Projects & Products

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The **Digital Initiatives Group at I-TECH (DIGI)**, in the University of Washington's Department of Global Health, delivers innovative, appropriate, and user-centered digital health solutions that improve access to information and support decision-making by health workers, clients, and communities. The current projects and products DIGI supports fall under four of our priority technical areas: Software Design & Development; Health Systems Architecture; Evidence-Based Evaluation and Implementation; and, Digital Health Workforce Development.

Software Design & Development

Côte d'Ivoire Lab Information Systems (LIS): For a decade, I-TECH has worked in Côte d'Ivoire in collaboration with the CDC to develop and implement an electronic laboratory information system (LIS) in key laboratories, OpenELIS Global. I-TECH has worked closely with the Ivorian Ministry of Health and Public Hygiene (MSHP)'s *Direction de l'Informatique et de l'Information Sanitaire* (DIIS) to identify, develop, and reinforce the capacity of local professionals to lead and conduct LIS training, deployment, and maintenance activities in anticipation of national rollout of the LIS at 96 general hospital laboratories. In 2018-19, the team reengineered OpenELIS Global to meet supported, hardened Center for Internet Security (CIS) standards and convert the Java framework from Struts I to Spring. The platform also offers a viral load dashboard and key features for the scale up of viral load monitoring for HIV care and treatment (batch entry, study support, and barcoding).

Malawi Recency Testing Data System: I-TECH supports end-to-end collection and use of Recent HIV Infection Surveillance data (recency) through an integrated approach to the design of primary registers for recency surveillance, Open Data Kit (ODK)-based tools for collecting and performing QA/QC on the recency data, and connecting dashboard tools to the recency data for standardized and flexible presentation of the data to stakeholders.

South Africa Policy Information Management System: I-TECH provides technical assistance as the South African National Department of Health on the design, development, testing and deployment of a national Policy Information Management System (PIMS). The purpose of the system is to manage and support the policy development and approval process, provide a centralized repository for approved policies, and track policy adaptation and implementation at decentralized levels of the health system.

Zimbabwe Data Governance and Management: I-TECH Zimbabwe is a PEPFAR direct service delivery partner, supporting HIV testing, linkage, care and treatment services in more than 300 health facilities. Traditional data collection and management tools and processes have large gaps in data quality and are not optimized for performance monitoring, quality improvement, and reporting. I-TECH is investing in improved tools and processes for data governance, data capture, and reporting, including mobile data collection.

Health Systems Architecture

Botswana National Data Warehouse and Dashboards: I-TECH has worked with the Ministry of Health and Wellness (MOHW), Centers for Disease Control and Prevention (CDC), and other implementing partners in Botswana to develop and implement robust national HIS that enable greater efficiency and accountability and strategic use of information. I-TECH's work on the National Data Warehouse ensures the availability of strategic information to monitor progress toward reaching epidemic control, with particular focus on Treat All, linkages to care, and HIV clinical cascade for 90-90-90 care continuum.

Cameroon HIS Strategic Planning: National strategies, policies, and governance define the implementation environment for health information systems (HIS), which are recognized as a foundational building block for health system goals, including universal health coverage and control of HIV and other infectious diseases. I-TECH is supporting Cameroon's Ministry of Health (MOH) to develop a national eHealth strategic plan by September 2019. A goal of the project will be to develop governance structures and processes, which can continue onward beyond the strategic planning process under MOH leadership, for on-going strategic direction, coordination, and oversight of investments in the national health information system.

Haiti HIS Architecture: At the request of the MSPP and the Centers for Disease Control and Prevention Global AIDS Program in Haiti (CDC GAP), I-TECH began developing electronic medical records system called iSanté in 2005. iSanté is used at over 150 hospitals and clinics around Haiti and includes about1.3 million patient records. The system includes patient care summaries, population-level data dashboards, automated program reports, epidemiological monitoring, and indicator reporting, and is linked to the open-source lab information system OpenELIS, an open source LIS developed by I-TECH and used in multiple countries by numerous Ministries. With demands for nation-wide biometric identification, continuity of care, and the ability to send and receive lab results electronically between clinical and referral labs, I-TECH conducted a national review of the systems and architecture. Current efforts to modernize the system and the overall architecture are underway, rebuilding it on an OpenMRS platform, adhering to the Open Health Information Exchange (OpenHIE) pattern and international health informatics standards. iSantéPlus is currently being rolled out nationwide, with additional modernization efforts scaling up through 2019 and 2020.

Evidence-Based Evaluation and Implementation

Cambodia Enhancing Quality of Healthcare Activity: In partnership with FHI360, I-TECH will strengthen data systems on human resources for health in Cambodia. Specifically, I-TECH will help to design and implement a national electronic database for systematic monitoring and management of health care practitioner registration and licensure. In 2019, I-TECH will carry out a rapid assessment to determine the extent to which the existing registration management system meets the needs of the Health Professions Council, identify gaps and needs that stakeholders feel should be incorporated into the data system, and clarify requirements for a strengthened HRH registration data system.

Malawi Case-Based Surveillance Design and Evaluation: Strengthened surveillance capacities and systems required to measure the population-level impact of HIV interventions as the program strives to attain the UNAIDS 95-95-95 treatment targets. I-TECH collaborates with Malawi Ministry of Health (MOH), Baobab Health Trust, and CDC to develop and implement a secure, electronic, person-level HIV surveillance system capable of supporting case-based surveillance (CBS) and providing business value to MOH. I-TECH is supporting the completion of the CBS system, its pilot implementation, and its evaluation to determine if it meets stakeholder needs and is suitable for scale up.

Guyana HIS Evaluation: As part of strategic planning for digital health in Guyana, I-TECH completed an evaluation of the Guyana Health Information System (GHIS), a facility-based electronic medical record system. The purpose of the evaluation was to: understand the extent to which the GHIS has achieved its intended outcomes; determine the potential for future scalability and sustainability of the GHIS; and inform decision makers as they develop a national eHealth strategy.

Digital Health Workforce Development

Kenya HIS Curriculum Development: I-TECH supports partner Palladium to develop training curricula and video job aides to train health workers on various digital health tools including electronic medical records, smartcards for unique person identification and records transfer, HIV testing data system, automated indicator reporting, and use of an interoperability layer to support data exchange between systems.

TrainSMART: The Training System Monitoring and Reporting Tool (TrainSMART) is a web-based data collection system that allows users to track training programs, enter information about trainers and trainees, evaluate programs, and report activities to stakeholders. In addition to capturing training data, TrainSMART has a robust reporting module that allows users to run various automatic reports, as well as create and save customized reports for any time period. I-TECH has supported the deployment of TrainSMART in over 30 countries, working closely with ministries of health to adopt and transition the tool to local ownership.