



USAID'S INFECTIOUS DISEASE DETECTION AND SURVEILLANCE (IDDS)

Supply Chain Technical Approach

Overview

Reliable and resilient supply chain systems equip diagnostic networks with the commodities needed to provide timely and accurate testing, even during the surge in demand outbreaks. Inadequate quantities and quality of diagnostic commodities at the appropriate tier leads to both the inability to perform necessary tests and delays in detection and appropriate interventions at the individual and community levels. Conversely, overstocks lead to expiry and waste valuable resources.

A successful supply chain depends upon multiple factors, including the selection of quality commodities, accurate forecasting, sustainable financing to cover costs, and distribution to the service delivery point while maintaining commodity integrity.

The Infectious Disease Detection and Surveillance (IDDS) five-year technical approach to strengthen supply chain systems will build on existing efforts in countries and proven best practices. In line with our One Health systems strengthening approach, veterinary commodities, which have typically not been included, will be incorporated into existing supply chain programs as feasible. While IDDS will implement tailored approaches specific to country needs, it will focus on five main areas: commodity standardization and selection, supply planning (forecasting and quantification), distribution while maintaining commodity integrity, appropriate service delivery point (SDP) storage, and inventory control and management at the SDP. IDDS support will promote robust national diagnostic supply chains, ensuring that quality diagnostic supplies for priority pathogen detection are available when and where needed and that countries will be able to effectively detect priority pathogens in both routine and emergency contexts.

In Year 1, the project plans to work in at least five countries (Ethiopia, Guinea, Liberia, Mali, and Tanzania) around supply chain system strengthening. We will employ the following strategic approaches to the areas identified above:

Technical Approach

Standardization and Selection

Together with the IDDS approach to ensuring functional equipment, IDDS will work with national stakeholders to standardize and select commodities where permitted by national procurement regulations. Extrapolating from the

baseline standards put forward by the Maputo Declaration of 2008, the resulting Consultation on Technical and Operational Recommendations for Clinical Laboratory Testing Harmonization and Standardization, the Asia Pacific Strategy for Strengthening Health Laboratory Services, and the Freetown Declaration of 2015, IDDS will work with partners and stakeholders to create new national commodity

policies, inclusive of priority pathogens and antimicrobial resistance. These will govern the selection of commodities while attempting to standardize selection to commodities that meet key criteria. Reducing the range of commodities procured streamlines the process and can lead to economies of scale.

Using tools such as the United States Agency for International Development (USAID)-supported Assessment Tool for Laboratory Services (which collects information on a country's laboratory supply chain) IDDS will be able to determine whether national policies exist. If policies already exist, IDDS will work with countries to update and revise them as necessary, and create mechanisms for country-wide dissemination and adherence. If effective coordinating bodies exist, IDDS will work to strengthen them, and if they do not exist, IDDS will work with national governments to create them. When undertaking the standardization and selection of commodities with governments and stakeholders, IDDS will consider items such as: quality, available sources of production and supply (multi-source, limited source, sole source, pricing), shelf-life, and temperature storage requirements. IDDS will also help countries ascertain which purchasing methods are appropriate as ways to find the best price (e.g., limited international bidding or sole source).

Where applicable, IDDS will work with the fragmented human and animal health supply chains to standardize commodities that are being selected because many of the same tests, platforms, and reagents are used, and this can lead to pooled procurements. In later years, as procurements become more standardized, it may be possible to look at pooled procurements or framework contracts with multiple countries that may lower prices. IDDS efforts will also seek to engage the private sector. IDDS will seek to collaborate with existing global supply chain mechanisms, such as those in the USAID Global Health Supply Chain Program, which have been established to support specific diseases. IDDS will explore how such mechanisms can be coordinated and consolidated to include commodities for Global Health Security Agenda priority pathogens.

This may also act as an incentive for countries to ensure that stakeholders and partners comply with standardization policies and will lead to greater sustainability.

