a virtual meeting. During this meeting, the company agreed to further customize services for different types of specimens and improve its online information system to streamline the processes for placing orders for specimen pickup and management of packages during transit. IDDS also provided remote technical support for SRS activities in human health facilities in three provinces, collected transportation-related data from these provinces, collected feedback on specimen data management software needs from stakeholders, and provided remote technical support for troubleshooting issues with the software. Finally, in collaboration with stakeholders at regional animal health offices (RAHOs), IDDS piloted specimen transport by air, testing three different routes between regions. Initial results showed that of 10 packages transported, 6 were delivered within the target of 24 hours.

Recognizing the importance of sustainability planning and local ownership, IDDS organized a 3-day workshop in **DRC** with 30 key stakeholders and 4 online participants from the MoH, INRB-Goma, Foundation Rodolph Merieux, the U.S. Centers for Disease Control and Prevention, and other organizations to review and finalize the advocacy roadmap for mobilizing resources to sustain the diagnostic network in eastern DRC. In **Kenya**, an IDDS diagnostic specialist met with the head of NMRL to discuss the development of a biorepository for bacteriology isolates. During the meeting, participants agreed to develop an SOP to guide the establishment of the biorepository and further explore tools to manage the repository, which will support NMRL to manage valuable biological materials in their custody, mainly bacterial isolates, for use in future research. The project continued to work closely with NMRL to track isolates referred by the surveillance sites, analyze data, and provide feedback to the sites. The results of the isolates data analysis were published in the National AMR Surveillance Report of 2022. IDDS, in collaboration with NMRL and the International Center for AIDS Care and Treatment, also held a virtual refresher training for 16 AMR surveillance sites on isolates referral, which was attended by 24 health workers (15 female).

Table 1: Project outputs related to strengthening diagnostic networks for FY 2023 Q1 and the countries that contributed to these outputs (includes 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 Topics
People trained	1,356	70			19	318	59	890
SOPs, plans, and guidelines developed or revised	11	5			3	2		1
TWG meetings held	10	3	1	1	2		1	2
Supervisory visits conducted	4	4						
Pilots conducted	2					2		
Assessment reports completed								
Persons mentored	70	31			39			
Specimen transported						5,801		
Countries¹								
Cameroon						•		
DRC		•		•	•	•	•	•
Ethiopia		•			•			
Guinea						•		
Indonesia								
Kenya		•				•		•
Liberia		•			•		•	
Madagascar		•						
Mali			•		•			
Philippines						•	•	
Senegal								
Tanzania								•
Uganda								
Vietnam						•		

TWG=technical working group¹ Countries listed are those that contributed to specific outputs in Q1 FY 2023

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 **Vietnam**, IDDS collaborated with RAHO staff to organize five virtual bimonthly meetings to review the use of the Vietnam Animal Health Information System (VAHIS), mentor provincial and district staff in pilot provinces, and allow them to practice entering animal disease data into the demo version of VAHIS. IDDS also provided technical and financial support to develop the first VAHIS mobile application and organized three TWG meetings (attended by 22 participants) to review the app and provide recommendations for its improvement. The app will be a key tool for those who work in the field, especially district-level animal health staff.

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

IDDS **strengthened capacity to detect priority pathogens and AMR** in six countries during FY 2023 Q1. In **DRC**, IDDS worked with a TWG that included partners from the MoH, the Directorate of Epidemiological Services, and the Directorate of Laboratory Services to update and finalize the Directorate of Epidemiological Services' outdated outbreak action plan. IDDS is currently reviewing the updated 2022 Epidemic Preparedness and Response Plan, which aims to respond to future epidemics that may occur in the 124 health zones spread over 4 provinces, namely North Kivu, South Kivu, Ituri, and Maniema. In **Ethiopia**, IDDS jointly conducted a two-day mentorship visit at each of the five IDDS-supported human health sites and one animal health AMR site, to observe site improvement activities, provide laboratory supplies, and discuss gaps and recommendations. IDDS also completed minor site refurbishments at the five human health AMR sites, including installation of door access control instruments that will ensure biosafety and biosecurity by restricting access to the laboratories. In **Guinea**, IDDS conducted a baseline assessment of bacteriology and serology/immunology testing capacity at Nzérékoré Regional Laboratory. In **Kenya**, IDDS continues to monitor enrollment of its AMR e-learning course and support learners to complete the course. As of December 13, 2022, 1,276 learners (458 female) had enrolled across the 3 available tracks. IDDS diagnostic specialists provided technical guidance to surveillance sites on organism identification, antimicrobial susceptibility testing (AST), and quality assurance practices. The specialists also participated in and facilitated sessions during which microbiology experts discussed routine and unusual cases encountered in their laboratory practice, and shared information on organism identification and AST with surveillance sites through a WhatsApp forum. IDDS continued to monitor AMR detection and surveillance activity progress at the surveillance sites. All sites continued to provide uninterrupted ID and AST services. A total of 1,601 bacteriology culture tests were conducted, and 257 organisms were isolated in October and November 2022. In **Liberia**, IDDS provided mentorship on collection and processing of bacteriology specimens to six technicians (one female) across three supported laboratories (Phebe, Tellewoyan, and G.W. Harley). In **Madagascar**, IDDS assessed the knowledge of staff from 4 basic health care facilities in the Boeny region to evaluate their understanding of the pre-analytic phase of bacteriology testing (having held a workshop earlier in 2021 for these staff), and then conducted follow-up supervision visits to the 4 sites and a training on this topic for 44 staff (24 female).

Strengthening National Surveillance Systems

To help countries to prevent, rapidly and effectively detect, and respond to events of significance for public health, IDDS continued to assist countries with strengthening their national surveillance systems. In FY 2023 Q1, IDDS supported countries to address critical gaps in their surveillance systems; strengthen indicator-based surveillance, event-based surveillance, 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 2023 Q1, IDDS provided support to four countries to **increase their capacity to report complete, timely, and high-quality data** to strengthen the surveillance system. In **Liberia**, IDDS mentored two technicians from Phebe Laboratory on WHONET data management. In **Madagascar** and **Mali**, IDDS collaborated with government agencies to develop and review three monthly IDSR bulletins for each country and disseminate them electronically to stakeholders, thus improving the coordination of IDSR. In **Mali**, IDDS continued to monitor data quality from CBS reports submitted by five supported health districts (Kadiolo, Kangaba, Kati, Kolondieba, and Sikasso), and also trained eight

government staff (three female) on the use of a web-based platform for surveillance document storage and sharing. In **Vietnam**, IDDS reviewed animal disease data from five pilot provinces to prepare for three separate VAHIS quarterly data review meetings, which IDDS organized in collaboration with the Department of Animal Health (DAH) and RAHOs.

Across five countries, IDDS **equipped laboratories with key supplies** needed to detect priority pathogens and helped them **manage commodities**. In **Ethiopia**, IDDS ordered antibiotic discs for five human health sites to fill a critical gap in AST capacity, which will be delivered in FY 2023 Q2. IDDS also procured laboratory stools and waste containers for its six AMR sites after identifying gaps in a previous assessment. Finally, the project procured and delivered two benchtop PH meters for two of the sites and petri dishes for all five of the human health AMR sites. In **Kenya**, IDDS is engaging a potential equipment placement vendor (BioMérieux) and the Murang'a county team in discussions for the placement of VITEK 2 compact organism identification and AST automated equipment. IDDS is also actively following up with vendor BioMérieux on the preventive maintenance of the automated organism identification and AST equipment at Kitale and Malindi county referral hospital laboratories, to ensure that Pentium processor computers (currently in customs clearance) will soon enable compatibility of the automated equipment software upgrade. In **Liberia**, IDDS compiled a list of essential items (reagents, media, and supplies) to be procured for three bacteriology laboratories in FY 2023 Q2. In **Madagascar**, IDDS handed over basic laboratory equipment (e.g., McFarland Densitometer, slide drying hotplates) and laboratory consumables (e.g., blood culture bottles, antibiotic discs for AST) to *Centre Hospitalier Universitaire* (CHU, or University Hospital Center) PZaGa and CHU Mahavoky Atsimo laboratories. In **Tanzania**, IDDS collected information on monthly stock status from Morogoro RRH and Maweni RRH, which will be used to advise the sites on managing supplies to avoid stockouts and properly interpret test results. IDDS also advocated to the assistant director of diagnostic services to fast-track the inclusion of AMR commodities in the Medical Stores Department catalogue.

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

Integration is key to the One Health surveillance approach to successfully address the significant threats posed by infectious diseases with epidemic potential to humans and animals. IDDS continued to work with partners in **Indonesia** to **align national strategic policies and pilot guidelines in support of integrated surveillance systems**. IDDS participated in a meeting to harmonize a draft regulation of the Coordinating Ministry for Cultural Affairs and Human Development, concerning four-way linking of disease surveillance systems. The regulation has since been ratified and signed by the Coordinating Minister. IDDS also participated in a coordination meeting to evaluate the *Sistem Informasi Zoonoses dan Emerging Infectious Diseases* (SIZE, or System for Zoonotic and Emerging Infectious Diseases) and plan for its national expansion. At this meeting, stakeholders decided that SIZE will add capabilities for monitoring leptospirosis, rabies, anthrax, and avian influenza, as well as complete upgrades for interoperability with other information systems. Finally, IDDS continued its pilot of integrated surveillance guidelines for leptospirosis in the Demak District by holding a meeting during which stakeholders discussed the design of cross-sectoral integrated surveillance and collected human and animal specimens as well as soil and water samples for leptospirosis testing.

Table 2: Project outputs related to strengthening surveillance systems for FY 2023 Q1 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	105		76			29
SOPs, plans, and guidelines developed or revised	4		2	1		1
TWG meetings held	20	3	6	4	3	4
Supervisory visits conducted	0					
Pilots conducted	3		1	1	1	
Persons mentored	53		53			
Countries ¹						
Cameroon	•			•		•
DRC		•				
Ethiopia						
Guinea						
Indonesia		•		•	•	
Kenya					•	
Liberia						
Madagascar						
Mali						•
Philippines						
Senegal			•			
Tanzania						
Uganda						
Vietnam			•			

TWG=technical working group¹ Countries listed are those that contributed to specific outputs in Q1 FY 2023

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

IDDS continued to work with countries to **improve data management and analysis** to strengthen surveillance systems for priority pathogens and AMR. In **Ethiopia**, IDDS and EPHI hosted a three-day workshop to clean, analyze, and interpret AMR surveillance data and produce the annual AMR Laboratory Surveillance Implementation Technical Report. This report will not only inform key stakeholders, but also the submission to WHO’s Global Antimicrobial Resistance and Use Surveillance System. In **Guinea**, IDDS provided continuous support to AMR surveillance sites to ensure data were collected and submitted to the central level of INSP on a weekly basis. The project also provided monthly Internet data to the AMR surveillance sites. In **Kenya**, IDDS provided technical and logistic assistance to the National Antimicrobial Stewardship Inter-Agency Committee (NASIC) secretariat to solicit data from 17 human health AMR surveillance sites and to convene a meeting to review, validate, and analyze AMR data collected by the sites between 2019 and September 30, 2022. During the

meeting, 25 participants (8 female) verified the completeness and accuracy of records and developed a National AMR Surveillance Report for 2022. IDDS then assisted NASIC to submit the final data to WHO GLASS and produced a bulletin that integrated the key information on AMR resistance patterns across the 17 human health AMR surveillance sites with survey-based AMR surveillance data from the animal health sector. Finally, IDDS began working with the National Public Health Laboratory (NPHL) and NASIC to configure the Central Data Warehouse (CDW) and the WHONET files received from the sites to allow for a seamless upload of data from the surveillance sites into the CDW, which was identified as a major challenge during the national AMR surveillance data review and validation workshop.

To **raise awareness of AMR as a global public health threat**, IDDS convened and participated in highly visible events during WAAW in November 2022. In **Cameroon**, IDDS provided technical and financial support to national AMR and One Health stakeholders in organizing campaigns during WAAW 2022, including a roundtable discussion on preventing AMR, a workshop for veterinary and medical health professionals on the importance of microbiological diagnostics in preventing AMR, and a scientific conference for the Cameroon Association for Medical Laboratory Sciences. In **Kenya**, IDDS promoted (in print and online) its AMR e-learning course during the WAAW national symposium and launch in Nairobi, which was attended by 144 people (60 female) and another estimated 300 virtual participants. IDDS also participated in national planning meetings and supported five counties to organize events throughout WAAW, helped the NPHL develop and design materials for publicizing WAAW, and provided technical assistance to NASIC for distributing the National AMR Surveillance Report of 2022 during WAAW. With logistic support from IDDS, nearly 900 health workers completed continuing medical education that promoted antimicrobial stewardship, and two surveillance sites were able to send their laboratory staff to participate in the national WAAW launch and share outcomes of their AMR surveillance work. In **Tanzania**, IDDS collaborated with partners and the MoH to host the WAAW launch event in Dodoma and provided financial and logistic (e.g., transport and accommodation) support to enable staff from the IDDS-supported sites to participate in and showcase IDDS's work at the National AMR Symposium in Dar es Salaam. The project provided financial support to print 10 copies of the new NAP for AMR (2023–2028) for use at the WAAW launch event and 250 copies of AMR books for use at the National AMR Symposium.

Responding to EVD

In **DRC**, IDDS shipped 75 EVD Zaire GeneXpert (GX) cartridges from INRB-Goma to Beni. IDDS facilitated the transportation of 16 specimens through commercial flights from INRB sentinel sites (i.e., Beni and Butembo) to the INRB-Goma laboratory for testing, confirmation, or quality control. Upon receipt, IDDS provided technical assistance to INRB-Goma for checking the quality of transported specimen packages. Following a request from the INRB for assistance, IDDS engaged the United Nations Humanitarian Air Service (UNHAS) to transport specimens from the 12th (February 2021 to May 2021) and 13th (October 2021 to December 2021) EVD outbreaks, which are currently stored at the INRB sentinel sites in Beni and Butembo, to the INRB-Goma laboratory. This will ensure that the specimens receive appropriate cold storage and biosafety/biosecurity protections. IDDS has made a payment to UNHAS, and the shipment will occur in FY 2023 Q2 after isothermal packing materials arrive at the sentinel sites.

In **Kenya**, IDDS convened and led 10 2-day trainings for a total of 318 health care workers (131 female) from 10 high-risk counties on specimen collection from suspected EVD cases, packaging, and transport.

To provide health care workers in testing laboratories and counties with standard guidance and reference tools, IDDS is working with the laboratory subcommittee of the national Ebola preparedness technical coordination committee to develop, design, and print an Ebola preparedness laboratory testing strategy and 10 associated SOPs and job aids. IDDS participated in preparedness coordination meetings, incident management meetings, and laboratory subcommittee meetings related to EVD outbreak management, as well as a week-long practical session on EVD case management, infection prevention and control, and laboratory procedures. Finally, to increase the country's preparedness to respond to EVD, IDDS assisted with training 21 laboratory staff (11 female) over 2 different 2-day sessions to receive, process, test, and report results of suspected Ebola specimens using polymerase chain reaction (PCR) techniques and required biosafety and biosecurity measures.

In **Uganda**, IDDS staff provided technical assistance and participated in several EVD response coordination meetings to address the ongoing outbreak. Uganda also disseminated Situation Reports on a regular basis to update IDDS HQ on EVD status. In addition, coordination meetings were held with IDDS Tanzania to share learning and coordinate on cross-border activities.

Responding to mpox

IDDS supported the Government of **Cameroon** to finalize and validate its strategic plan for the prevention and control of mpox—a document that will guide immunization and outbreak management and reinforce the surveillance system through a multisectoral One Health approach. In alignment with the strategic plan, IDDS supported Cameroon's Ministry of Public Health to finalize operational guidelines for mpox surveillance that will provide SOPs and tools to guide epidemiological surveillance of the disease at all levels of the health pyramid. IDDS also provided technical and financial support to three mpox outbreak investigations and responses conducted in the Littoral, Southwest, and Northwest regions of Cameroon to limit spread at the community level, which enabled appropriate management of cases and establishment of preventive measures to control the spread. Finally, IDDS supported Cameroon's National One Health Platform to celebrate World One Health Day on November 3, 2022, by organizing a One Health press briefing on Cameroon's preparedness to block the spread of mpox, with the participation of 26 web editors, press writers, and representatives of TV and radio stations.

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 2023 Q1, IDDS supported three countries in COVID-19 specimen transportation, training and technical assistance, and procurement of essential equipment and supplies: **Guinea, Mali, and the Philippines**. 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. 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.

IDDS provided **technical assistance, training, and ongoing mentorship** to assist the **Philippines'** laboratory network in responding to the COVID-19 pandemic. IDDS conducted 2 trainings on specimen collection, handling, and transport for 60 participants (44 female) and 2 trainings on quality respirator fit test for 52 participants (38 female).

IDDS continues its ongoing **support for specimen collection and transport** in the **Philippines**. IDDS transported 4,699 specimens for reverse transcription PCR tests from 40 collection sites to testing sites in the 6 IDDS-supported provinces (Bulacan, Cavite, Isabela, Laguna, Palawan, and Rizal). In addition, IDDS transported 877 specimens for genome sequencing from 10 collection sites in IDDS-supported provinces (Bulacan, Cavite, Laguna, Palawan, and Rizal) to the national capital region. Mobile swabbers placed in the 5 IDDS-supported provinces (Bulacan, Cavite, Isabela, Laguna, and Rizal) collected 2,471 specimens for PCR tests and rapid antigen tests. In Palawan province, IDDS provided transportation for the provincial laboratory staff who engaged in the mobile specimen collection activity. With IDDS's support, the province collected 181 specimens for PCR tests and rapid antigen tests.

During FY 2023 Q1, IDDS continued its **support of site-level supervision and ensuring quality laboratory services**. In **Mali**, IDDS provided logistics support and technical assistance to the *Direction Générale de la Santé et de l'Hygiène Publique* (General Directorate of Health and Public Hygiene) to hold two workshops for integrating information systems and validating subnational databases. During the two workshops, IDDS and representatives from the *Direction Générale de la Santé et de l'Hygiène Publique*, INSP, and the subnational sites included in the analysis assessed the quality of COVID-19 data by comparing subnational datasets to the national database and checking for discrepancies. Discrepancies were reconciled, and databases at all levels were revised and cleaned.

IDDS continued its **support for equipment maintenance** in **Guinea** by contracting Cepheid to service GX instruments that were out of order or malfunctioning. IDDS purchased two GX modules for the Siguri prefectural hospital. A local Cepheid engineer traveled to the site and installed the new modules to the GX instrument on October 14 and 15, 2022. The engineer recommended that the hospital ensure that GX diagnostics are performed by qualified technicians to minimize the risk of instrument malfunction, and that users maintain the instrument failure logs.

Finally, IDDS continued to **support procurement needs for essential COVID-19 supplies** in **Mali** and the **Philippines**. In **Mali**, although IDDS had completed all planned procurements in FY 2022, the project identified sufficient cost savings to support additional procurement of COVID-19 genomic sequencing commodities. With these cost savings, IDDS placed an order for laboratory commodities, equipment, and reagents that will support the ability of the INSP to carry out genomic sequencing of SARS-CoV-2. These included cryotubes, pipettes and tips, mini-centrifuges, buffers, and primers, among others. In the **Philippines**, IDDS purchased 5,000 viral transport media, of which 2,500 were donated to Bulacan province and 2,500 were returned to the vendor because the expiry date was too close. The vendor shipped the replacement items in December 2022, which IDDS will distribute to supported provinces upon delivery to the IDDS office. IDDS provided financial support for the shipment of GX cartridges from Manila to Palawan province and delivered whole genome sequencing reagents, which can support approximately 2,000 tests, to the IDDS-supported provinces (Bulacan, Laguna, Cavite, and Palawan).

