Training and Education

USING DISTANCE EDUCATION TO BUILD CAPACITY IN HIV/AIDS EPIDEMIOLOGICAL SURVEILLANCE IN AFRICA

KENYA, NIGERIA, TANZANIA

Background

Surveillance plays a crucial role in our understanding of the HIV epidemic, enabling public health professionals to assess trends in HIV prevalence and risk behaviors across populations. Human resource challenges in sub-Saharan Africa and insufficient training of public health surveillance personnel have hindered the ability of many countries in the region to carry out effective HIV surveillance. To strengthen capacity in this area, a branch of the Centers for Disease Control and Prevention (CDC) has supported teams of trainers to travel to resource-limited settings to conduct brief, in-person training sessions on surveillance with local public health professionals. While effective, using mobile teams of educators to provide training to working professionals in a traditional classroom setting has several drawbacks: it generally requires participants to miss work, it is relatively costly, and it limits the feasibility of training participants from different geographic locations.

Project Overview

From 2009 to 2013, ICAP collaborated with the CDC to design, pilot, and evaluate a new approach—using distance education—to build surveillance capacity among public health professionals in sub-Saharan Africa. After adapting existing training materials for distance education, ICAP piloted the program in Tanzania, expanded it to Nigeria and Kenya, and then built the capacity of a local team in Kenya to independently implement the courses.

Course Adaptation Process

ICAP brought together a team of experts to redesign four existing CDC surveillance modules, creating two distance education courses based on adult learning principles and best practices in distance education and educational design (see Box 1). Leading up to the pilot in Tanzania, ICAP also collected information from registered course participants to further tailor the course content to meet participants' expectations and match their existing proficiency level.

Course Structure

The two new courses were 10-12 weeks in length and were de-

Box 1: Training Modules Redesigned to Form the New Distance Education Program

Existing CDC training modules	New distance education courses
• Overview of the HIV/AIDS Epidemic with an Introduction to Public Health Surveillance • HIV Serosurveillance	• 1: Introduction to HIV/AIDS and STI Surveillance
• Surveillance of HIV Risk Behaviors • Surveillance of Most-At-Risk Populations (MARPS)	• 2: Introduction to Behavioral Surveillance

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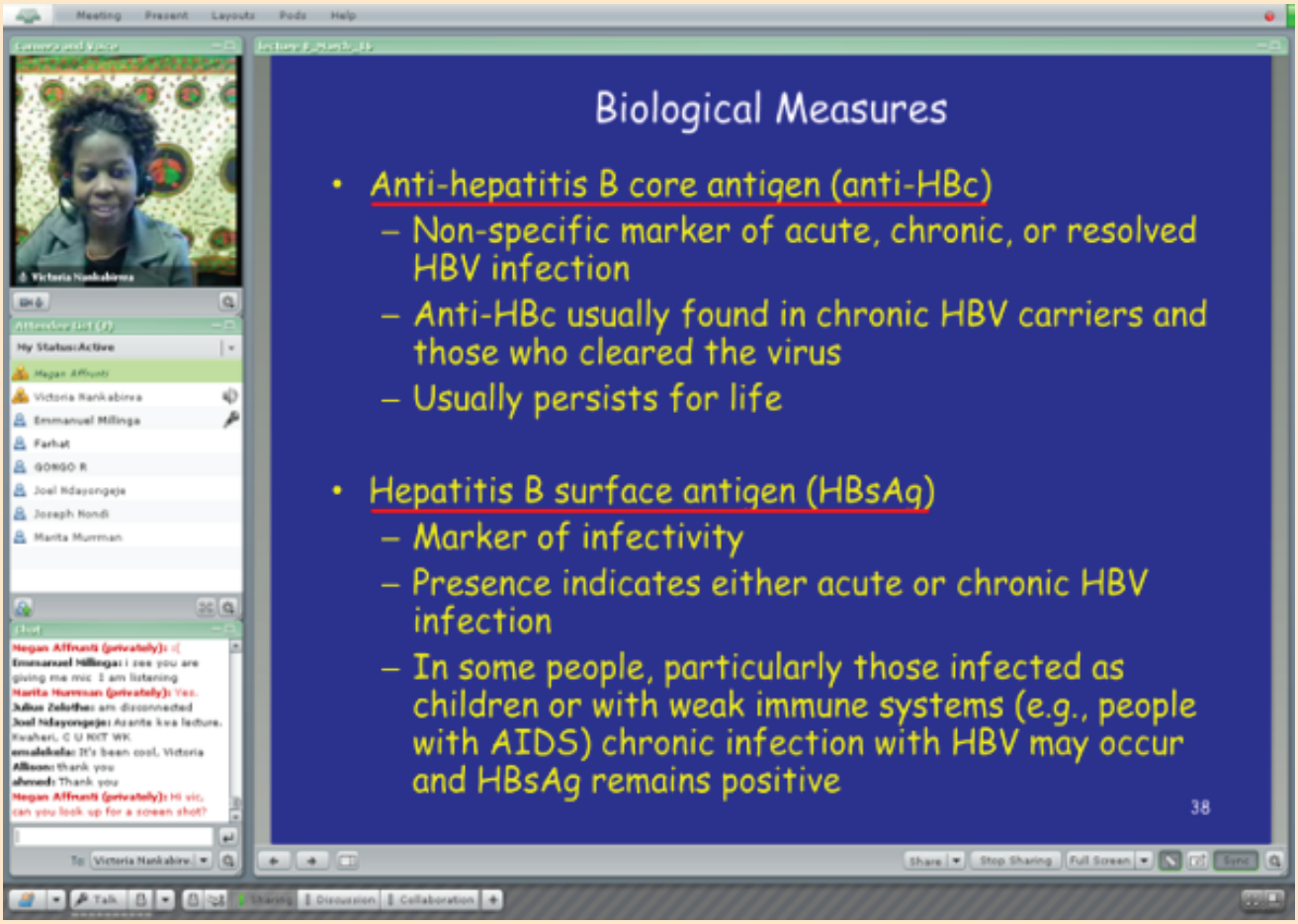
livered in sequence via an interactive "virtual classroom." Each week, participants convened online for a 90-minute synchronous lecture, followed two days later by a 90-minute synchronous discussion session. Course participants viewed a streaming, live video of the instructor teaching the course via an Adobe Acrobat Connect Pro platform and concurrently viewed Powerpoint slides highlighting key points (see figure). Participants could hear each other ask and respond to questions, and could also communicate using the chat function. Each lecture included opportunities for participant interaction, including verbal questions and answers, as well as interactive polling exercises whereby participants answer a multiple-choice question and the frequency of each response is immediately displayed. To encourage participants to think critically about the content, they were also required to submit "warm-up" questions before each lecture and homework assignments before each discussion session. Each course culminated with participants completing a final report that provided an opportunity to apply the knowledge and skills gained.

