

# Systems Strengthening in Health Care, Training, and Education

I-TECH works to strengthen the following systems that support the provision of high-quality, sustainable prevention, care, and treatment of infectious diseases.

## Strengthening clinical care and treatment systems

**I-TECH clinical mentors** work to strengthen the provision of care for people living with HIV and AIDS, tuberculosis (TB), and sexually transmitted infections (STI) by assessing and making recommendations for improvements to service-delivery systems. Clinical mentors **pilot and implement draft tools, algorithms, and guidelines** that help providers offer quality care. I-TECH also applies quality improvement strategies such as Plan-Do-Study-Act (PDSA) cycles to construct improvement goals, test proposed changes, and implement adjustments that lead to increased quality of operations, service delivery, and care.



## Strengthening health information systems

I-TECH has significant capacity in the rapidly expanding field of health informatics for resource-limited clinical settings. I-TECH **develops tools and systems and provides technical assistance** for electronic medical record, training management, and remote clinical diagnostic systems.

## Strengthening laboratory systems

I-TECH strengthens laboratory facilities by **equipping labs** with up-to-date materials and supplies, **designing laboratory information systems, providing training**, and supporting the introduction of new diagnostics.

## Strengthening training and education systems

I-TECH, a joint program of the University of Washington and the University of California, San Francisco, draws on deep **clinical and pedagogical expertise** to strengthen educational institutions that coordinate, design, deliver, monitor, and evaluate courses, degree programs, and workshops on HIV and AIDS and other infectious diseases.

## Core Capabilities

### Strengthening clinical care and treatment systems

- Through mentoring, provide technical assistance, leadership, and advocacy for changes in infection-control practices, patient flow, management, and other areas.
- Develop, review, and adapt clinical protocols, care management models, and standards of care for infectious diseases.
- Lead teams in the application of quality improvement principles and strategies.

### Strengthening health information systems

- Assess information management needs of health systems.
- Develop and/or adapt electronic health information systems for clinical services using appropriate information-technology platforms with an emphasis on open-source software solutions.
- Provide training and technical assistance for the scale-up of informatics systems in resource-limited settings.

## Strengthening laboratory systems

- Mentor and train laboratory and health care professionals.
- Support infrastructure development for clinical and public health laboratories.
- Implement strengthened paper-based and electronic laboratory information systems.
- Support the development of standard operating procedures and quality assurance guidelines for clinical and public health laboratories.

## Strengthening training and education systems

- Assess the capacity of education and training institutions to design, deliver, and evaluate curricula and training programs.
- Build the capacity of training staff and education faculty in instructional design, course delivery, and monitoring and evaluation.
- Advise on appropriate systems for managing training data, and support the use of TrainSMART, a new Web-based training database.
- Provide materials such as computers, LCD projectors, and electronic and hard-copy texts to the libraries of training and education institutions.
- Advise on the design of processes for coordination, scheduling, quality assurance, and monitoring of training.
- Write and disseminate technical guides on diverse aspects of training and education.

## Sample Projects

### Strengthening South Africa's training delivery

I-TECH has supported the growth of four Eastern Cape Regional Training Centres in South Africa. This assistance includes assessing the training and educational needs of Eastern Cape health care workers, assisting with the development of detailed workplans, helping to build linkages with community and other training organizations, building systems and models of care and treatment, and developing process and outcome evaluation tools.

### Developing an electronic medical record system in Haiti

I-TECH helped to develop and implement a national HIV electronic medical record (EMR) system, called iSanté. The system is used in more than 30 facilities and includes longitudinal records for more than 20,000 patients. It supports clinical decision making and facilitates program reporting.

### Design of a laboratory information system in Haiti

Currently, I-TECH and the UW-based Clinical Informatics Research Group (CIRG) are working with the Haiti National Public Health Reference Laboratory to adapt the OpenELIS open-source laboratory information system (LIS) for local use and to develop a system for training and scale-up of the computerized system. The first phase of Haiti LIS implementation includes a closely related paper-based log system that serves a backup function as well as informs standardized processes among laboratories.

## Sample of I-TECH Support Tools for Systems Strengthening

### For clinical care and treatment:

- *Pocket Guide for Health Care Providers Working with Men Who Have Sex with Men and Transgender Persons*
- *HIV & AIDS Pocket Guide for Nurses (Caribbean)*
- *Management of STI Clinical Photo Reference and Flowchart (Botswana)*
- *Namibia Guidelines for ART [Antiretroviral Therapy] and Tuberculosis (Namibia)*
- *HIV Rapid Testing Guidelines*

### For training institutions:

- *Training Toolkit*
- *Guidelines for Instructional Design & Materials Evaluation*
- *Building a Training Program*
- *Developing Needs Assessments and Using Data to Inform Training*
- *Piloting a Curriculum: Evaluating the Effectiveness of a New Training*

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