Integrated Disease Surveillance and Response

In **Cameroon**, IDDS provided technical and financial support to the Regional Centers for Epidemics Prevention and Control for the Southwest Region, to establish a regional IDSR mentorship/coaching program. IDDS trained 21 people (12 female), including 18 district surveillance focal points, on coaching approaches to improve IDSR indicators in the Southwest Region. This activity was co-funded by both IDSR and mpox funds. Surveillance focal points have been given monthly phone credits to follow up

regularly with health facilities about weekly IDSR data reporting and participate in weekly online data review meetings at the regional level. These focal points have also been added to a community of practice WhatsApp group in which they can collaborate and share best practices and challenges. This is a three-month pilot mentorship/coaching program that will be evaluated to assess the impact on the IDSR surveillance performance of the Southwest Region.

In **Senegal**, IDDS conducted IDSR trainings in Goudiry, Kidira, and Dianke Makha districts in December 2022. Seventy-six people were trained (38 female). In **Uganda**, IDDS met with WHO and MoH to plan for an upcoming training of trainers and agreed that IDDS will support IDSR capacity building in Buikwe District beginning in FY 2023 Q2.

President’s Malaria Initiative

Based on gaps identified during WHO’s midterm malaria program review in **Cambodia**, IDDS developed a proposed laboratory assessment work plan and presented it to WHO. The proposed work plan includes an assessment of the molecular laboratory network at the provincial level, technical assistance for improving molecular testing for malaria (including species confirmation and drug resistance), technical assistance for reviewing SOPs for malaria slide bank preparation (in advance of a national competency assessment), technical assistance to the National Center for Parasitology, Entomology and Malaria Control (CNM) to establish an online proficiency program for malaria microscopy, and technical support to CNM to participate in the ISO 15189 laboratory accreditation process. By CNM’s request, IDDS also included PCR activities for plasmodium species identification and drug resistance testing in the work plan to improve subnational capacity in microscopy and help CNM increase PCR capacity at this level.

Tuberculosis

IDDS is implementing programs globally to strengthen TB diagnostic networks with both Core and field funding from the United States Agency for International Development (USAID). Through its work across 15 countries in FY 2023 Q1, IDDS enhanced capacities of national and regional reference laboratories and built capacity to detect *Mycobacterium tuberculosis* (MTB), drug-resistant (DR) TB, multidrug-resistant (MDR) TB, and extensively drug-resistant (XDR) TB by introducing and expanding the use of rapid molecular diagnostic tools.

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

This quarter, IDDS prepared for and conducted high-quality TB diagnostic network assessments (DNAs) and laboratory spatial analyses; filled gaps in the TB SRS; expanded use of GX, Truenat, and TB diagnostic connectivity solutions; improved quality, strengthened leadership and management, and facilitated cross-sectoral collaboration across TB diagnostic networks; continued to engage the private sector; and contributed to the evidence base through operational research studies and thought leadership.

IDDS continued **implementation of its flagship DNA** to understand and identify gaps in existing TB diagnostic networks through planning and assessment activities in **DRC, Malawi, and Pakistan**, where the project recruited and contracted about 25 international consultants and 25 local consultants to support the 3 DNAs. In **DRC**, IDDS provided self-assessment training to National TB Program (NTP)

officers on use of the TB-NET tool and guided them to use the tool to evaluate the current status of the TB diagnostic network (37 people, including 10 female NTP staff, attended the training). In **Malawi**, following the DNA self-assessment exercise held in FY 2022 Q4, IDDS, in collaboration with the National TB and Leprosy Elimination Program (NTLEP), hosted a virtual meeting to disseminate the findings to 15 participants. IDDS then prepared for the DNA verification visits that will take place in FY 2023 by recruiting local and international assessors, developing a site verification itinerary, consolidating policy documents, and notifying selected sites. Planning for **Pakistan's** DNA continued, with all components scheduled to take place in FY 2023 Q2.

To understand the capacity of the diagnostic network in **Nigeria**, IDDS provided financial support for laboratory assessments at 40 sites across 6 states. The assessments included analysis of the capacity for drug susceptibility testing (DST).

IDDS continued or completed **laboratory network spatial analyses (LNSAs)** in seven countries this quarter. In **Burma**, IDDS shared the LNSA report with NTP and had an opportunity to explain the process, findings, and recommendations from the report. In **Ethiopia**, IDDS completed the spatial data analysis for placement of GX 10-color instruments and relocation of GX 6-color instruments and began developing a draft report to submit in FY 2023 Q2. In **DRC**, IDDS is conducting a spatial analysis exercise to guide the placement of GX, Truenat, and X-ray instruments and improve linkages between diagnostic centers and treatment centers. In **Malawi**, the spatial analysis team also conducted hub and spoke analysis of IDDS-supported sites to model revised specimen referral routes incorporating the newly procured GX instruments. In **Tanzania**, IDDS completed the spatial analysis for placement of 6-color GX instruments and finalized an analysis report. IDDS also began preparatory activities for upcoming LNSAs in **Malawi** and **Zimbabwe**, which will begin data collection in FY 2023 Q2, and completed scoping development and data collection for the **Uganda** spatial analysis. LNSAs in **Ethiopia, Uganda, Malawi, and Zimbabwe** expanded scoping, data collection, and data analysis to incorporate the use of rapid molecular diagnostics that detect resistance to both first-line and second-line antibiotics using GX MTB/XDR cartridges and Truenat MTB/rifampicin (RIF) cartridges.

In **Burma**, IDDS continued to fill gaps in the **specimen transport system** in the Yangon region while continuing discussions with partner organizations to explore the feasibility of other approaches, such as exploring the inclusion of TB self-help groups and civil society organizations to support specimen transport. IDDS also provided in-person technical assistance to reduce the workload of existing resources at the National TB Reference Laboratory (NTRL) facility; IDDS diagnostic specialists helped prepare specimens for liquid culture, inoculation, and confirmation testing, in compliance with NTRL guidelines and SOPs.

In seven countries, IDDS **improved TB diagnostic connectivity solutions**. In **Bangladesh**, where partners continue to scale Truenat implementation, IDDS is working on logistics with the subcontractor SystemOne to install connectivity software for Truenat instruments. In **Cambodia**, IDDS completed DataToCare (DTC) connectivity at one GX laboratory and completed field visits to three other sites to confirm proper connection with GX and discuss connectivity challenges with system users. IDDS configured Truenat to DTC at two sites and is working to resolve issues with test results not properly sent from Truenat instruments to DTC before expanding configuration to other Truenat sites. IDDS also co-coordinated the process to establish interoperability between DTC and the TB Management Information System at the national level—an improvement that will synchronize the two systems. In **Mozambique**, IDDS completed the connectivity installation of 25 new GX instruments and started

conducting site visits to monitor GX connectivity. In the **Philippines**, IDDS re-started connectivity support for 50 GX sites that had participated in an earlier pilot project. In **Tanzania**, IDDS completed upgrading GxAlert to Aspect and trained 26 staff, including super-users, on the analysis and use of TB data through the Aspect system. The Aspect system can connect to other diagnostic devices and laboratory information systems, which will enhance real-time TB data sharing between laboratories and clinicians and ensure timely linking of TB patients to treatment facilities. Finally, in **Zimbabwe**, IDDS connected 144 of 176 GX instruments and reported increased connectivity (peaking at 74 percent of all GX instruments) after conducting site visits.

IDDS implemented activities to **strengthen leadership and management of the TB diagnostic network** in seven countries in FY 2023 Q1. In **Bangladesh**, during the country's ninth Joint Monitoring Mission, IDDS collected and processed data and provided recommendations to NTP about how to strengthen the TB diagnostic network. IDDS also assessed the capacity of NTP staff to perform preventive maintenance of TB equipment and participated in workshops held by NTP to revise and update the National TB Strategic Plan (2021–2025). Finally, IDDS finalized SOPs for line probe assay, extrapulmonary TB, and culture and DST and distributed them to NTRL and five regional TB reference laboratories (RTRLs). This activity contributed to building NTRL capacity to lead the TB diagnostic network by improving quality assurance and monitoring and supervision for performance improvement. In **Burma**, IDDS conducted a technical review of TB laboratory biosafety and biosecurity assessment tools, training materials, and training video clips and disseminated those materials to partner organizations. In **Cambodia**, IDDS developed the detailed implementation plan, diagnostic algorithm, and training materials for GX I0-color implementation, and disseminated the TB and diabetes mellitus situation analysis report to inform the Center for TB and Leprosy Control (CENAT) and stakeholders about the successes and lessons learned from a bidirectional screening program in five operational districts. In **DRC**, IDDS worked with consultants and NTRL staff to integrate all stakeholders' inputs into the NTRL Strategic Plan 2023–2028 and provided financial support to implement the provincial laboratory supervision plan for lower-level laboratories. In **India**, IDDS revised the supervision, monitoring, and evaluation package and jointly evaluated its implementation in one intermediate reference laboratory (IRL). IDDS also developed the TB laboratory biosafety manual and its monitoring mechanisms and shared it with National Reference Laboratory (NRL) experts for review. Finally, the project received self-assessments (completed using an IDDS-developed grading tool) from 28 IRLs, of which 7 were selected for verification through on-site visits, 1 of which took place in FY 2023 Q1. In **Malawi**, IDDS participated in an NTLEP-convened TB guideline review with stakeholders in Liwonde, which informed a revised algorithm. In **Tanzania**, IDDS provided financial, technical, and logistic support to enable 30 staff to participate in a TB laboratory TWG meeting, held in Morogoro, aimed at strengthening the capacity and quality of testing in 4 zonal TB laboratories.

IDDS worked to **improve QMS** in **Bangladesh** and **Pakistan**. In **Bangladesh**, IDDS held a two-day workshop to finalize training materials and a QMS checklist that will be used by NTRL for monitoring and supervision of RTRLs. In **Pakistan**, IDDS continued providing a 12-module QMS training to 50 NTRL staff (12 female), provided internal audit training for 12 participants (5 female), and supported the adaptation of technical and management SOPs, guidelines, and materials required for ISO 15189 accreditation at 4 selected laboratory sites.

IDDS **facilitated multisectoral collaboration** in **Burma** and **India** to improve linkages between diverse diagnostic stakeholders across the health system. In **Burma**, IDDS organized all the learning and training materials into a learning package that can be used by TB laboratories and laboratory technicians.

The package includes guidelines, SOPs, manuals, and training materials. IDDS advocated for the Myanmar Anti-Tuberculosis Association (MATA) to take on the learning package, because MATA is the only professional organization working on TB in Burma. In **India**, IDDS provided technical and managerial support in organizing the National Experts Consultation for the “Professional Associations and Civil Society Organizations” component of NAP-AMR 2.0 (2023–2027). IDDS also compiled the inputs received from the previous consultations (human health and research components) and developed a meeting report for the National Center for Disease Control (NCDC). IDDS held a preliminary discussion with the state of Sikkim to assess and understand the need for support to develop a State Action Plan on Containment of AMR.

IDDS continued support to the Central TB Division to engage extensively with the **private sector** in **India** through the “One-stop TB diagnostic solution” model for improving the TB/DR-TB diagnostic care cascade. IDDS regularly monitored and communicated with the engaged private sector laboratory, Thyrocare, to address challenges in specimen collection and transportation, payment initiation, and data entry. IDDS is facilitating data collection and analysis for both the baseline assessment and mid-course assessment of the model’s impact. With the help of a media agency, IDDS also supported the production of videos showing the model’s impact from patients’ and stakeholders’ perspectives. Beyond the one-stop model, IDDS is also working to identify and advance other opportunities to engage private sector laboratories in TB diagnosis and care. In FY 2023 Q1, IDDS assessed private sector laboratories in 13 states to determine their suitability to become certified by the National Tuberculosis Elimination Program (NTEP) for culture and DST.

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 and expand the use of new TB diagnostic tools, bolster the diagnostic capacity of laboratories and laboratory staff, and increase access to quality chest X-rays (CXRs).

In three countries, IDDS pursued **key refurbishments** that will allow laboratories to provide uninterrupted services and improve laboratory safety. In **Bangladesh**, IDDS refurbished a training room and installed a Mycobacterium Growth Indicator Tube at Khulna RTRL, enabling the laboratory to begin performing liquid culture. IDDS also completed procurement and installation of 50 uninterruptible power supply systems to selected GX sites, which will provide power to enable the operation of the GX equipment when electricity supply is interrupted. In **DRC**, IDDS is enhancing the laboratory waste management system at NTRL by replacing the incinerator to properly handle waste; the new incinerator will be installed in FY 2023 Q2. IDDS also procured personal protective equipment, trash bins, and other supplies for waste management for Lubumbashi Provincial Laboratory and Kinsangani TB Laboratory to reinforce biosafety and waste management and to perform all necessary tests while preventing the risk of contamination. In **Malawi**, IDDS completed about 40 percent of the refurbishment work to the X-ray facility at Ekwendeni Mission Hospital and procured and delivered a Delft Light Full Kit ultra-portable X-ray instrument, which will be installed when refurbishments are complete.

IDDS continued to **equip laboratories with GX instruments and other supplies** needed for TB and DR-TB detection. In **Burma**, IDDS procured five GX instruments and determined the power supply specifications in preparation for installation. In **Cambodia**, IDDS procured 3 I0-color GX instruments and 1,320 GX MTB/XDR cartridges and helped NTRL coordinate the donation of medicines (bedaquiline and delamanid) through the National Institute of Allergy and Infectious Diseases donation

program. In **India**, IDDS prepared a draft list of all consumables required for diagnostics services at TB culture and DST laboratories in NTEP, based on discussions with NRLs and IRLs, to inform the development of a forecasting tool. In **Malawi**, IDDS procured three GX 10-color instruments, including a 16-module instrument, which was delivered in FY 2023 Q1. IDDS also adapted GX MTB/XDR and 10-color GX super-user training materials to support the upcoming training of laboratory staff on the use of these new instruments.

In **Bangladesh** and **Cambodia**, IDDS **delivered essential trainings on new diagnostic TB tools and approaches**. A total of 13 microbiologists, medical technologists, and laboratory assistants (2 female) in **Bangladesh** completed the IDDS training on extra-pulmonary TB testing and stool testing to improve quality detection of TB, including childhood TB. IDDS also organized 38 orientation sessions across 38 Truenat sites for 667 health care workers (202 female) on TB screening and specimen collection and transportation. The orientation sessions are expected to increase the referral rate of the specimens to Truenat and GX sites for diagnosis and to RTRLs for culture and DST. In **Cambodia**, IDDS provided financial and technical support to CENAT to conduct a two-day training on the use of GX 10-color instruments, GX MTB/XDR technology procedures, and GX MTB/XDR test results interpretation for NTRL staff and laboratory technicians from Kampong Cham site. IDDS helped develop the training materials and train the 8 participants (6 female). In collaboration with CENAT, IDDS also conducted a DR-TB workshop to provide training on the use of XDR/MTB cartridges, build capacity of supported sites, identify key performance indicators for genotypic DST and phenotypic DST, and collect data for monitoring and evaluation.

IDDS **expanded capacity for GX EQA** in **Bangladesh**. IDDS, in collaboration with NTP, organized training on EQA for 49 medical technologists who operate GX instruments (9 female). IDDS conducted EQA tests at five GX sites to confirm that the EQA panels were suitable for testing. Following this confirmation, IDDS completed the EQA tests for the remaining 45 GX sites and uploaded the test results to the Vietnam NRL website for EQA.

To **expand capacity to detect DR-TB**, in **Pakistan**, IDDS developed the first draft of the Drug Resistant Survey (DRS) and sentinel site surveillance protocols and proposed the sample size and identified pilot sentinel surveillance sites to be part of the system. Baseline data were collected for the DRS activity and pilot sentinel surveillance sites.

IDDS directly **provided Truenat training or developed Truenat training materials** in five countries this quarter. In **Burma**, IDDS continued its engagement with MATA to implement TB diagnosis using Truenat assay, training three laboratory technicians (two female) on Truenat testing in the Yangon region. In **Kenya**, IDDS provided technical support to super-users to conduct monitoring and supervisory visits to six facilities in five counties. In response to the gaps revealed by these visits, IDDS organized a Truenat end-user refresher training in Nakuru City for 78 laboratory technicians (29 female) and 3 NTRL staff (2 female) to improve Truenat implementation and build capacity for technical assistance and sustainability. In addition, IDDS also revised the Truenat supervisory visit checklist tool to incorporate a scoring component to better monitor performance. The revised checklist was disseminated to introducing New Tools Project (iNTP) countries. In **India**, IDDS developed 10 short videos of Truenat procedures highlighting Good Laboratory Practices. In **Tanzania**, IDDS organized a Truenat super-user training workshop for 30 super-users (10 female). Posttest scores showed knowledge gain, and each super-user demonstrated competency at the conclusion of the training. In **Uganda**, IDDS-trained super-users from NTRL, who, with additional support from IDDS, led a Truenat

end-user refresher training for 39 technicians (7 female) from the 38 Truenat sites; post-test scores indicated knowledge improvement.

To support global programmatic implementation and use of Truenat instruments, IDDS developed an electronic Truenat failure log that was disseminated to iNTP countries. IDDS logged the most common encountered errors when using the Truenat system. To address these errors, IDDS collaborated with Molbio (India) to develop job aids that have been added to the Truenat training library and disseminated with the aim to reduce error rates.

Further, IDDS provided **operational planning for Truenat** implementation in two countries in FY 2023 Q1. In **Malawi**, IDDS worked with NTLEP and NTRL to choose 4 sites that will each receive 1 Truenat instrument and began procurement for 60 packages of Truenat MTB plus chips. Further, IDDS is adapting super-user/end-user training materials from other countries to the Malawi country context.

To **support quality control for Truenat testing** and measure laboratory performance, IDDS has been supporting EQA in iNTP countries that are receiving Truenat technology. IDDS partnered with SmartSpot Quality, an accredited manufacturer of validated EQA panels, to provide each Truenat site with three cycles of EQA. During FY 2023 Q1, IDDS supported six countries to complete the EQA and report their results to an online portal accessible by NTP. Scores reported in FY 2023 Q1 were as follows:

Country	Number of Truenat sites participating in EQA	Number and percent of Truenat sites receiving EQA scores by type of score				
		Pass	Acceptable	Concern	Unacceptable	No submission of EQA results
Bangladesh	38	31 (82%)	3 (8%)	1 (3%)	3 (8%)	--
Cambodia	15	10 (67%)	4 (27%)	1 (7%)	--	--
DRC	38	16 (42%)	4 (11%)	4 (11%)	13 (34%)	1 (3%)
Kenya	38	22 (58%)	5 (13%)	7 (18%)	4 (11%)	--
Uganda	38	13 (34%)	3 (8%)	--	10 (26%)	12 (32%)
Zimbabwe	19	6 (32%)	1 (5%)	2 (11%)	9 (47%)	1 (5%)

In **Bangladesh**, IDDS trained 40 staff (9 female) from the 38 Truenat sites on the EQA process and reporting procedures, and also coordinated and accompanied the USAID mission to conduct a field visit to a Truenat site in Prek Anhchanh Health Center on December 19, 2022, to review Truenat implementation at the site and discuss challenges with the Truenat implementation and compliance with the pilot protocol. **Cambodia**, **Kenya**, and **DRC** also completed their third cycles of EQA, and reports will be available in the next quarter. Finally, IDDS developed a “Practical Guide for Implementing EQA for Truenat.” This document outlines key components of an EQA process and steps to implement the

program in countries and describes lessons learned. IDDS included this guideline as a part of the super-user and EQA package for Truenat implementation.

IDDS also **increased access to quality CXRs** in two countries this quarter. In **Burma**, IDDS and Fuji Film Myanmar conducted two two-day sessions of an X-ray and computer-aided diagnosis training in the Yangon region. Seven radiographers and medical officers from MATA attended the training (four female). In **Cambodia**, IDDS developed the CXR Telegram platform training materials for Telegram users and provided virtual training to the CXR moderator team of six participants (all male) from CENAT. IDDS monitored and observed the CXR Telegram platform use. More than 180 users are actively using this platform to post the CXR images that are difficult to interpret to get advice from CXR moderators who were assigned by the CENAT director. All CXR moderators are actively responding to the users. IDDS is working with a consultant to develop the online training module and provide training on the correct reading and interpretation of CXR. IDDS also obtained a quote for procuring artificial intelligence software for CXR reading at the peripheral sites and worked with a consultant to develop an implementation plan for EQA of CXR in selected operational districts.