Course Implementation, Evaluation, and Expansion

In 2009-10, ICAP piloted the new distance education courses with 24 public health professionals in Tanzania. Participants were recruited from local ministries of health, local CDC and ICAP offices, and other organizations involved in HIV surveillance in Tanzania. After both courses had been completed, ICAP conducted an evaluation of the program to document participants' experience and assess the courses' impact on participant knowledge and self-efficacy. The findings were positive (see Box 2) and lessons learned were used to further enhance the courses. Next, ICAP implemented the distance education program in Kenya and Nigeria (see table), with similarly positive outcomes. The following year, ICAP trained staff from Kenya's National AIDS and STIs Control Program (NASCOP), the University of Nairobi, and ICAP's local staff in Kenya to conduct and evaluate the distance education program, further building local capacity and increasing the program's future sustainability. After providing the local team in Kenya with two months of in-person

Figure: Snapshot of the Virtual Classroom



Box 2: Key Evaluation Findings

- Participants showed improvement in their **HIV surveillance knowledge**.[2]
- Participants self-reported that their **confidence with specific HIV surveillance tasks increased**.[3]
- The majority of participants (58% for the first course and 80% for the second course) reported that the courses **"completely met" or "exceeded their expectations."**
- Most participants (68% for the first course and 80% for the second course) indicated that the courses were **"very useful" in relation to their job responsibilities.**

and distance education training, both courses were taught for the first time by a local instructor, an epidemiologist from the University of Nairobi Health Services Center.

What Was Achieved

The program demonstrated the feasibility and effectiveness of using distance education as an alternative to face-to-face training to improve the surveillance skills and knowledge of public health professionals in resource-limited settings. It also demonstrated the feasibility of building the capacity of in-country teams, in a relatively short period of time, to implement and evaluate distance education courses that aim to strengthen HIV surveillance capacity. Despite some technological and attendance challenges, participants rated their overall experience of the online classroom positively and achieved positive learning outcomes. Trainees expressed particular appreciation for the convenience of the online classroom, which allowed them to balance their participation in the courses with busy work and travel schedules.

Table: Number of Health Professionals Trained

Country	Course 1	Course 2
Tanzania (pilot)	24	20
Nigeria	16	14
Kenya	Year 1: 16 Year 2: 23	Year 1: 15 Year 2: 20
TOTAL	79	69

Lessons Learned

Lessons learned during implementation of the distance education program include:

- Between 20 and 25 course participants is a reasonable number of students for one instructor and one teaching assistant to manage effectively.
- This type of course tends to function best when participants have similar surveillance-related knowledge and skill levels at the start of the first course.
- An in-person orientation session prior to the course is valuable for many reasons, including that it provides an opportunity to discuss goals and objectives for the program, facilitates the development of a social network among course participants, and provides an opportunity to review the course syllabus together and discuss minimum course requirements and incentives for course completion.
- A course website or Wiki that includes all course materials and that can be accessed by all participants is beneficial to the management of distance education courses (and decreases the number of course-related emails sent).
- Recording distance education sessions and making them available to course participants is extremely beneficial, as this enables students who missed sessions to watch them later. Recorded sessions also serve as an important study tool for participants who want to listen to specific sessions more than once.
- It is important to identify a method of supporting consistent internet access among participants so they can participate actively in the sessions. For this program, 3G devices were provided to each participant to help ensure steady internet access. While the cost was relatively high, three-quarters of pilot participants reported that the 3G device "very much enhanced" their ability to participate in the course.

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