Supply Planning (Forecasting and Quantification)

After determining which diagnostic commodities for priority pathogens and antimicrobial resistance are needed, IDDS will work with governments to accurately quantify and forecast for national needs. These efforts will ensure that quantification and forecasting can be done at all levels, dependent on the



country-specific ordering process (e.g., push or pull systems). These processes have typically been program specific, so IDDS will work with those programs to incorporate the commodities.

IDDS will also seek to use established tools that are already in use in IDDS countries. For example, ForLab, developed with USAID support, is a standardized, open-source tool that is used in more than 23 countries for forecasting and quantification. It enables countries and programs to collect and analyze data to accurately forecast commodity needs and can perform long- and short-term forecasts. IDDS will also explore using innovative electronic systems, including mHealth applications. At the primary tier, IDDS will work with projects such as the Global Health Supply Chain—Procurement and Supply Management and will seek to incorporate the priority commodities in already established templates, whether they are paper or electronic.

Through these efforts, IDDS will help ensure that countries can develop evidence-based supply plans that allow consistent and reliable supplies to be available throughout the diagnostic network.

Distribution

As commodities come into countries, parallel disease program systems and the lack of sustainable transportation options leave many commodities at the central or regional level, and they do not make it to the service delivery point or “last mile.” IDDS will take a multi-faceted approach to ensure that priority pathogen commodities are delivered to the primary or secondary tier diagnostic sites. IDDS will work with other human and animal health programs to assess the integration of commodity delivery. Within these systems, IDDS can work with stakeholders to optimize routes, ensure proper handling and commodity integrity.

If current transportation options cannot be integrated or

optimized, IDDS will work with countries to convene working groups that assess alternative options, such as private sector capacity and the use of third party logistics providers. IDDS will also work with the Interagency Supply Chain Group that coordinates investments in unmanned aerial systems (drones). IDDS countries that are willing to be test cases for using unmanned aerial vehicles could potentially be supported.



Service Delivery Point Storage

In many countries, storage of priority pathogen commodities is inadequate throughout the tiered diagnostic network, whether at the central, regional, or primary site. IDDS will work with other stakeholders and programs at all levels to provide adequate storage, with a focus on the primary and secondary laboratory tiers. This will include optimizing current storage space and design flow to ensure that commodities are stored in separate areas that are organized and ventilated and maintain commodity integrity. This includes safety cabinets for dangerous chemicals and refrigerators to maintain cold-chain fidelity. During the commodity selection process, IDDS will provide guidance to countries in the selection of quality commodities that do not have specific cold-chain requirements, making for easier and more cost-effective storage throughout the distribution and use cycle.

Inventory Control and Management

Inventory control and management systems are necessary for laboratories to keep track of when to request a commodity, how much to request, and how to maintain ideal stock levels to prevent stockouts, while also avoiding surpluses that lead to expiry and waste. IDDS assistance will build on partner tools to expand inventory control management systems to the first tier in the diagnostic network. Depending on the country context, the inventory management system can take various forms, such as a manual card system, a spreadsheet, or an electronic system that automates some of the tasks. Mobile applications will also be explored, depending on the country and context, and these can be especially helpful at the primary and secondary tiers for simple and expedited tracking and ordering. This is further facilitated if bar codes can also be employed. Many countries are piloting or have implemented laboratory information management systems, and IDDS will work with those partners and stakeholders to integrate this work and ensure that priority pathogen commodities are included.

Cross-cutting

To achieve sustainability, the budgetary requirements and financial sources for each area must be considered. IDDS will help countries develop budgets for these approaches, taking into consideration all sources of funding in consultation with partners and stakeholders. IDDS will also provide training to appropriate diagnostic personnel in developing annual operational plans and in using commodity-use data to refine these plans.

IDDS will also assist countries to define a monitoring framework and indicators for monitoring and evaluating the implementation of these approaches. This will include establishing mechanisms for monitoring the implementation of activities, including establishing regular reporting mechanisms, and holding regular review meetings with stakeholders to assess progress.