To **increase TB case detection among children**, IDDS continued expansion of a novel approach—the use a simple one-step (SOS) stool processing method to test stool specimens for pediatric TB diagnosis. IDDS developed an activity tracker for stool testing implementation, which can help NTPs and program implementers understand needed resources. IDDS also developed a protocol validating the use of Truenat to test stool specimens. In **Burma**, IDDS revised the research protocol for using GX Ultra for stool testing and finalized the pilot implementation plan. In **Cambodia**, IDDS worked with the CENAT childhood TB technical team to develop the detailed implementation plan, algorithm, training curriculum, and materials for stool testing implementation. In **DRC**, IDDS concluded the pilot of the SOS stool method at 24 sites after reaching the target of 500 children tested. In **Malawi**, IDDS received a certificate of ethics approval for a stool testing study and began implementation by mentoring 53 participants (13 female) across 8 district hospital sites, all of which have now begun testing stool specimens. IDDS also procured 1,000 GX Ultra cartridges to support the stool testing pilot study. In **Zimbabwe**, IDDS co-trained 26 participants (6 female) on the SOS method and will continue to support the country to scale up training, supervision, and monitoring of sites implementing the method. Finally, IDDS held a regional “master training” on the SOS stool method for participants from **Uganda, Zambia, Sierra Leone, and Zimbabwe**, six of whom (three female) qualified as master trainers to train others in the region.

As of December 2022, IDDS has seven **operational research studies** at different implementation stages in four countries (text box). IDDS is currently piloting use of Truenat MTB/RIF cartridges in nine iNTP countries. IDDS started drafting a research protocol to assess the usability, performance, and impact of these novel tools on TB indicators. During the Union World Conference on Lung Health in November 2022, IDDS presented 11 e-posters and 3 oral presentations, including in a symposium session about the Truenat implementation support package (super-users and EQA) with USAID and the Stop TB Partnership. In this session, IDDS introduced the support package for Truenat implementation at the peripheral level. In a satellite session organized by SmartSpot, IDDS shared experience in practical implementation of Truenat EQA in **Zimbabwe** and **Cambodia**.

Highlighted **Operational Research Studies:** Countries and Topics

- **Cambodia:** feasibility of Truenat implementation pilot study
- **DRC:** bacteriologically confirmed TB study
- **India:** Truenat indeterminate/invalid results, Trueprep deoxyribonucleic acid extraction studies
- **Zimbabwe:** Ultra trace calls results, clinically diagnosed TB patients using CXR and other TB clinical signs, and smear microscopy hub strategy

Table 3: Project outputs related to strengthening TB diagnostic networks for FY 2023 Q1 and the countries that contributed to these outputs

TB IR 1.1: Gaps in diagnostic networks identified and essential components supported											
	TOTAL	New Diagnostic Tools	Pediatric TB Testing	Other Testing Skills and Procedures	Equipment Maintenance	QMS	Diagnostic Connectivity Solutions	TB DNA	Laboratory Diagnostic Data Analyses	Private sector engagement	Other Diagnostic Network Topics
People trained	291	168	32			12	28	37	6		8
SOPs, plans, and guidelines developed or revised	87	7		1		79					
TWG meetings held	0										
Supervisory visits conducted	51		16	5	2	12				16	
Pilots conducted	2		2								
Assessment reports completed	4	1									3
People mentored	149	4	68	53		24					
Countries¹											
Bangladesh	•										
Burma		•									
Cambodia							•				•
Core TB		•	•	•		•		•	•		•
DRC						•					
India		•				•				•	•
Malawi			•		•						
Tanzania							•				
Zimbabwe			•	•							

¹ Countries listed are those that contributed to specific outputs during Q1 FY 2023.

Middle East and North Africa

IDDS is developing an assessment tool, based on the TB DNA, that will be used in Middle East and North Africa (MENA) countries to assess the diagnostic network capacity and preparedness for emerging and reemerging disease threats. During FY 2023 Q1, IDDS completed translation of the DNA tool to French and Arabic and is developing an electronic version using Airtable and SurveyCTO for the pilot assessment. Key features include the ability to select the language and the level of the diagnostic network so that only relevant questions are selected to improve efficiency and user experience. Further, the tool will incorporate the ability to score each question and provide a summary score for each capacity of the TB diagnostic network assessed. IDDS will plan pilot DNA assessments in two MENA countries—**Morocco** and **Tunisia**—chosen in collaboration with USAID in FY 2022 Q4. Lessons learned and best practices from the pilots will be incorporated into the final MENA DNA tool. The pilot implementation of the DNA tool is planned for early 2023, pending confirmation from USAID MENA Bureau.

Implementation Status

Work plans and deliverables submitted in FY 2023 Q1 are summarized in the tables that follow.

Work Plans Submitted and Approved in FY 2023 Q1

	Submitted/Resubmitted in Q1	Received USAID Approval in Q1
GHS	<ul style="list-style-type: none"> Cameroon: 9/28/2022, 10/22/2022 DRC: 11/11/2022, 12/20/2022 Ethiopia: 9/29/2022, 11/2/2022 Guinea: 10/6/2022, 10/22/2022 India: 10/28/2022; 12/20/2022 (to clear contingencies) Indonesia: 9/27/2022, 10/28/2022, 10/31/2022 Kenya: 9/27/2022, 10/20/2022 Liberia: 9/30/2022, 10/20/2022 Madagascar: 10/6/2022, 12/15/2022 Mali: 9/27/2022, 10/20/2022 Philippines: 10/6/2022, 10/28/2022 Senegal: 10/4/2022 Tanzania: 10/4/2022, 10/20/2022 Uganda: 9/30/2022, 12/15/2022 Vietnam: 9/29/2022 	<ul style="list-style-type: none"> Cameroon: 12/6/2022 Ethiopia: 11/21/2022 Guinea: 11/16/2022 India: 12/13/2022 (Contingent) Kenya: 11/16/2022 Liberia: 11/16/2022 Mali: 11/16/2022 Philippines: 12/6/2022 Senegal: 11/16/2022 Tanzania: 11/16/2022 Vietnam: 11/16/2022
TB	<ul style="list-style-type: none"> Bangladesh: 10/11/2022 Cambodia: 12/17/2022 DRC: 11/18/2022 India: 11/29/2022 Zimbabwe: 12/7/2022 	<ul style="list-style-type: none"> Bangladesh: 11/17/2022 Mozambique: 9/29/2022
Cross-Cutting	<ul style="list-style-type: none"> IDSR: 12/19/2022 	<ul style="list-style-type: none">

Deliverables Submitted in FY 2023 Q1

	Key Deliverables Submitted to USAID during FY 2023 Q1
GHS	16
C-19F/ARP	0
EVD	0
IDSR	0
TB	12
Total	28

Program Highlights

Global Health Security FY 2023 Q1 Achievements

CAMEROON

IDDS submitted a revised version of the FY 2023 GHS work plan to USAID on October 22, 2022 and received approval on December 6, 2022.

Quarterly Highlights

Bacteriology Diagnostics:

- None to report.

Surveillance:

- To improve awareness and understanding of AMR as a global public health threat, IDDS provided technical and financial support to national AMR and One Health stakeholders to organize an educational campaign during WAAW 2022 (November 18–24, 2022). IDDS supported the AMR Coordination Center (at NPHL) to organize a multisectoral roundtable on November 23, 2022, in Yaoundé, on the theme of “Preventing Antimicrobial Resistance Together” for the official launch of Cameroon WAAW 2022.
- IDDS showcased its contributions to the One Health National AMR Detection and Surveillance System in Cameroon during the 18th National Scientific Conference on November 25-26, 2022, hosted by the Cameroon Association for Medical Laboratory Sciences. This conference convened more than 300 medical laboratory professionals.

Mpox:

- IDDS supported the Government of Cameroon to finalize and validate its strategic plan for the prevention and control of mpox—a document that will guide immunization and outbreak management and reinforce the surveillance system through a multisectoral One Health approach.
- In alignment with the strategic plan, IDDS supported Cameroon’s Ministry of Public Health to finalize operational guidelines for mpox surveillance that will provide SOPs and tools to guide epidemiological surveillance of mpox at all levels of the health pyramid.
- IDDS provided technical and financial support to three mpox outbreak investigations and responses conducted in the Littoral, Southwest, and Northwest regions of Cameroon, which enabled the appropriate management of cases and establishment of other preventive measures to control the spread of the outbreak at the community level.

Problems Encountered and Solutions

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

Lessons Learned

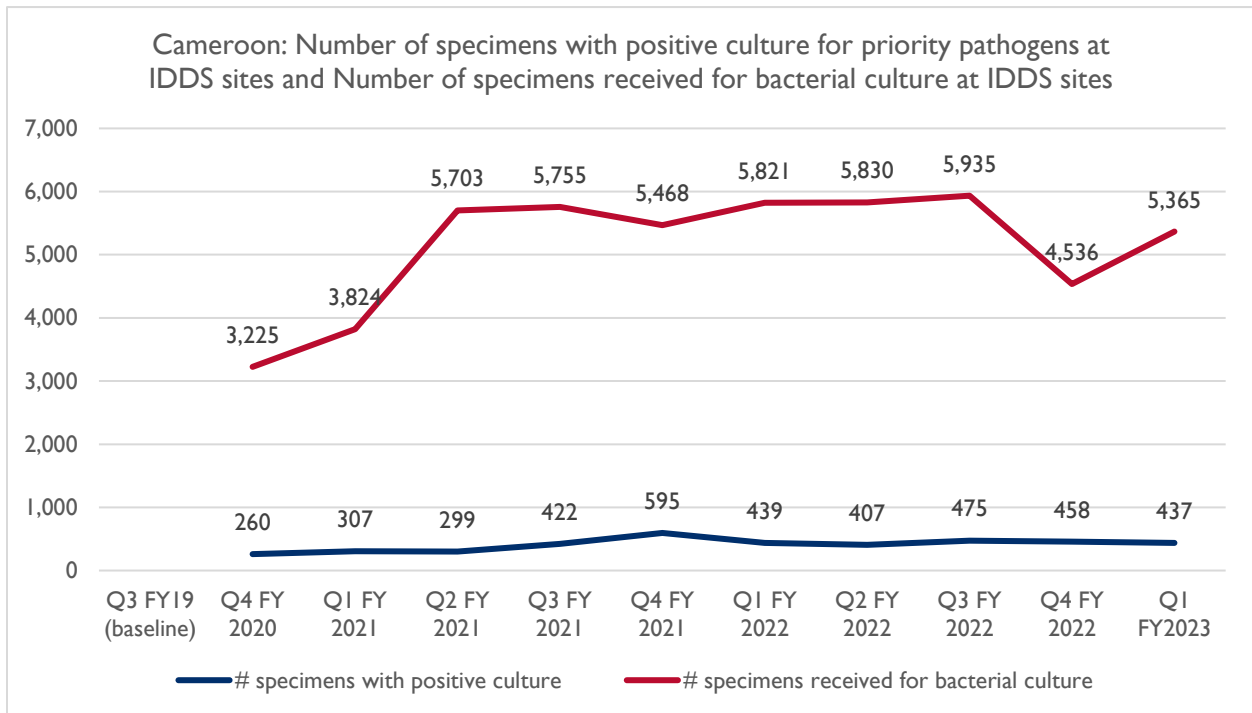
- None to report.

FY 2023 Q1 Output Results



FY 2023 Q1 Outcome Results

IDDS is strengthening the capacity for bacteriology testing in eight human health and three animal health sites, which has resulted in increased testing and detection of priority pathogens. The FY 2023 Q1 report included data from only six human health laboratories and one animal health laboratory. One of the animal laboratories did not receive any specimens in FY 2022 Q3 and two of the human health sites were not yet ready yet to report the data in FY 2023 Q1 because IDDS support to these sites began more recently. Although the data show some fluctuation in the last two quarters, the overall trend of the historical data shows an increase in the number of specimens received and the number of priority pathogens detected. Only bacterial priority pathogens listed by the national government as being of “primary concern” are reported for this indicator. The priority pathogens reported for Cameroon in FY 2023 Q1 included: *E. coli*, *Klebsiella Pneumoniae*, *Acinetobacter Baumanni*, *Staphylococcus Aureus*, *Streptococcus Pneumoniae*, *Salmonella spp.*, *Shigella spp.*, *Pseudomonas Aeruginosa*, *Vvibrio Cholerae*, and *Neisseria Gonorrhoeae*.



Additional indicator data can be found in Annex C

DEMOCRATIC REPUBLIC OF THE CONGO

IDDS submitted an EVD work plan on October 26, 2022 and submitted a revised version on November 4, 2022. USAID approved the work plan on November 22, 2022.

IDDS submitted the DRC FY 2023 GHS work plan on November 11, 2022 and a revised version on December 20, 2022. As of December 31, 2022, the work plan was pending approval.

Quarterly Highlights

Success Story:

- Successful Training of Trainers on Laboratory Skills Conducted by IDDS in the Democratic Republic of the Congo

Diagnostic Highlights:

- To improve the ability to respond to and contain disease outbreaks, IDDS reinforced the diagnostic capabilities of the INRB-Goma regional lab, which is now able to detect priority zoonotic diseases, including EVD (Sudan variant) and plague. This is a significant achievement because it enables the laboratory to detect outbreaks that were previously difficult to identify locally.

EVD Diagnostic Highlights:

- IDDS collected, analyzed, and interpreted surveillance data on the disease, with the goal of detecting and monitoring outbreaks in real time. IDDS also partnered with UNHAS to facilitate specimen transport in eastern DRC provinces, and efforts are ongoing to further strengthen the specimen transport system in this region.
- IDDS provided financing for the transport of 16 suspected EVD specimens from peripheral collection sites bordering Uganda to the INRB regional laboratory in Goma for testing. Upon receipt, IDDS provided technical assistance to INRB-Goma for checking the quality of transported specimen packages. All 16 specimens were negative for EVD.

Problems Encountered and Solutions

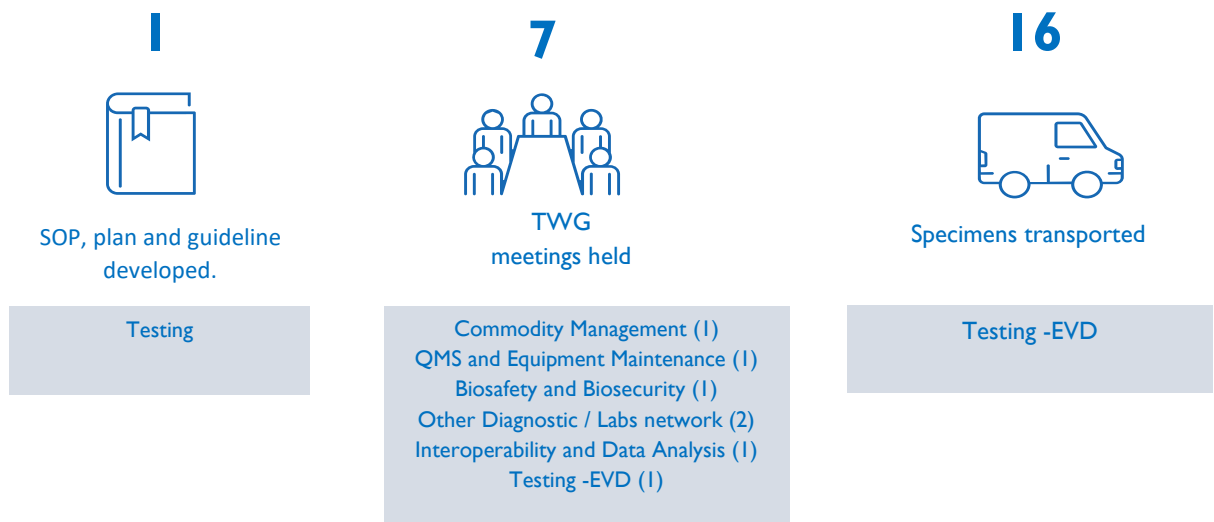
Problem	Resolution	Status
Security concerns in eastern DRC and evacuation of Goma-based IDDS staff interfered with the ability to complete work plan activities.	IDDS has taken steps to ensure staff safety and continuity of activities where possible: <ul style="list-style-type: none"> • Regular review of security information/alerts • Regular monitoring and ongoing restriction on staff movement to and out of Goma • Remote work arrangements • Arrangements with local agencies to transport specimens while the staff are away • Regular communication with the local MoH and INRB site 	Ongoing. The state of emergency in DRC has been extended by the government, and the region is being closely monitored.

Problem	Resolution	Status
The irregularity of commercial flights in eastern DRC caused repetitive delays and cancellations of specimen transport to Rodolphe Mérieux Laboratory/INRB-Goma.	An agreement has been made with UNHAS for the use of their flights.	Ongoing

Lessons Learned

- It is important to maintain effective collaboration and partnership with local stakeholders. For example, by working closely with the provincial MoH and other organizations, such as INRB-Goma and transport agencies, IDDS was able to effectively coordinate and carry out activities even when staff needed to work remotely during the evacuation. This demonstrates the value of building strong relationships with local partners and the importance of coordination in achieving successful outcomes.
- IDDS has also learned to be flexible and adaptable to implement activities with speed and flexibility when a fragile security situation allows. In eastern DRC, the security situation can be unpredictable and often necessitates rapid changes in plans or activities. By being able to quickly adapt to changing circumstances, IDDS was able to continue making progress toward its goals despite the challenges.

FY 2023 Q1 Output Results



ETHIOPIA

IDDS submitted a revised version of the Ethiopia FY 2023 work plan on November 2, 2022 and received approval from USAID on November 21, 2022.

Quarterly Highlights

Diagnostic Highlights:

- To provide technical support for AMR surveillance, IDDS conducted joint supportive supervision visits with EPHI to each of the five human health and one animal health AMR surveillance sites supported by IDDS.
- IDDS continued to improve biosafety and biosecurity measures in five human health microbiology laboratories by supporting minor site improvements, including installation of bacteriology laboratory door access control and partitioning of laboratory spaces.
- To improve quality management and strengthen AMR surveillance, IDDS began the year-long process of preparing two facilities for ISO 15189 accreditation by conducting a joint training with EPHI and laboratory personnel from IDDS-supported facilities.

Surveillance Highlights:

- IDDS supported the cleaning, analysis, and interpretation of AMR surveillance data to inform the development of the annual AMR surveillance report.

Problems Encountered and Solutions

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

Lessons Learned

- Holding trainings, supportive supervision visits, and mentorships jointly with EPHI helps effectively conserve the limited budget and ensure sustainability of practices.
- Laboratory QMSs can be significantly improved through the implementation of an intensified mentoring program tailored to each facility's specific needs and "owned" by the laboratory.

FY 2023 Q1 Output Results

19



People trained

QMS

20

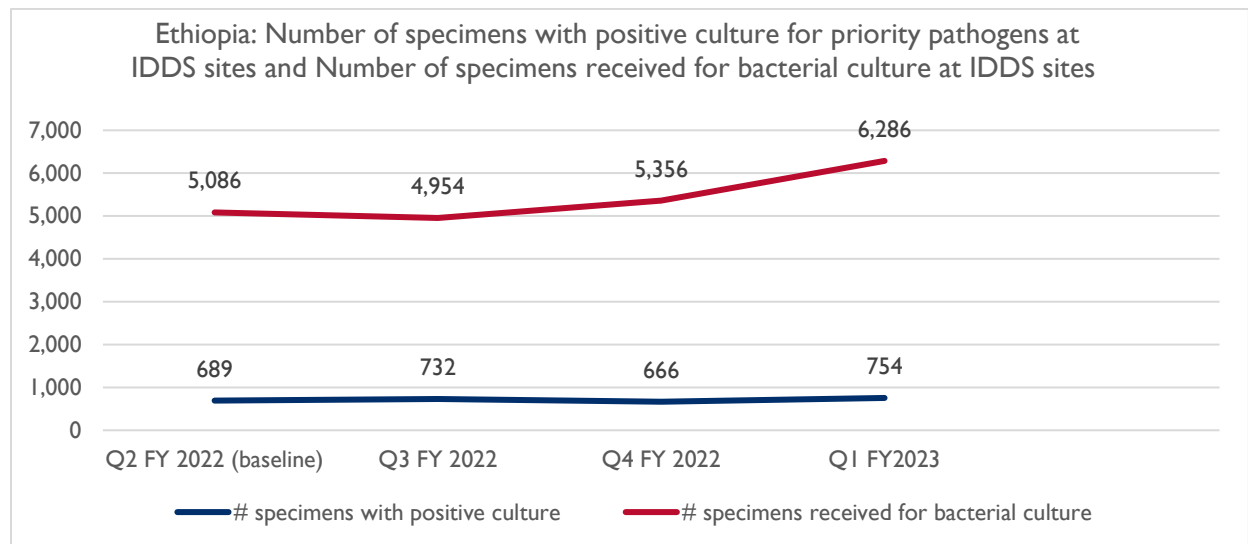


People mentored

Testing

FY 2023 Q1 Outcome Results

IDDS has strengthened capacity for bacteriology testing in five human health laboratories in Ethiopia, which has resulted in increased testing and detection of priority pathogens. The data show a positive trend both in the number of specimens received and the number of priority pathogens detected at the IDDS-supported sites since IDDS resumed the project activities in the country in FY 2022 Q2. Only bacterial priority pathogens listed by the national government as being of “primary concern” are reported for this indicator. The priority pathogens reported for Ethiopia in FY 2023 Q1 included *Staphylococcus Aureus*, *Acinetobacter spp.*, *E. coli*, *Klebsiella Pneumonia/spp*, *Pseudomonas aeruginosa*, *Shigella spp*, *Salmonella*, *Streptococcus Pneumonia (s.pn)*, and *Neisseria Gonorrhoea*.



Additional indicator data can be found in Annex C

GUINEA

IDDS submitted the Guinea FY 2023 GHS work plan to USAID on October 6, 2022 and a revised version on October 22, 2022. The work plan was approved by USAID on November 16, 2022.

Quarterly Highlights

Diagnostics Highlights:

- To support eventual improvements to AMR surveillance data collection and reporting, IDDS conducted a baseline assessment of bacteriology and serology/immunology testing capacity at Nzérékoré Regional Laboratory.
- To increase capacity to diagnose AMR, IDDS supported the SRS pilot expansion to Nzérékoré region—a forested area with poor road infrastructure located more than 1,000 km from the reference laboratory in Conakry. IDDS collaborated with UNHAS to use United Nations planes to transport specimens, thereby reducing time in transport and improving the quality of the specimens received at the reference laboratory.

COVID-19 Diagnostics:

- To improve capacity for detecting COVID-19, IDDS procured two GX modules for the Siguri prefectural hospital to restore functionality of its GX instrument. IDDS hired a local Cepheid engineer to travel to the site and install the modules, which was completed on October 14 and 15, 2022. IDDS completed all COVID-19 ARP activities in FY 2023 Q1.

Problems Encountered and Solutions

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

Lessons Learned

- Collaboration with other implementing partners can facilitate IDDS implementation.

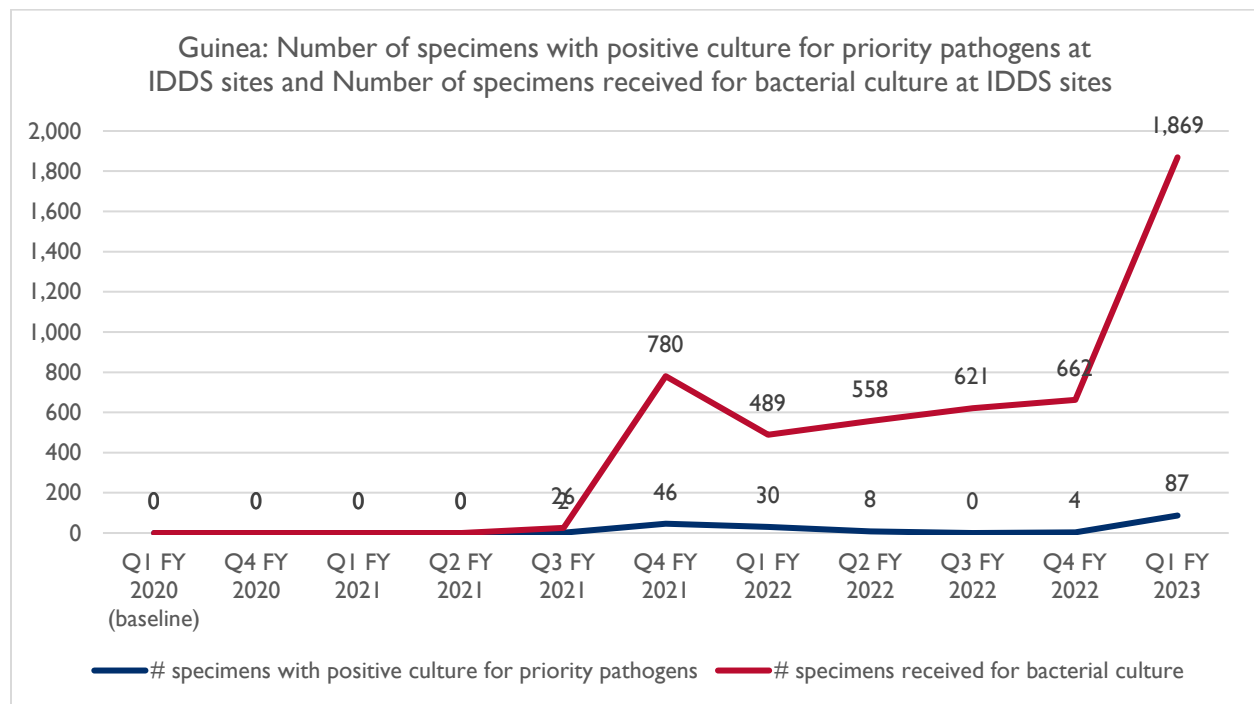
FY 2023 Q1 Output Results



FY 2023 Q1 Outcome Results

IDDS strengthened capacity for bacteriology testing in six laboratories in Guinea during this reporting period, which has resulted in increased testing and detection of priority pathogens. In FY 2021 Q3 and Q4, IDDS supported three laboratories to begin conducting bacterial culture and as of FY 2023 Q1, six laboratories are routinely conducting bacterial culture with IDDS support. Support for three of the six laboratories began in FY 2023. A seventh laboratory will be supported for bacteriology and serology testing during this FY.

Only bacterial priority pathogens listed by the national government as being of “primary concern” are reported for this indicator. During this reporting period, the majority of priority pathogens identified were either *E. Coli* or *Staphylococcus Aureus*. However, some others found included *Staphylococcus (haemolyticus, SP, lentus, xylois)*, *Klebsiella*, *Enterobacter Cloacae*.



Additional indicator data can be found in Annex C

INDIA

IDDS submitted the FY 2023 GHS work plan extending from October 1, 2022 to July 31, 2023, to USAID, and it was approved with contingencies on December 13, 2022. IDDS submitted the revised work plan and budget on December 20, 2022, and plans to begin activity implementation after full approval is received.

In preparation for work plan approval and implementation, IDDS initiated the process of identifying a consultant to support the work plan activities. IDDS worked with the USAID Mission to discuss communication with the state of Sikkim to understand the need for IDDS support for the development of a State Action Plan on Containment of Antimicrobial Resistance in consultation with NCDC, the hiring of a consultant to support the AMR Technical Support Unit, and drafting the memorandum of understanding (MOU) between NCDC, the Directorate General of Health Services, the Ministry of Health and Family Welfare, and IDDS.

Quarterly Highlights

- None to report.

Problems Encountered and Solutions

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

Lessons Learned

- None to report.

INDONESIA

IDDS submitted a revised version of the FY 2023 work plan to USAID on October 28, 2022. As of December 31, 2022, the work plan approval was still pending.

Quarterly Highlights

Success Story:

- [Indonesia Prepares to Face Future Epidemics by Institutionalizing a “One Health” Approach](#) (Agrilinks)

Surveillance Highlights:

- IDDS worked to strengthen coordination and collaboration between the central and local levels to quickly detect, prevent, and respond to zoonosis/emerging infectious diseases that have the potential to be an outbreak, by piloting cross-sectoral integrated surveillance for leptospirosis in Demak District. IDDS received testing results of leptospirosis samples from each sector (human, animal, and environment) and will analyze the results to inform pilot expansion to other regions by other implementing partners.
- To maximize the sustainability of project interventions, IDDS mapped the project’s 2019-2022 achievements to the corresponding Joint External Evaluation 3.0 technical area and presented a summary of its 2022–2023 activities to the new director of surveillance and health quarantine at MoH.

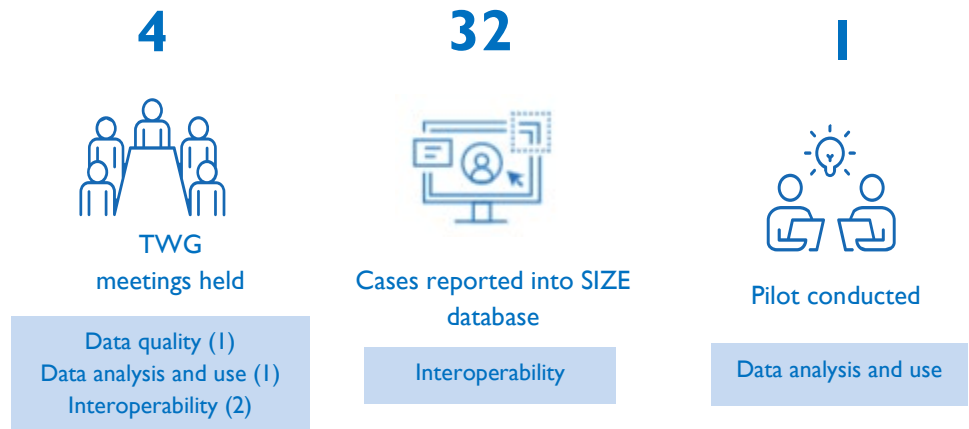
Problems Encountered and Solutions

Problem	Resolution	Status
The SIZE technical training was delayed because the SIZE application is still under maintenance, development, and testing for the national expansion to other priority zoonotic diseases. As a result, SIZE expansion to the regions will also be delayed.	The technical training on SIZE has been rescheduled to FY 2023. The module is in development.	In progress

Lessons Learned

- At the district level, community involvement is important to ensure the targeted output is achieved, as well as to ensure that the recommendations are advocated for to the head of local government.
- It is important to involve and engage with the related ministries and international development partners to ensure the sustainability of the activity/program or document that has been established for the future implementation.

FY 2023 Q1 Output Results



KENYA

IDDS submitted a revised Kenya FY 2023 GHS work plan to USAID on October 20, 2022, and received approval on November 16, 2022.

IDDS submitted an EVD work plan on October 26, 2022 and received approval on November 7, 2022.

Quarterly Highlights

Diagnostic Highlights:

- To encourage prudent use of antimicrobials and improve clinical management of infectious diseases, IDDS provided logistic assistance to convene continuous medical education sessions in four of the five IDDS-supported sites. These sessions focused on diagnostic stewardship, with the goal of strengthening prudent use of antimicrobials and reducing the emergence and spread of AMR.

Surveillance Highlights:

- IDDS provided technical and logistic assistance to validate and analyze AMR surveillance data, and then disseminate the data through the National AMR Surveillance Report for 2022. The National AMR Surveillance Report provides a standard reference document and data on the trends in AMR in the country for use by the national government, surveillance sites, and AMR stakeholders. The report will be used by national- and country-level government, clinicians, and other health workers to inform the development of national- and county-level antibiotic treatment guidelines and shape clinical practice to improve clinical treatment outcomes.
- IDDS provided technical assistance to NASIC to share AMR surveillance data from 17 surveillance sites with WHO GLASS in response to the 2022 WHO AMR surveillance data call. The data submitted to GLASS will be used to inform global policies to prevent the emergence and spread of AMR globally.

EVD Highlights:

- To reduce the risk of health workers being exposed during the process of collecting, packaging, and transporting specimens, and to ensure that each specimen reaches the laboratory in good condition to ensure quality of test results, IDDS provided technical assistance to the Government of Kenya to train health care workers from 10 high-risk counties (Bungoma, Busia, Homabay, Kakamega, Kericho, Kisumu, Migori, Nakuru, Siaya, and Trans-Nzoia) on how to safely collect, package, and transport specimens from suspected Ebola cases. A total of 318 health professionals (131 female) were trained. These included laboratory workers, clinicians (doctors and clinical officers), and nurses.
- To provide health workers in testing laboratories and counties across the country with updated standard guidance and reference tools, IDDS collaborated with the laboratory subcommittee of the national Ebola preparedness technical coordination committee to review and revise the Ebola preparedness laboratory testing strategy and associated SOPs and job aids during a workshop financed and partially facilitated by IDDS on December 15, 2022. These tools help reduce the risk of transmission to health workers and improve the integrity of specimens and test results. The contents of the guidance documents are being finalized but require formatting and distribution, which is anticipated for FY 2023 Q2.

- To build the preparedness and capacity of Kenya to safely test any suspected Ebola cases, IDDS assisted the laboratory subcommittee to train 21 laboratory professionals (11 female) from 3 national-level laboratories on how to receive, process, test, and report results of suspected Ebola specimens using PCR testing techniques and required biosafety and biosecurity measures.

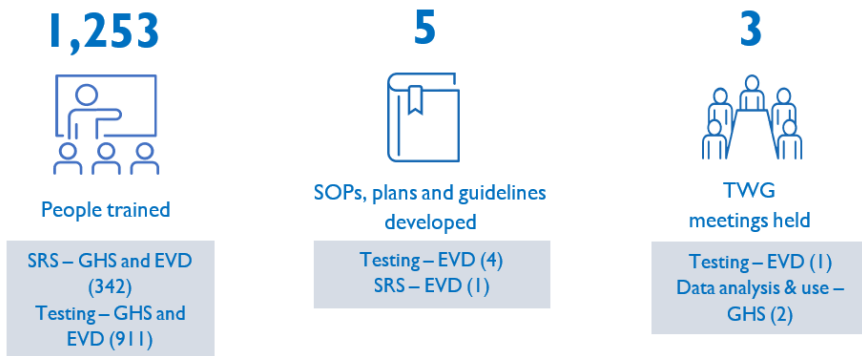
Problems Encountered and Solutions

Problem	Resolution	Status
Delays in the reconstitution of new county governments following the August 2022 general elections have delayed some of the planned activities.	The activities have been moved to FY 2023 Q2, after consultation with the county teams.	Addressed
BioMérieux has delayed conducting the scheduled preventive maintenance of organism identification and AST equipment in Kitale and Malindi.	IDDS continues to engage the vendor to resolve the longstanding issue. The vendor has committed to servicing the equipment by FY 2023 Q2.	In progress
WHONET files require significant configuration before being uploaded to the CDW, which can lead to distortion or loss of data and requires a significant level of effort.	IDDS is working with the NPHL and NASIC to configure CDW and WHONET files received from the sites to allow for seamless upload from the surveillance sites to the CDW. This activity will continue through FY 2023 Q2 and Q3 to ensure smooth uploading of data from the WHONET files into the CDW.	In progress

Lessons Learned

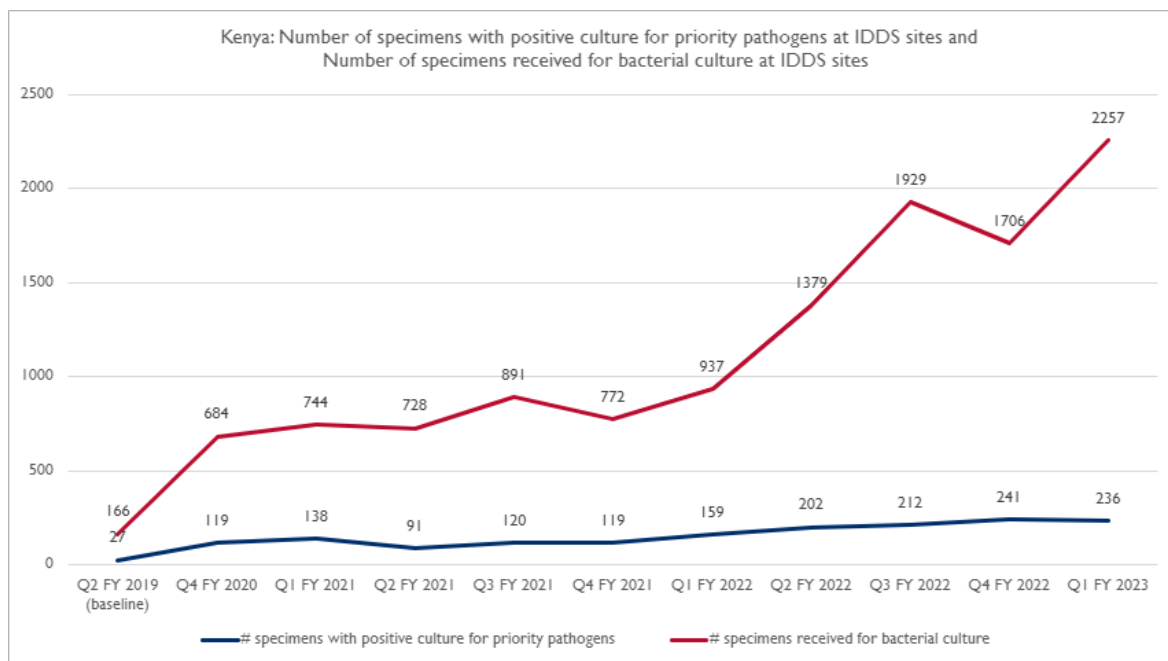
- Early collation, review, and cleaning of AMR surveillance data is critical to avoid last-minute challenges. The national AMR surveillance data cleaning, validation, and analysis workshop in 2022 was held a few days before submission of data to WHO GLASS and two weeks before publishing the National AMR Surveillance Report. This left IDDS and the NASIC secretariat with limited time to resolve and reconcile any data challenges or discrepancies. In 2023, IDDS plans to engage NASIC, the surveillance sites, and partners early to ensure that there is adequate time to resolve outstanding issues before submitting data to GLASS and publishing the National AMR Surveillance Report.
- It is important to have surveillance sites represented in the national AMR surveillance data review, cleaning, validation, and analysis workshop. The four sites that were represented in this year's workshop played an important role in clarifying actual practices in relation to the data captured in the system and helped accelerate the data cleaning process. In the future, IDDS plans to involve more surveillance sites in the data cleaning and validation process.

FY 2023 Q1 Output Results



FY 2023 Q1 Outcome Results

IDDS has strengthened capacity for bacteriology testing in five laboratories, which has resulted in increased testing and detection of priority pathogens. Only bacterial priority pathogens listed by the national government as being of “primary concern” are reported for this indicator. In Kenya, this includes *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Acinetobacter spp.*, *E. coli*, *Klebsiella spp.*, *Pseudomonas aeruginosa*, *Salmonella spp.*, and *Shigella spp.*



Additional indicator data can be found in Annex C

LIBERIA

IDDS received approval for the FY 2023 GHS work plan (which had been submitted in September) on November 16, 2022.

Quarterly Highlights

Diagnostic Highlights:

- To increase demand for bacteriology and improve utilization of newly available laboratory services, IDDS conducted engagement meetings with clinicians at Phebe Hospital. This is significant because communication with clinicians is a critical component of improving specimen flow to the laboratory. When clinicians understand the importance of collecting specimens at the right time and how it will impact patient management, they work closely with the laboratory teams.
- To continue improving the quality of services at supported laboratories, IDDS provided on-site mentorship on quality indicators, equipment maintenance, and the development of corrective and preventive action plans.

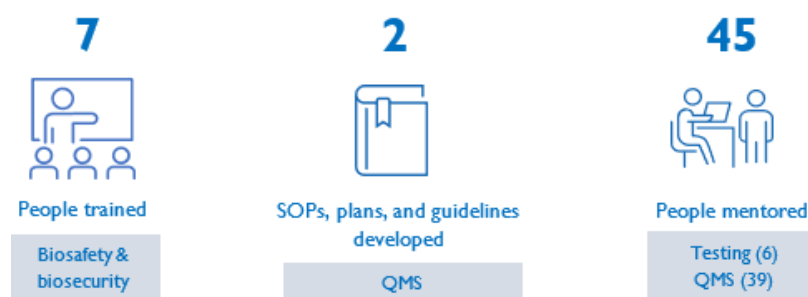
Problems Encountered and Solutions

Problem	Resolution	Status
The poor road infrastructure affected timely implementation of SLIPTA audits.	IDDS held discussions with NDD and the NPHL and resolved to conduct any audits during the dry season. No audits will be held during the rainy season.	Addressed

Lessons Learned

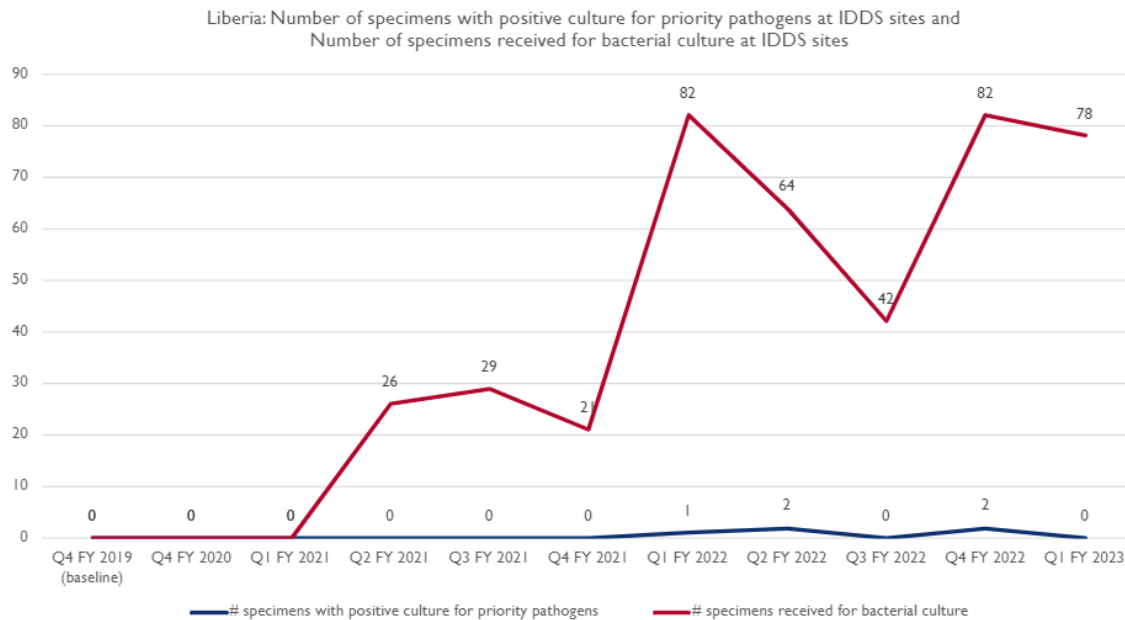
- IDDS should coordinate QMS implementation through NDD to address key challenges that are directly affecting partner activities, such as staffing challenges. IDDS and the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (German Agency for International Cooperation) convened a meeting with NDD in which these issues were discussed, and NDD took responsibility of the gaps that it needs to address.
- Continuously engaging clinicians with awareness messages on bacteriology is needed to improve specimen flow to the laboratories, as seen in Phebe Hospital.

FY 2023 Q1 Output Results



FY 2023 Q1 Outcome Results

IDDS has strengthened capacity for bacteriology testing in three laboratories, beginning in FY 2021 Q2, which has resulted in increased testing. However, the number of specimens received remains low, as does the detection of priority pathogens. Only bacterial priority pathogens listed by the national government as being of “primary concern” are reported for this indicator. In Liberia, this includes *Salmonella typhi*, *Vibrio cholerae*, *Neisseria meningitides*, *Streptococcus pneumoniae*, and *Haemophilus influenzae type b(Hib)* *Shigella dysenteriae*.



Additional indicator data can be found in Annex C

MADAGASCAR

IDDS submitted the Madagascar FY 2023 GHS work plan on October 6, 2022 and submitted a revised version on December 15, 2022. As of December 31, 2022, work plan approval was still pending.

Quarterly Highlights

Diagnostic Highlights:

- To address previously identified gaps in the ability of basic health centers to collect and refer specimens for testing, IDDS assessed the knowledge of staff from four basic health care facilities in the Boeny region during supportive supervision visits to evaluate their understanding of these activities. IDDS then held a workshop to share the findings of the supportive supervision visits and provided a training on specimen collection, packaging, and referral for 44 laboratory staff from the Boeny region (24 female).
- To equip laboratories with key supplies needed to detect priority pathogens, IDDS handed over basic laboratory equipment (e.g., McFarland Densitometer, slide drying hotplates) and laboratory consumables (e.g., blood culture bottles, antibiotic discs for AST) to CHU PZaGa and CHU Mahavoky Atsimo Mahajanga laboratories. Of note, this provision means that CHU Mahavoky Atsimo Mahajanga will now be able to perform bacteriology analyses, becoming the 13th health center of the RESAMAD network to be able to do so.

Surveillance Highlights:

- To raise awareness of the new National Strategic Plan for the Development of Laboratories 2021–2025 and to mobilize technical and financial partners for its implementation, IDDS supported the MoH to hold a launch workshop for the document.
- To communicate results of the weekly monitoring of health events and diseases to public health actors for evidence-based decision-making and partner coordination, IDDS supported the Directorate of Health Monitoring, Epidemiological Surveillance, and Response to hold two workshops, producing two monthly IDSR bulletins.

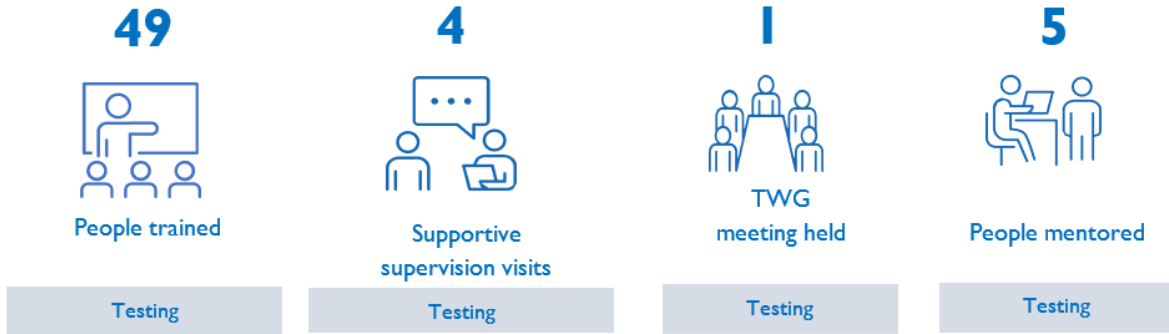
Problems Encountered and Solutions

Problem	Resolution	Status
None to report.		

Lessons Learned

- None to report.

FY 2023 Q1 Output Results



MALI

IDDS submitted a revised Mali FY 2023 GHS work plan to USAID on October 20, 2022 and received approval on November 16, 2022.

Quarterly Highlights

Diagnostic Highlights:

- IDDS finalized the quality manual for the laboratory accreditation process by providing technical and financial support to the INSP to organize workshops that took place in December 2022 in Fana and Koulikoro regions. This document will be used as a reference for quality management at the INSP.

COVID-19 Diagnostic Highlights:

- To improve the quality of COVID-19 surveillance data, IDDS provided logistics support and technical assistance to the *Direction General de la Sante et de l'Hygiene Publique* (General Directorate of Health and Public Hygiene) to hold two workshops for integrating information systems and validating subnational databases. During the two workshops, IDDS and representatives from the *Direction General de la Santé et de l'Hygiene Publique*, INSP, and the subnational sites included in the analysis compared subnational datasets to the national database, checked for and revised discrepancies, and updated and finalized databases at all levels.

Problems Encountered and Solutions

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

Lessons Learned

- None to report.

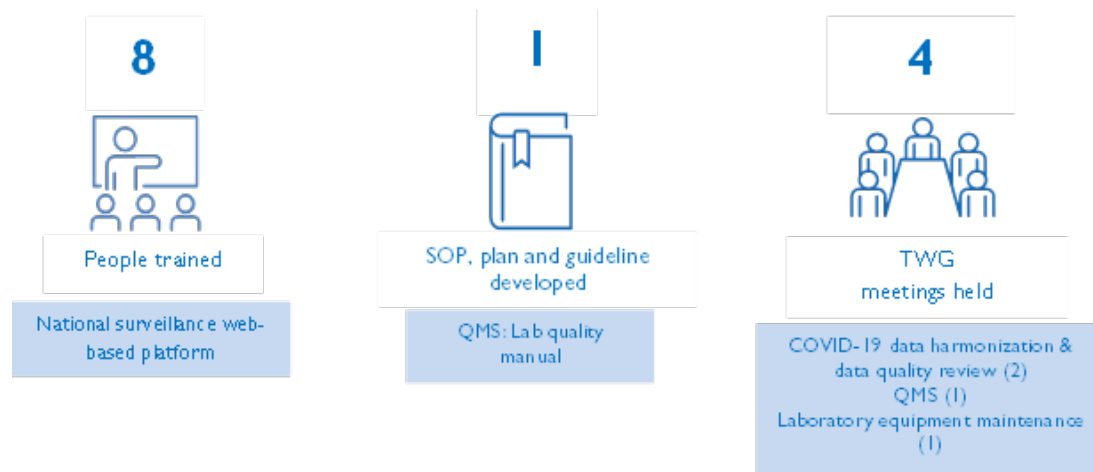
FY 2023 Q1 Output Results

16,927



Visits to national web-based surveillance platform

Data analysis and use



FY 2023 Q1 Outcome Results

IDDS continued to support five districts (Kadiolo, Kangaba, Kati, Kolondieba, and Sikasso) to improve the quality of CBS. Across these five districts, 523 signals were received during this reporting period and all were verified.

Additionally, during FY 2023 Q1, a total of 14,648 daily actual SMS out of 30,030 expected daily SMS were sent by 330 community health workers across the five supported districts to notify district health authorities of signs or symptoms related to potential priority infectious diseases or events under surveillance, such as yellow fever, measles, viral hemorrhagic fever, meningitis, deaths, stillbirths, and poisoning. Factors affecting SMS report completion rates included limitation in mobile internet connectivity in rural communities and some limitations in daily monitoring and supervision of community health workers.

Reporting rates (percentage of expected daily messages sent) in FY 2023 Q1 for these districts were:

- Across all 5 districts: 49 percent
- Kadiolo: 66 percent
- Kangaba: 79 percent
- Kati: 45 percent
- Kolondieba: 42 percent
- Sikasso: 26 percent

Additional indicator data can be found in Annex C

PHILIPPINES

IDDS submitted the FY 2023 GHS work plan to USAID on October 6, 2022 and received approval on December 6, 2022.

Quarterly Highlights

Diagnostic Highlights:

- The USAID mission helped IDDS set up a meeting that convened all stakeholders and relevant implementation partners to jointly coordinate activities for FY 2023 to avoid duplication in GHS activities. The meeting took place on November 8, 2022.
- The FY 2023 Philippines GHS work plan was approved on December 6, 2022. Upon receipt of approval, IDDS set up a series of meetings with government partners (e.g., Department of Health and Department of Agriculture) and implementation partners (e.g., WHO and the Defense Threat Reduction Agency) to introduce and coordinate IDDS's GHS activities.

COVID-19 Diagnostics:

- In FY 2023 Q1, IDDS transported 4,699 specimens for reverse transcription PCR tests from 40 collection sites to testing sites in the 6 IDDS-supported provinces (Bulacan, Cavite, Isabela, Laguna, Palawan, and Rizal). In addition, IDDS transported 877 specimens for genome sequencing from 10 collection sites in IDDS-supported provinces (Bulacan, Cavite, Laguna, Palawan, and Rizal) to the national capital region.
- Mobile swabbers placed in the 5 IDDS-supported provinces (Bulacan, Cavite, Isabela, Laguna, and Rizal) collected 2,471 specimens for PCR tests and rapid antigen tests. In Palawan province, IDDS provided transportation for the provincial laboratory staff who engaged in the mobile specimen collection activity. With IDDS's support, the province collected 181 specimens for PCR tests and rapid antigen tests.
- With the remaining ARP I funds, IDDS purchased 5,000 viral transport media, of which 2,500 were donated to Bulacan province and 2,500 were returned to the vendor because the expiry date was too close. The vendor shipped the replacement items in December 2022, which will be distributed to IDDS-supported provinces upon delivery to the IDDS office.
- With the remaining ARP II (Rapid Response) funds, IDDS ordered and handed over whole genome sequencing reagents, which can support approximately 2,000 tests, to the Philippine Genome Center.

Problems Encountered and Solutions

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

Lessons Learned

- None to report.

FY 2023 Q1 Output Results

112



People trained

SRS- COVID-19 (60)
Biosafety and biosecurity –
COVID-19 (52)

5,576



Specimens
transported

COVID-19 diagnostic
testing (4,699)
Genome sequencing (877)

SENEGAL

IDDS submitted the Senegal FY 2023 GHS work plan to USAID on October 4, 2022 and received approval on November 16, 2022.

Quarterly Highlights

Diagnostic Highlights:

- In preparation for activities that will strengthen the diagnostic network, IDDS initiated a discussion with the MoH Directorate of Laboratories to identify and select the AMR NRL and the sentinel sites within the national diagnostic network that IDDS will support.

Surveillance Highlights:

- In close collaboration with the MoH Directorate of Prevention, IDDS initiated the process of identifying two sentinel surveillance sites to scale up the Senegalese Syndromic Sentinel Surveillance network. This system is complementary to the indicator-based surveillance system and helps identify unusual health events earlier and provide a quicker response. IDDS and MoH agreed on the methodology for implementing this activity and developed the terms of reference.

Problems Encountered and Solutions

Problem	Resolution	Status
The health sector strike is causing delays in data sharing and general work plan implementation.	IDDS is engaged in advocacy with the regional health officers to convey the importance of continued data sharing and reporting.	Ongoing.

Lessons Learned

- None to report.

FY 2023 Q1 Output Results

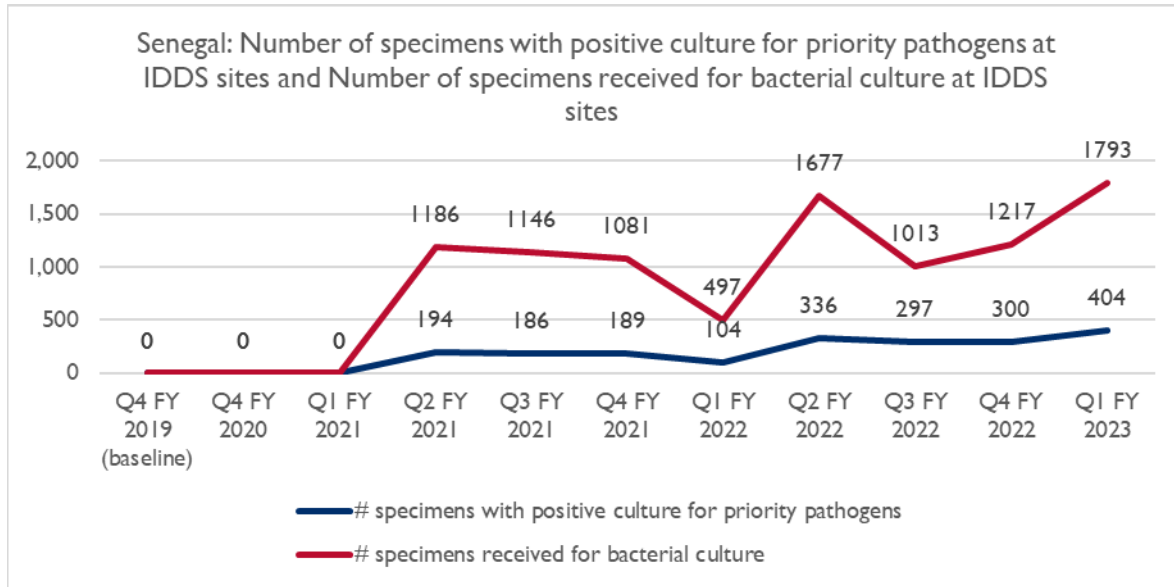
- None to report.

FY 2023 Q1 Outcome Results

IDDS strengthened capacity for bacteriology testing in six laboratories in Senegal during this reporting period, which has resulted in increased testing and detection of priority pathogens. In FY 2021 Q2, IDDS supported three laboratories to begin conducting bacterial culture and in FY 2021 Q4, the project began supporting two additional laboratories. IDDS started supported a sixth laboratory to commence bacterial culture testing in FY 2022 Q4. As of FY 2023 Q1, these six laboratories are routinely conducting bacterial culture with IDDS support and IDDS expects to support three additional laboratories in FY 2023.

Only bacterial priority pathogens listed by the national government as being of “primary concern” are

reported for this indicator. During this reporting period, the majority of priority pathogens identified were either *E.Coli* or *Staphylococcus Aureus*. However, some others found included *Klebsiella pneumoniae*, *Enterobacter spp*, *Pseudomonas aeruginosa*.



Additional indicator data can be found in Annex C.

TANZANIA

IDDS submitted the Tanzania FY 2023 GHS work plan to USAID on October 4, 2022 and a revised version on October 20, 2022. IDDS received approval for the work plan on November 16, 2022.

Quarterly Highlights

Success Story:

- IDDS-supported Laboratories in Tanzania: From Improving Antimicrobial Resistance Data Quantity and Quality to Presentation of Abstracts at a Scientific Symposium

Surveillance Highlights:

- IDDS successfully validated and launched the NAP-AMR (2023–2028) in collaboration with the MoH, Ministry of Livestock and Fisheries, and other key national AMR stakeholders. The NAP-AMR showcases IDDS's contribution to AMR surveillance work in Tanzania over the past few years and provides a foundation on which interventions can be built in the future.

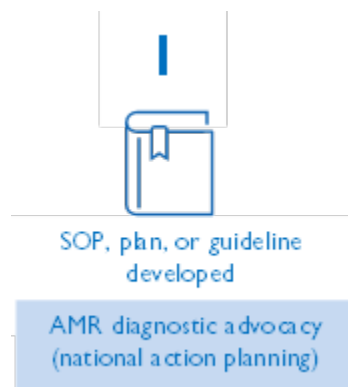
Problems Encountered and Solutions

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

Lessons Learned

- Bringing together different implementing partners and using an integrated approach ensures that interventions complement one another and impact is maximized.

FY 2023 Q1 Output Results



FY 2023 Q1 Outcome Results

Results from FY 2023 Q1 remain pending due to ongoing data collection and validation procedures. Additional indicator data can be found in Annex C.

VIETNAM

The Vietnam FY 2023 GHS work plan was approved by USAID on November 16, 2022.

Quarterly Highlights

Success Story:

- IDDS Pioneers Extension of Vietnam Animal Health Information System to District Level to Improve Animal Disease Reporting

Diagnostic Highlights:

- To improve specialized specimen transport services in three pilot provinces (Binh Dinh, Dong Thap, and Thai Nguyen), IDDS reached an agreement with Nhat Tin Logistics Company to revise transport routes and make other improvements. The success of the pilot SRS in the three provinces will lay the foundation for nationwide scale-up of the SRS.

Surveillance Highlights:

- To improve surveillance of zoonotic diseases, IDDS supported the development of a mobile application for VAHIS, which will increase its use at the provincial and lower levels, especially among field staff.

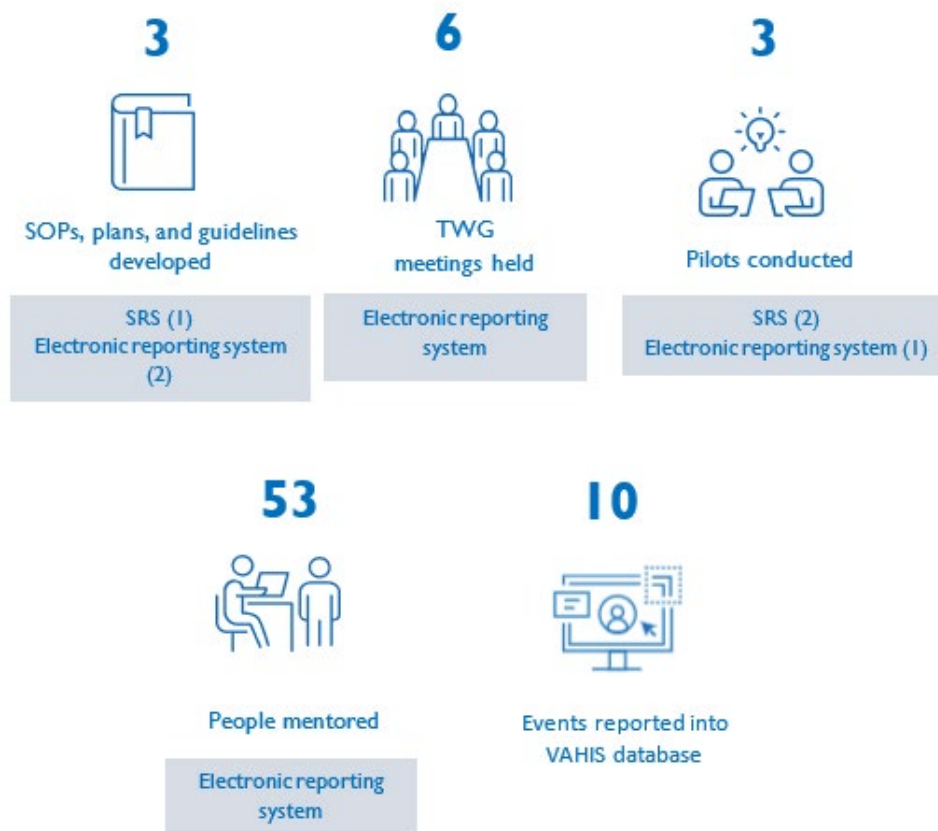
Problems Encountered and Solutions

Problem	Resolution	Status
Field activities in the FY 2023 GHS work plan are expected to be significantly delayed because the Government of Vietnam recently requested that all international aid activities are documented, reviewed, and approved by government authorities, according to Decree 80/2020/NĐ-CP. For IDDS, the approvals must be obtained from the MoH and the Ministry of Agriculture and Rural Development (MARD). The processes of preparing project documents and obtaining approvals from these ministries are often time consuming and expected to take three to six months.	IDDS organized two meetings, one with the National Institute of Hygiene and Epidemiology (NIHE) in the human health sector and the other with DAH in the animal health sector. The purpose of the meeting with NIHE was to obtain agreement from NIHE that it will serve as the focal agency for submitting project documents to the MoH and following up for approval of project activities in the human health sector. DAH will play a similar role in obtaining approval from MARD for implementation of project activities in the animal health sector. Both NIHE and DAH have agreed and have been working closely with IDDS to prepare the necessary project documents and will submit them to the corresponding ministries in January 2023.	Ongoing. The project documents are being prepared, with expected submission to MoH and MARD in January 2023.

Lessons Learned

- During SRS pilots, working closely with the key partners plays an important role in the pilot's success in the three provinces. For example, when a shipment encounters an issue, communication between stakeholders, including IDDS, the sending and receiving facilities, and the courier company is integral to resolve the issue in a timely manner.

FY 2023 Q1 Output Results



Additional indicator data can be found in Annex C

Integrated Disease Surveillance and Response FY 2023 QI Achievements

An amended work plan extending the period of performance to June 30, 2023, and revising activities was submitted to USAID on December 19, 2022.

Quarterly Highlights

Surveillance Highlights:

- In Cameroon, IDDS is implementing a coaching approach to improve IDSR indicators in the Southwest Region of the country. Surveillance focal people who participated in trainings held by IDDS in the previous quarter serve as the coaches and participate in weekly online data review meetings. This activity is also conducted in collaboration with the Regional Centers for Epidemics Prevention and Control in the Southwest Region of Cameroon.
- In Senegal, IDDS trained nurses who will support IDSR in three health districts (Goudiry, Kidira, Dianke Makha).

Problems Encountered and Solutions

Problem	Resolution	Status
A health sector strike in Senegal has delayed collaboration with key collaborators in the MoH and across the health sector.	A resolution to the strike is anticipated in the next quarter, and implementation is anticipated to resume.	In progress
IDDS experienced delays in implementation in Uganda due to (1) key collaborators in the MoH responding to the EVD (Sudan variant) outbreak, and (2) waiting on approval of the exemption memo that allows for IDDS's engagement with government officials.	(1) The EVD (Sudan variant) outbreak was declared over in Uganda on January 11, 2023. (2) The exemption memo was approved on December 23, 2022.	(1) Resolved (2) Resolved

Lessons Learned

- None to report.

FY 2023 QI Output Results

Cameroon

1



Pilot conducted

Data quality and analysis
(IDSR)

Senegal

76



People trained

Electronic reporting systems
(IDSR)

President’s Malaria Initiative FY 2023 Q1 Achievements

In FY 2023 Q1, IDDS reviewed the work plan against the WHO midterm malaria program review results to ensure that it complements and supports the priority gaps in the country. Based on discussions with the CNM, WHO, and the USAID mission, IDDS revised the work plan to add the request to include technical assistance to improve subnational capacity in microscopy and help CNM increase PCR capacity at the subnational level.

Quarterly Highlights

Diagnostic Highlights:

None to report.

Problems Encountered and Solutions

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

Lessons Learned

- Ensuring alignment with the CNM will minimize further delays to the implementation timeline.
- Working closely with the CNM and WHO will minimize potential for duplicative efforts.

Tuberculosis FY 2023 Q1 Achievements

CORE TB

Quarterly Highlights

Success Story:

- IDDS Maintains Momentum for Improving TB diagnosis in Uganda Through Refresher Training and On-Site Supervision

Diagnostic Highlights:

- IDDS is currently conducting spatial analyses in Ethiopia, Pakistan, Tanzania, and Uganda. IDDS incorporated data on second-line DST, including availability of I0-color GX instruments, use of GX MTB/XDR cartridges, and Truenat MTB/RIF chips into the spatial analyses conducted in Ethiopia and Uganda. This additional analysis will support NTP decision-making related to expanding access to DR-TB diagnostics and strengthening the overall TB diagnostic network.
- To improve real-time reporting and monitoring of GX test results, IDDS helped connect 144 GX instruments in Zimbabwe and 25 in Mozambique to a connectivity solution that helps these instruments report data into the national TB diagnostic network and supports diagnostic and clinical decision-making at the national level. IDDS also helped fund SMS transmission of GX data in Tanzania and the Philippines.
- In support of high quality decentralized molecular diagnostics, IDDS trained 30 Truenat super-users in Tanzania (10 female) and provided refresher trainings for 78 end-users (29 female) in Kenya, and 39 end-users (7 female) in Uganda. IDDS also supported six countries (Bangladesh, Cambodia, DRC, Kenya, Uganda, Zimbabwe) to participate in EQA for Truenat. IDDS also curated common challenges and lessons learned for programmatic Truenat implementation across countries that will support further scale-up and expansion of Truenat in iNTP countries.
- To accelerate the detection of childhood TB, IDDS is piloting stool-based testing at health facilities in DRC, Malawi, and Zimbabwe and held discussions with partners in Burma and the Philippines to implement the novel SOS stool processing method. IDDS trained six master trainers (three female) from the Uganda Supranational Reference Laboratory and other consultants to build regional capacity to train NTPs on SOS stool processing in additional countries.
- To improve detection of pre-XDR TB, IDDS worked with counterparts in Cambodia, Malawi, and Uganda to plan for installation and use of GX I0-color instruments and MTB/XDR cartridges. IDDS also developed training materials for laboratory staff at newly equipped laboratories in Cambodia and Malawi on use of the I0-color instruments using MTB/XDR cartridges.
- IDDS is supporting NTRL and three RTRLs in Pakistan to obtain ISO 15189 accreditation in an effort to boost availability of high-quality TB and DR-TB diagnostics in the country. IDDS provided a 12-module training on QMS to 50 participants and supported 12 laboratory staff members to receive internal audit certification from an external accreditation body. IDDS is also supporting adaptation of all the technical and management SOPs, guidelines, and materials required for ISO 15189 accreditation at supported laboratories.
- IDDS contributed to advancing understanding of TB diagnostics and management through its participation in the 52nd Union World Conference on Lung Health, at which project staff presented

14 abstracts, including 11 e-posters and 3 oral presentations, from Bangladesh, Cambodia, Tanzania, Vietnam, and Zimbabwe. IDDS continues to support various operational research studies, including the Bacteriologically Confirmed TB study, which is ongoing in DRC, Tanzania, and Zimbabwe.

Core TB activities are also referenced in the individual country highlights.

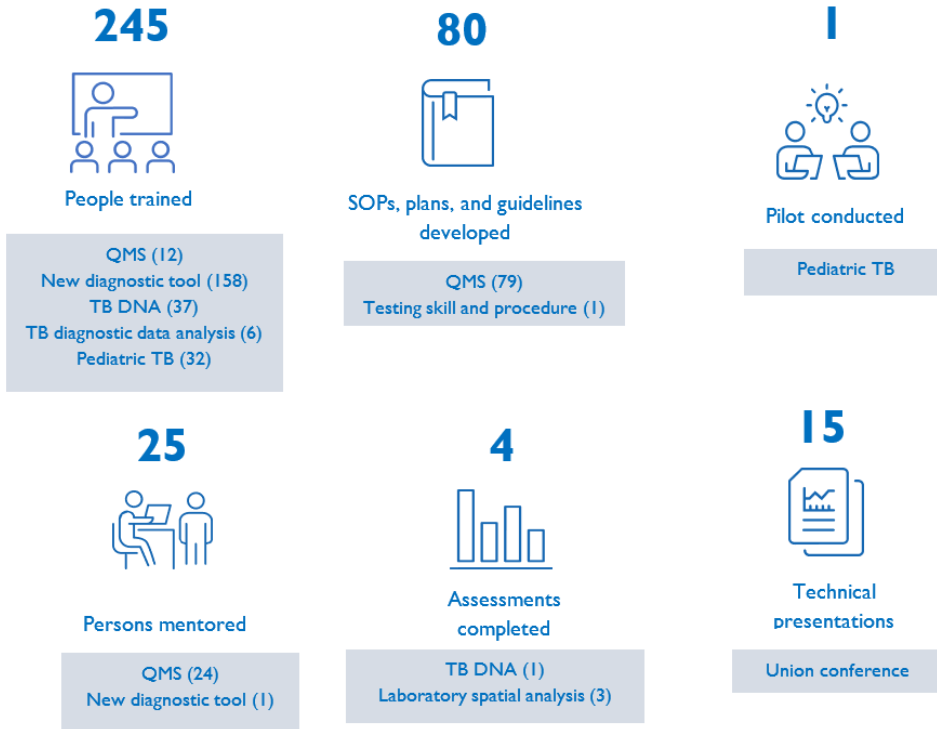
Problems Encountered and Solutions

Problem	Resolution	Status
Heightened security in Abuja, Nigeria delayed the Truenat super-user training workshop.	The U.S. State Department issued a heightened security warning that limits all non-essential travel for U.S. Government business in Abuja, Nigeria. IDDS is closely following and corresponding with the mission on the situation. With the improving travel restriction, the training is tentatively scheduled for FY 2023 Q2.	In progress

Lessons Learned

- Providing a three-day end-user refresher training is essential to build proficiency and confidence of the Truenat labs and address challenges identified through the EQA.
- For all Truenat trainings, limit the participant size to 15–20 to better manage the time, and ensure that training laboratories are available for practical exercises.
- With the introduction of new techniques or technologies (e.g., stool testing for pediatric TB), advance planning for scale-up is required.

FY 2023 Q1 Output Results



BANGLADESH

IDDS submitted the Bangladesh FY 2023 TB work plan to USAID on October 11, 2022 and received approval on November 7, 2022.

Quarterly Highlights

Diagnostic Highlights:

- To expand access to rapid diagnostics for TB detection, IDDS provided technical and logistical support to the Bangladesh NTP to complete rollout of Truenat to 38 peripheral sites, which began in FY 2022. Across each of the 38 sites, IDDS organized orientation sessions with a total of 667 health care workers (202 female) on TB screening and specimen collection and transportation to increase referral of specimens to Truenat and GX sites for diagnosis and to RTRLs for culture and DST.
- To ensure quality of Truenat testing, IDDS completed the first round of EQA for all Truenat sites with Core TB funding. EQA is designed to ensure that the entire testing process (pre-analytical, analytical, and post-analytical) is managed for consistent and reliable results. EQA results show that 31 of the 38 Truenat sites (81.6 percent) achieved a passing score. These results have helped to build understanding among NTP policymakers that the Truenat technology is reliable for detection of TB and rifampicin-resistant TB, and feasible for implementation at the community level.
- To support the establishment of a GX EQA program, IDDS sourced EQA panels from the Vietnam NRL and supported EQA testing at 50 GX sites. After the results are available, IDDS will work with NTP to determine what technical support sites may need.
- To decentralize detection of DR-TB, IDDS enabled the Khulna RTRL to start performing liquid culture by supporting the installation of a Mycobacterium Growth Indicator Tube instrument and embedding staff at the laboratory.

Problems Encountered and Solutions

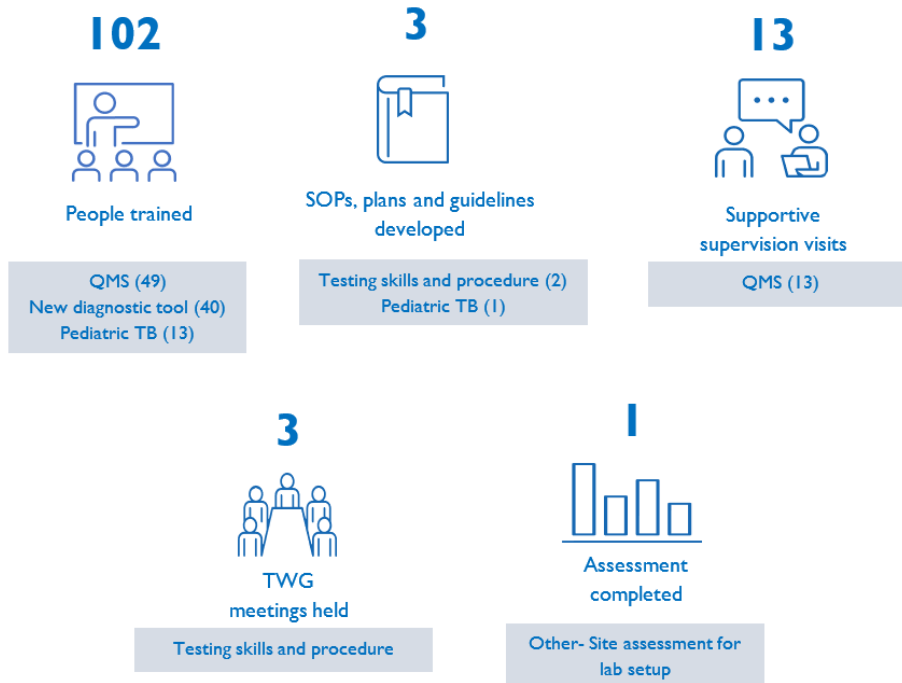
Problem	Resolution	Status
A supply shortage of GX cartridges is undermining the project's effort to increase utilization in selected sites.	NTP has taken urgent action to procure GX cartridges to improve the supply situation. However, the shortage continues because Cepheid is unable to meet the demand.	In progress

Lessons Learned

- Procurement of TB equipment and supplies (most of which are not available locally) and customs clearance of the supplies are lengthy processes. To improve its procurement planning, NTP requires assistance with accurate forecasting and timely placement of orders. These issues have significantly delayed implementation of IDDS planned activities. IDDS will provide limited technical support to improve the procurement planning and forecasting for NTRL and RTRL staff and more frequently follow up with NTP to expedite the customs clearance process.

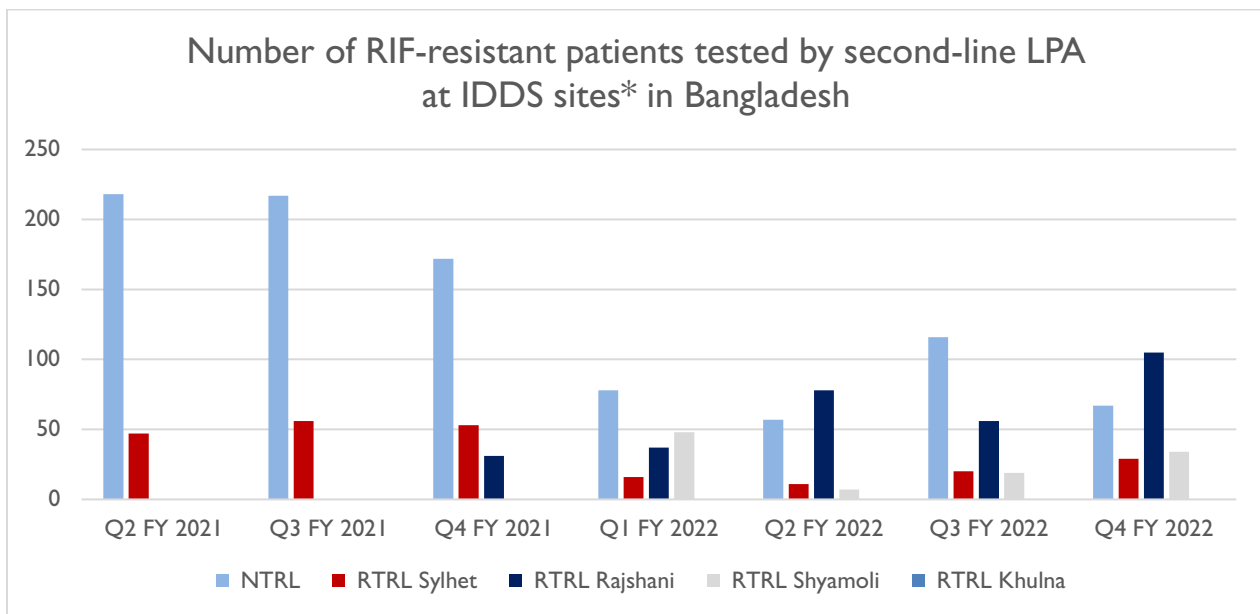
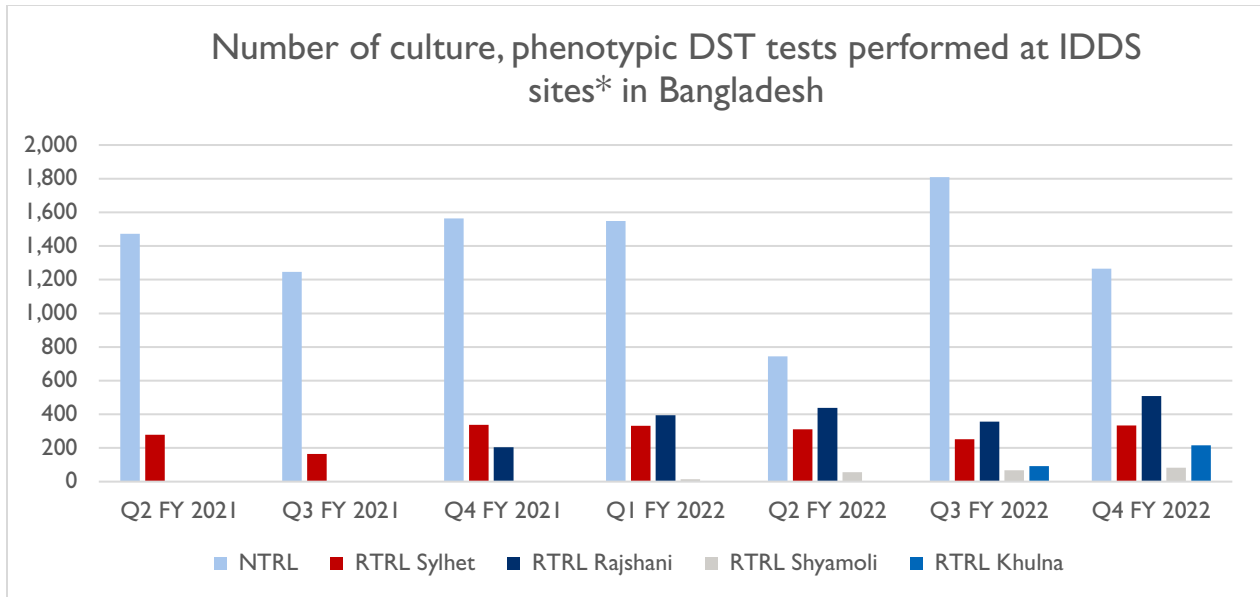
- Implementation of any new technology, such as Truenat, requires months before the technology can be used at its full capacity. Extensive monitoring, supervision, and mentoring is critical for developing technical and management skills at the field level.

FY 2023 Q1 Output Results



Outcome Results

Outcome results presented here are up to FY 2022 Q4, as most TB outcome data are not available until next quarter.



*IDDS sites in Bangladesh include one national and four regional referral hospitals.

The graphs above show the number of phenotypic DST and second-line LPA tests conducted in the five IDDS-supported laboratories in Bangladesh over time. IDDS supported the introduction of these tests in the regional laboratories to decentralize testing, improve access, and reduce the burden at the NTRL.

Additional indicator data can be found in Annex C

BURMA

Quarterly Highlights

Diagnostic Highlights:

- IDDS was able to resume direct technical assistance to NTP and NTRL. IDDS participated in a series of high-level advocacy meetings to renew the MOU between MoH and IDDS. The MOU renewal process may take up to six months, so IDDS has proposed a list of prioritized activities to continue implementation during the renewal process. IDDS and NTP have come to a consensus on the list of activities, and IDDS is currently awaiting official approval.
- To improve TB diagnosis, IDDS trained seven radiographers and medical officers from MATA (four female) on the use of X-ray with computer-aided diagnosis and trained three laboratory technicians (two female) on TB testing using Truenat instruments. All trainings were conducted in Yangon region in October 2022.
- To improve TB laboratory infection control, IDDS conducted a technical review of TB laboratory biosafety and biosecurity assessment tools, training materials, and training video clips and disseminated those materials to partner organizations.

Problems Encountered and Solutions

Problem	Resolution	Status
On October 28, 2022, the State Administration Council enacted a new organization registration law which includes more severe punishments for any breach of the law. As a result, most partners are struggling to renew their organization registration or memorandum of understanding.	IDDS is taking careful steps to provide advocacy and technical assistance, because the MOU renewal process is still ongoing. With engagement at the community and regional levels, some technical assistance activities are being carried out. However, some deliverables have been negatively impacted or delayed because activities can only be resumed after NTP's official approval.	In progress
The new MoH and NTP leadership has imposed strict and unpredictable instructions on TB implementing partners. For example, NTP asked MATA, IDDS's main implementing partner, to stop its field activities in October 2022 due to some issues in their registration process.	IDDS is following up with MATA about their registration process so the risk and timeline of activities can be determined. IDDS may consider alternative partnership strategies if the situation poses a threat to the successful execution of IDDS activities.	In progress
The new central NTP leadership has a different opinion on private-sector engagement than IDDS, which does not favor direct and indirect support to the private sector, even though NTP	IDDS advocated for and convinced NTP to engage with the private-for-profit sector, where there may be both under-reporting and under-diagnosis of TB cases. IDDS will continue to highlight the importance of private-sector	In progress

Problem	Resolution	Status
recognizes the private-for-profit sector's role in finding missing TB cases.	engagement and mandatory case notification in upcoming communications with NTP.	
IDDS encountered unexpected delays in procurement due to a policy change notice from the Central Bank of Myanmar to control foreign currency.	IDDS discussed how to overcome this challenge with suppliers while maintaining a high level of compliance and emphasizing the project's timeline. After some delay and extensive negotiations with suppliers, IDDS has successfully procured priority diagnostics materials, such as ultraportable CXR instruments, artificial intelligence boxes, Truenat instruments, and GX instruments.	Completed

Lessons Learned

- As instructed by the MoH and NTP, IDDS had to temporarily stop or amend implementation of some project activities due to differing priorities between NTP and the MoH on how best to address diagnostic network gaps in the country. IDDS now continues to engage both the MoH and NTP when conceptualizing activities to avoid unexpected delays in decision-making and approvals.

FY 2023 Q1 Output Results

10



People trained

New diagnostic tool

FY 2023 Q1 Outcome Results

Burma outcome indicator results are reported on an annual basis from the WHO source in country. Indicator data can be found in Annex C

CAMBODIA

IDDS submitted the Cambodia FY 2023 TB work plan to USAID on December 17, 2022.

Quarterly Highlights

Diagnostic Highlights:

- To improve data quality and reporting for TB, IDDS continued to expand diagnostic connectivity by installing DTC at 1 GX site in Cambodia—bringing the total to 30 sites that are successfully using DTC. IDDS is also working to establish interoperability between DTC and other information management systems. As a result of DTC implementation, NTP staff can receive timely test results from the sites and use the connectivity solution to monitor, analyze, and use data for decision making. Further, the management staff can access data on GX performance, utilization, maintenance, and inventory through the DTC web portal and proactively provide guidance on corrective actions to the sites.
- To support the implementation of new diagnostic tools for TB, IDDS wrapped up the pilot of Truenat instruments in 15 peripheral laboratories. From May to November 2022, a total of 1,977 presumptive TB cases were tested with Truenat through the pilot, out of which 115 MTB-positive cases and 5 rifampicin-resistant TB cases were detected.

Problems Encountered and Solutions

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

Lessons Learned

- Truenat instruments need a software update from Molbio and realignment of data fields between the two systems prior to connecting DTC to Truenat.
- Truenat uses mobile data SIM cards for data connectivity and does not have the advantage of full broadband Internet connectivity that GX instruments have. Thus, stable 4G data connectivity remains important for the Truenat devices.
- Unique IDs are needed so the GX system, DTC, and the TB Management Information System can interact with one another because they are not in the same language. The TB Management Information System is in Khmer, and the GX system and DTC are in English.

FY 2023 Q1 Output Results

16

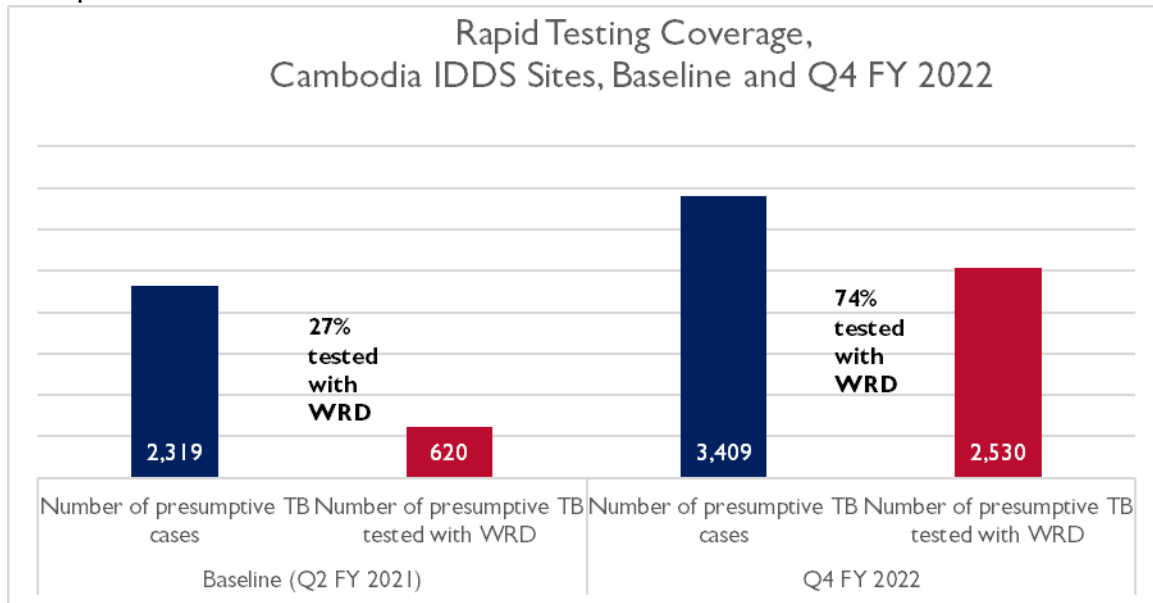


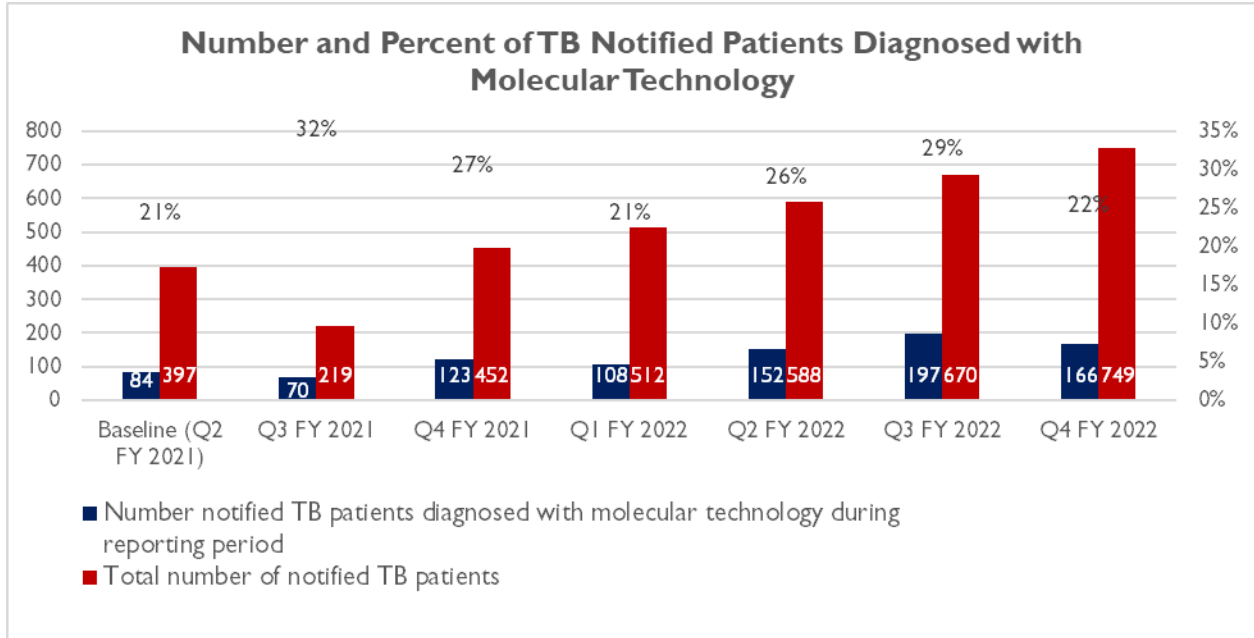
People trained

- New diagnostic tool (8)
- TB diagnostic connectivity solution (2)
- Other-CXR telegram platform (6)

Outcome Results

Outcome results presented here are up to FY 2022 Q4 as most TB outcome data are not available until next quarter.





*Only initial COMMIT-supported sites are included in the graph above since baseline data only included those initial sites.

Additional indicator data can be found in Annex C.

DEMOCRATIC REPUBLIC OF THE CONGO

IDDS submitted the DRC FY 2023 TB work plan to USAID on November 18, 2022. As of December 30, 2022 the approval was still pending.

Quarterly Highlights

Diagnostic Highlights:

- To ensure that TB diagnostic services in DRC are effective, reliable, and accessible, IDDS (with Core TB funding) is conducting a TB DNA in DRC. IDDS arranged a training and workshop for NTP to conduct a self-assessment of the TB diagnostic network, the first step in the TB DNA process. This involved evaluating the current diagnostic practices and testing algorithm using a diagnostic network assessment tool.
- IDDS also procured materials and equipment for the Lubumbashi and Kisangani provincial TB reference laboratories. This procurement was based on a comprehensive assessment of the laboratories' needs and was designed to allow the laboratories to restart culture testing while minimizing the risk of contamination. This procurement will help to ensure that these laboratories have the necessary resources to carry out their work effectively, improving the overall quality and reliability of TB diagnostic services in the region.

Problems Encountered and Solutions

Problem	Resolution	Status
Collecting monitoring and evaluation data to monitor site performance has been challenging because of poor data systems and lack of dedicated data managers at the three IDDS-supported sites.	Internal discussions took place about providing support for data validation meetings with NTRL staff or organizing field supervision at the provincial laboratory level on a quarterly basis to assist with data reviews, compilation, and reporting.	In progress
The incubator delivered to the Kisangani provincial laboratory did not comply with the technical specifications shared by IDDS.	The incubator was returned to the supplier to be exchanged. A new replacement incubator that meets the required technical specifications has been installed.	Resolved

Lessons Learned

- None to report.

FY 2023 QI Output Results

3



Supportive
supervision visits

QMS

INDIA

An amended work plan extending the period of performance to May 2024 and revising activities was submitted to USAID on November 29, 2022.

Quarterly Highlights

Success Story:

- IDDS Convenes Experts to Draft India's National Action Plan on Antimicrobial Resistance for Professional Associations and Civil Society Organizations

Diagnostic Highlights:

- IDDS developed a comprehensive TB biosafety and monitoring manual for NTEP. The manual aims to encourage and facilitate biosafety measures to enable laboratory staff to work safely with potentially infectious microorganisms and help prevent unintentional exposure to pathogens or their accidental release.
- IDDS developed an EQA guidance document for laboratory supervisory staff at different tiers of NTEP. This is significant because the guidance document will build capacity of supervisory staff across all tiers of the TB diagnostic network to conduct EQA activities more efficiently and effectively.
- After IDDS implemented the "one-stop TB diagnostic solution" to engage the private sector in TB screening and treatment, Hisar became the top-ranked district for Universal Drug Susceptibility Testing in Haryana state in October 2022, up from 10th in rank before initiation of the model. Implementation of the model is also increasing the number of TB cases reported to NTEP, improving the rate of specimens that are sequentially tested for drug susceptibility (now more than 99 percent) within the stipulated timeframe, and helping clinicians to promptly initiate appropriate treatment regimens for TB patients.
- IDDS is helping to develop national guidelines for AMR containment in India through technical and managerial support to NCDC. IDDS organized a meeting of national experts from professional associations and civil society organizations to discuss the NAP-AMR 2.0 (2023–2027). The existing NAP-AMR ended in March 2022, and IDDS is supporting NCDC in organizing multisectoral stakeholder meetings to develop the second phase of the NAP-AMR for subsequent years (2023–2027).

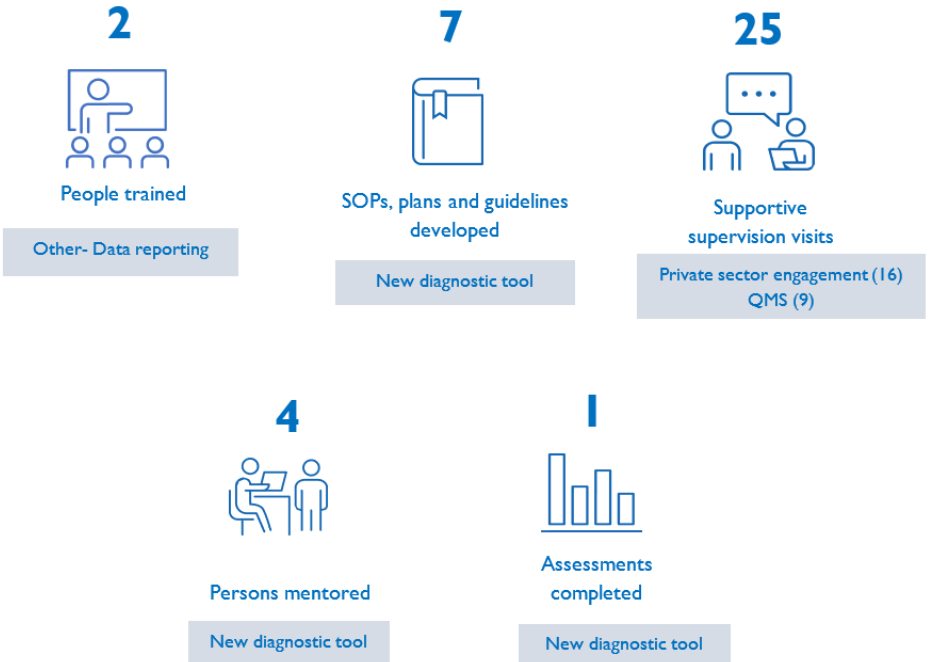
Problems Encountered and Solutions

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

Lessons Learned

- Weekly program performance review with district and block coordinators are critical for program efficiency.

FY 2023 Q1 Output Results



KENYA

Quarterly Highlights

Diagnostic Highlights:

- IDDS submitted the final LNSA report to USAID in December 2022.
- To address shortcomings identified through the supportive supervision visits conducted in the previous quarter, IDDS organized a Truenat end-user refresher training, during which the project trained 78 laboratory technicians (29 female) and 3 NTRL staff (2 female) to improve Truenat implementation.
- To ensure quality laboratory services for TB detection, IDDS supported Kenya’s EQA (cycle 2) for Truenat testing. For cycle 2, 58 percent of participating sites earned a “pass” score, 13 percent received an “acceptable” score, 18 percent received a “concern” score, and 11 percent received an “unacceptable” score. Kenya completed EQA cycle 3 in November 2022, with only 1 of 38 sites failing to submit results.

All IDDS activities related to TB in Kenya are supported with Core TB funds.

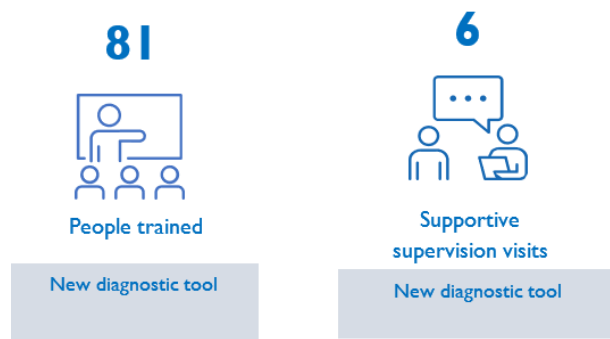
Problems Encountered and Solutions

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

Lessons Learned

- Providing a three-day end-user refresher training is essential to build proficiency and confidence of the Truenat laboratories and address challenges identified through the EQA.

FY 2023 Q1 Output Results



MALAWI

Quarterly Highlights

Diagnostic Highlights:

- To identify gaps in the diagnostic network, IDDS conducted the self-assessment portion of the DNA in October 2022.
- IDDS began the SOS stool processing pilot study in November which seeks to improve diagnostic capacity for pediatric TB in eight facilities across the country. IDDS and NTLEP provided on site mentorship to 53 facility staff (13 female) across the eight facilities to ensure a smooth start of the study. A follow up supportive supervision visit was conducted in December to all sites.

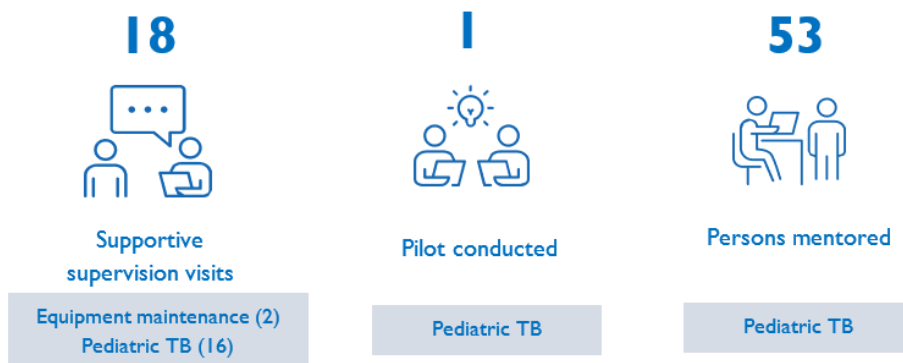
Problems Encountered and Solutions

Problem	Resolution	Status
IDDS experienced difficulty in securing materials (lead doors and window glass) in the country for the X-ray facility refurbishment project at Ekwendeni Mission Hospital.	IDDS is engaging with a regional consortium to source the necessary materials from a vendor outside the country.	In progress
There was a delay in the delivery of GX 10-color and Truenat instruments.	The three procured instruments have been procured and were delivered in December 2022.	Resolved

Lessons Learned

- Collaboration with other implementing partners in the country is essential, because many activities (e.g., X-ray facility refurbishment) have been done elsewhere in the country by other organizations, and best practices can be exchanged to enhance IDDS’s program implementation.

FY 2023 Q1 Output Results



MOZAMBIQUE

The Mozambique work plan was approved on September 29, 2022, and in October, November, and December 2022, IDDS focused on project start-up activities, including hiring a diagnostic specialist in November 2022 and a team lead and a monitoring and evaluation consultant in December 2022.

IDDS team members traveled to Mozambique in December 2022 to support the on-boarding of new staff and collaboratively develop the detailed implementation plans that will guide activities in Mozambique. During the trip, IDDS met with key stakeholders, including NTP, NTRL, the USAID mission, the USAID-funded Local TB Response project team, and others. These meetings oriented the in-country IDDS staff to the stakeholders and ensured that all stakeholders understood IDDS's role and objectives.

Quarterly Highlights

- With Core TB funding, IDDS completed the connectivity installation of 25 GX instruments and started conducting site visits to monitor GX connectivity.

Problems Encountered and Solutions

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

Lessons Learned

- Stakeholder meetings should happen in advance of work plan development to ensure rapid alignment with national circumstances.

FY 2023 QI Output Results

None to report.

NIGERIA

Quarterly Highlights

Diagnostic Highlights:

- To assess capacity for laboratory services, including DST, IDDS provided financial support for laboratory assessments at 40 facilities across 6 states (Abia, Adamawa, Lagos, Nasarawa, Oyo, and Rivers). This work was done with Core TB funds.

Problems Encountered and Solutions

Problem	Resolution	Status
The U.S. State Department issued a heightened security warning that limited all non-essential travels for U.S. government business in Abuja, Nigeria.	Due to the heightened security in Abuja, partners delayed the Truenat super-user training workshop. IDDS is closely following and corresponding with the mission on the situation. With the improving travel restriction, the training is tentatively scheduled for FY 2023 Q2.	In progress

Lessons Learned

None to report.

FY 2023 Q1 Output Results

None to report.

PAKISTAN

Quarterly Highlights

Diagnostic Highlights:

- To understand the existing burden of TB, DR-TB, and MDR-TB in the country, IDDS worked with NTP and provincial level labs to develop the first draft of the DRS protocol. IDDS is liaising with WHO on this activity to support statistical calculations for sample size and site selection and to cost out the protocol to enable its inclusion in the Global Fund funding request in Q2.
- To build decentralized provincial capacity for detecting DR-TB in Pakistan, IDDS supported NTP to develop the first draft of a pilot protocol for sentinel site surveillance at six sites across the country. Once the approach is finalized, IDDS will support these six sites to conduct pre-XDR testing using GX MTB/XDR cartridges over a period of six months. It is hoped this data will support decision-making on continued decentralized sentinel surveillance for DR-TB and MDR-TB in the country.
- To support NTRL and three RTRLs to deliver high-quality TB diagnostic services, IDDS continued training 50 Pakistan NTRL staff (12 female) on a 12-module QMS training package and is supporting adaption of all technical and management SOPs, guidelines, and materials required for ISO 15189 accreditation.
- IDDS supported 12 laboratory staff (4 female) to receive training from an accredited body on internal audit processes, which is a pre-requisite for the ISO certification.

All TB activities implemented by IDDS in Pakistan are supported with Core TB funds.

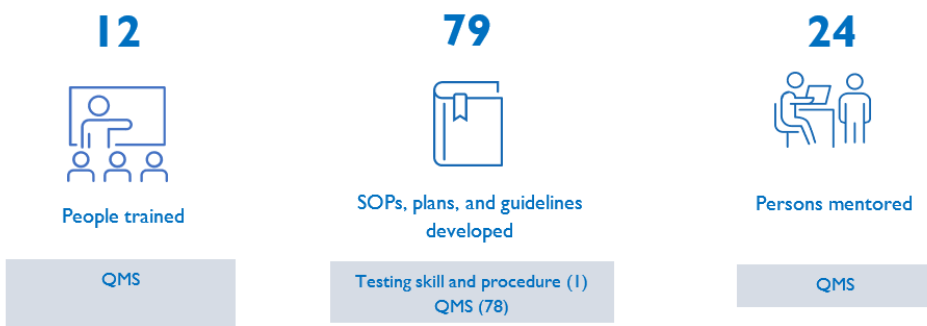
Problems Encountered and Solutions

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

Lessons Learned

None to report.

FY 2023 Q1 Output Results



TANZANIA

Quarterly Highlights

Diagnostic Highlights:

- To improve connectivity for TB diagnostics and improve patient outcomes, IDDS finished upgrading the GxAlert system to Aspect. IDDS also trained 26 persons (4 female) as future trainers on how to use Aspect to conduct TB data analysis in October 2022. The Aspect system can link with other diagnostic devices and laboratory information systems, which enhances real-time TB data sharing between laboratories and clinicians and ensures timely linking of TB patients to appropriate treatment regimens.
- With Core TB funds, IDDS trained 30 Truenat super-users (10 female) from November 28 to December 2, 2022. Thirteen representatives from MoH and one staff from USAID Washington also joined and observed the workshop.
- IDDS disseminated the results of the GX Ultra cartridges evaluation at a TB laboratory TWG meeting held in October 2022 in Morogoro.

Problems Encountered and Solutions

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

Lessons Learned

- None to report.

FY 2023 Q1 Output Results

26

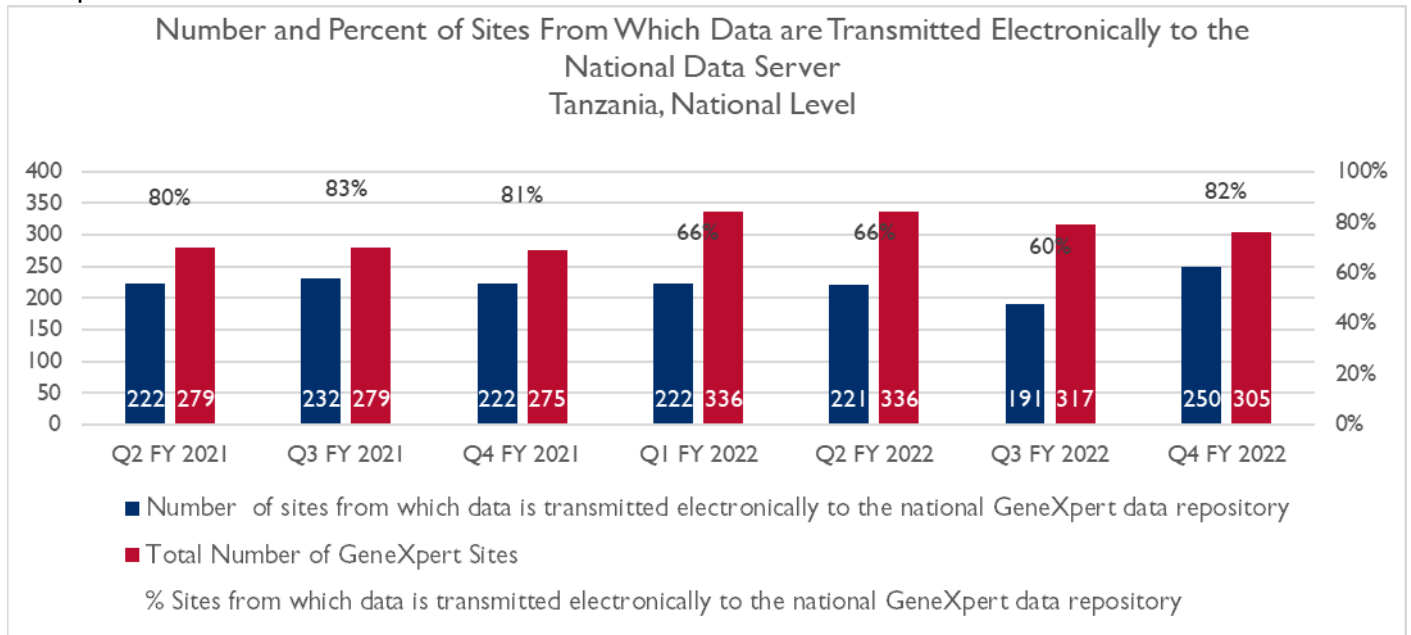


People trained

TB diagnostic
connectivity solution

Outcome Results

Outcome results presented here are up to FY 2022 Q4 as most TB outcome data are not available until next quarter.



Additional indicator data can be found in Annex C.

UGANDA

Quarterly Highlights

Success Story:

- IDDS Maintains Momentum for Improving Tuberculosis Diagnosis in Uganda through Refresher Training and On-site Supervision

Diagnostic Highlights:

- To expand access to rapid molecular diagnostic testing for TB detection, IDDS (with Core TB funds) supported Truenat end-user refresher training delivered by IDDS-trained super-users to technicians from 38 Truenat sites. A total of 39 people (7 female) participated in the training in November 2022, and post test scores showed a 16-percentage point increase over pretest scores.
- To support laboratories in delivering high-quality services, IDDS supported Uganda Truenat sites to complete EQA cycle 2, with 29 of 38 sites successfully submitting their results. After SmartSpot, the proficiency testing (PT) panel provider, releases the group report, IDDS will organize a debrief in FY 2023 Q2 to review the challenges encountered in testing and reporting.
- IDDS assessed capacity of sites to identify locations where additional GX 10-color instruments could be placed to bolster national level DR-TB diagnostics. Following the assessment, IDDS finalized a report outlining site-level capacities and needs at the Lira and Mbarara RRHs which will be equipped with GX 10-color instruments by IDDS in FY 2023 Q2.

All IDDS activities in Uganda are supported with Core TB funds.

Problems Encountered and Solutions

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

Lessons Learned

- None to report.

FY 2023 Q1 Output Results

39



People trained

New diagnostic tool

ZIMBABWE

An amended work plan extending the period of performance to May 2024 and revising activities was submitted to USAID on December 7, 2022.

Quarterly Highlights

Success Stories:

- Finding the Missing Childhood Tuberculosis Cases in Zimbabwe Using Stool Specimens
- Strengthening Zimbabwe's National Tuberculosis Reference Laboratories to Attain International Accreditation

Diagnostic Highlights:

- IDDS concluded data collection for the GX MTB/RIF Ultra results in Zimbabwe study. The collected data will be analyzed, and the findings will inform policy on the management of TB patients who received "trace call" results on the GX Ultra platform.
- IDDS accelerated the ability to detect childhood TB by conducting a regional training of trainers workshop on the SOS method for stool testing with 32 participants (9 female). The training, conducted with Core TB funds, was held in Bulawayo from October 30 to November 4, 2022. IDDS also supported these trainers to start cascading the SOS training to six facilities in Harare through on-site mentorship.
- IDDS connected 144 of 176 GX instruments to Aspect and trained six super-users (all male) on the connectivity software in November with Core TB funds. These super-users are now on call to solve connectivity issues.

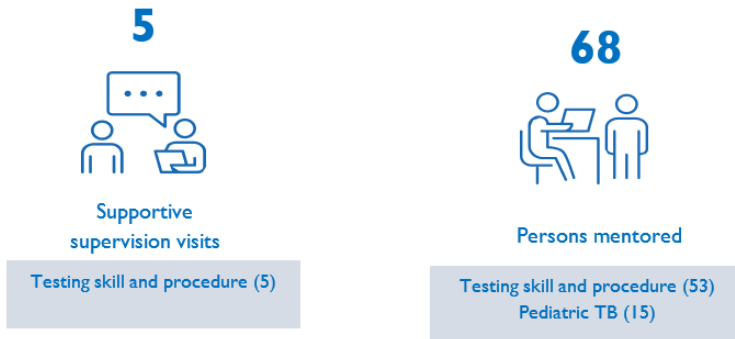
Problems Encountered and Solutions

Problem	Resolution	Status
There was a national stockout of GX Ultra cartridges due to a global shortage, which affected testing activities in Zimbabwe.	The Ministry of Health and Child Care has been following up with suppliers. The country received a consignment of cartridges, which has been delivered to all the testing sites.	Addressed.

Lessons Learned

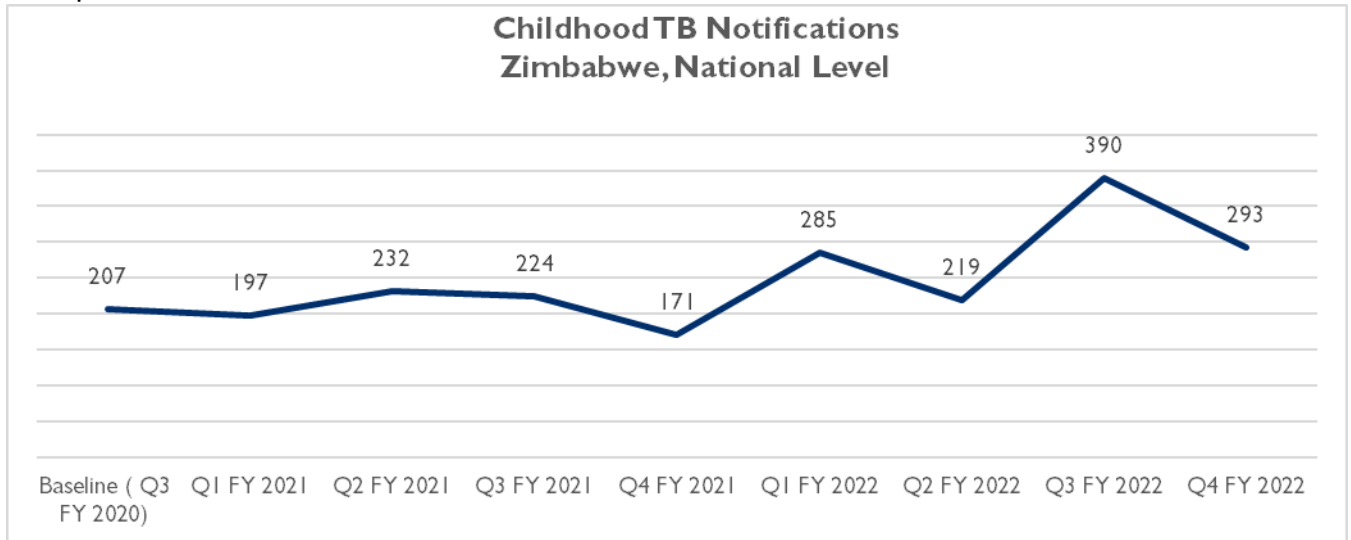
- Adopting remote mentorship strategies is an efficient way to move activities forward as IDDS awaits approval for on-site mentorship activities.

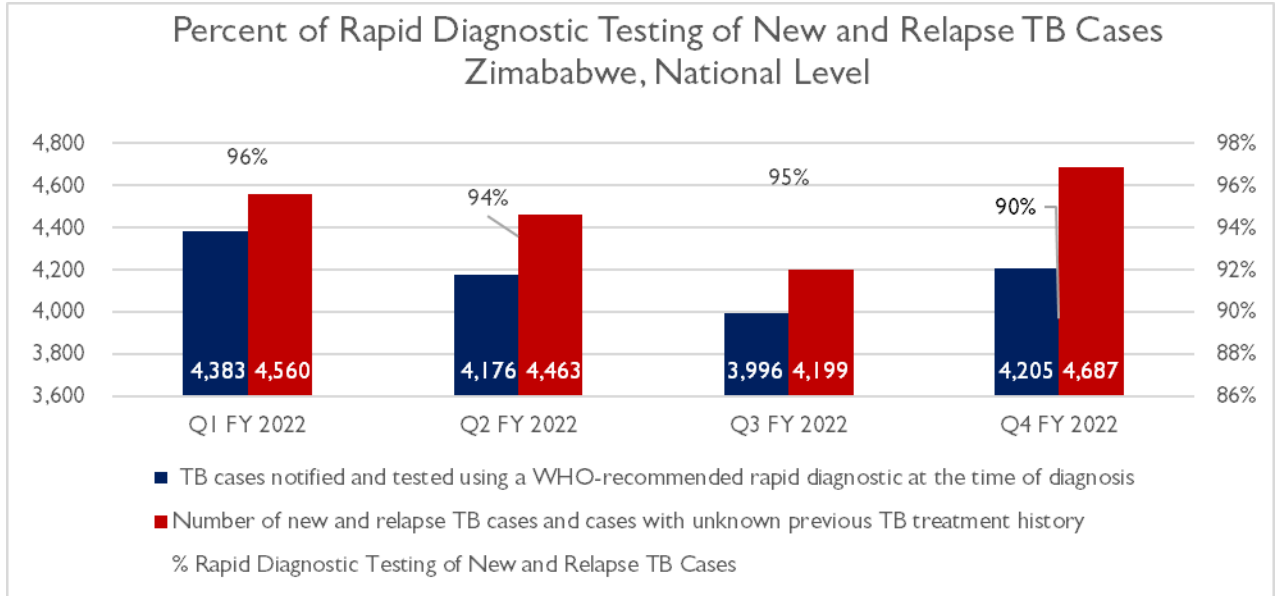
FY 2023 Q1 Output Results



Outcome Results

Outcome results presented here are up to FY 2022 Q4 as most TB outcome data are not available until next quarter.





Additional indicator data can be found in Annex C

Middle East and North Africa FY 2023 Q1 Achievements

Quarterly Highlights

Diagnostic Highlights:

- IDDS created an electronic version of the MENA tool in Airtable and an accompanying data collection tool in SurveyCTO that uses the data housed in Airtable. English, French, and Arabic versions of the tool were incorporated into the electronic tool, which will minimize language barriers and improve usability of the tool in the field.

Problems Encountered and Solutions

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

Lessons Learned

- None to report.

Annex A: Activity Implementation Progress

Annex B: Success/Highlight Stories

Annex C: Country Monitoring and Evaluation Tables