

Quality Improvement Program

I-TECH's quality improvement approach emphasizes ongoing assessments of program aims and operations. Country projects apply Continual Quality Improvement (CQI) strategies targeting both programmatic and management activities. Small-scale, practical *Plan-Do-Study-Act* cycles (PDSA) are used to construct improvement goals, test proposed changes, and implement adjustments, leading to increased quality of operations, service delivery, and care.

In addition to routine monitoring and evaluation (M&E) and CQI, I-TECH designs and implements operations research (the application of research methodology to inform and improve program design and management) and special studies for both I-TECH country programs and our partners. These activities enable us to answer strategic questions concerning the selection and effectiveness of program interventions. The team analyzes and designs evidence-based solutions to increase relevance, access, and scope of HIV services. Key findings are communicated to managers and leaders to improve programmatic decision-making, and are disseminated through publication, when appropriate.

This booklet contains examples of operations research and special studies undertaken by I-TECH in collaboration with our partners.

For more information about I-TECH's capacity to conduct operations research or special studies, contact the I-TECH Director of Quality Improvement, Gabrielle O'Malley, PhD, at <gomalley@u.washington.edu>.

Program Evaluation for the Implementation of the Revised Syndromic Management Algorithms for Sexually Transmitted Infections in Two Districts in Botswana (2005)

BACKGROUND: In the early 1990s, Botswana's Ministry of Health (MOH) adopted syndromic management for sexually transmitted infections (STIs) as part of its STI and HIV prevention and comprehensive reproductive health strategies. The MOH reviews and updates its national syndromic management protocols based on periodic etiological studies and other developments in health care.

Following an etiological study in 2002, the STI subunit of the MOH's National STI Research and Training Center, with support from I-TECH, created training materials for a 3-day training to introduce the revised STI management algorithms to health care professionals nationwide. The revised algorithms included treating genital ulcer disease with antiviral therapy. At the same time, the national government put in place the policy of routine HIV testing for STI patients, which was also

included in the revised algorithm. Further, material on how to deliver routine HIV testing was integrated into the training curriculum. Prior to scale-up of the training program, the MOH asked I-TECH to evaluate the effectiveness of the training program in two health districts—Chobe and Lobatse.

The objectives of this program evaluation were to assess:

- The user-friendliness of the revised STI syndromic management algorithms.
- Health care professionals' ability to perform appropriate STI case management after training using the revised national training curriculum.
- The acceptability and use of routine HIV-testing procedures by health care professionals after training in the context of STI care.
- Health care professionals' ability after training to perform appropriate patient education and counseling about STI management, risk reduction, and partner notification.
- Returning patients' adherence to treatment and improvements in their STI-related conditions that were treated under the revised STI syndromic management guidelines.

- The availability, distribution, and appropriate prescription of acyclovir.

METHODS: The evaluation included post-training data collection in the two intervention districts and data collection in one comparison district (South East District). Nine health facilities in the training districts and seven facilities in the comparison district participated in the evaluation. In total, 145 patient visits were observed, 350 patients were interviewed and had data abstracted from their outpatient records, and 18 key informant interviews were conducted. Two hundred and twenty-five health care professionals were trained.

FINDINGS:

- Participants' self-assessed level of knowledge and skills in key areas of the training course increased. The largest self-assessed improvements in knowledge and skills were in risk reduction, patient-centered care, and integrating STI risk assessment, risk reduction, and routine HIV testing into a primary care visit.
- As rated by patients, health care professionals in the training districts delivered more patient-centered care than their colleagues in the comparison district.
- Significantly more patients in the training districts reported that a health care professional physically examined them during their visit than in the comparison district.
- Patients at the training sites were significantly more likely to be offered routine HIV testing than at the comparison site.
- A significantly higher percentage of patients in training districts were able to cite information that the health care professionals told them about STIs than in the comparison site.
- Health care professionals observed after training performed most steps related to history taking, but often failed to complete risk assessment steps integral to the STI syndromic management algorithms without prompting by observers.
- Health care professionals observed after training performed most steps of the physical exam without prompting.
- Observers prompted the health care professionals to reconsider their prescriptions for patients during 19% of visits. Observers were significantly more likely to prompt them to reconsider prescriptions for patients with vaginal discharge and/or lower abdominal pain, and less likely to prompt for patients with urethral discharge.
- Treatment was appropriately prescribed in 89% of the cases observed.
- Treatments for observed patients were compared to projected treatments for the patients in an HIV prevalence study (2002), which showed evidence of undertreatment with acyclovir for patients with genital ulcer disease (GUD) and overtreatment for chlamydia and gonorrhea or pelvic inflammatory disease among patients with vaginal discharge and/or lower abdominal pain.
- Health care professionals who attended training made good progress in providing patient-centered care, but some aspects, such as helping patients develop a risk-reduction plan and set realistic behavior-change goals, could be strengthened.
- Some health care facilities did not have supplies needed to provide STI care, such as patient education materials, condoms, and contact slips.
- Acyclovir was dispensed in the correct dosage 96% of the times that it was prescribed, and it was dispensed for treatment of GUD or genital herpes 94% of the times that it was prescribed.
- The percentage of visits with contact slips did not differ significantly between training and comparison sites.

For an article based on these findings, refer to: Weaver MR, Myaya M, Disasi K, Regoeng M, Matumo HN, Madisa M, Puttkammer N, Speilberg F, Kilmarx PH, Marrazzo JM. "Routine HIV Testing in the Context of Syndromic Management of Sexually Transmitted Infections: Outcomes of the First Phase of a Training Program in Botswana." *Sex Transm Infect.* 2008; 84 (4): 259-264. The article can be accessed at <http://sti.bmj.com/cgi/reprint/84/4/259>.

HIV Needs Assessment of Female Sex Workers in Major Towns, Mining Towns, and Along Major Roads in Botswana (2006)

BACKGROUND: I-TECH conducted this formative assessment in collaboration with Matsheho Community Development Association (MCDA) to inform HIV prevention strategies for female sex workers (FSW) and their male partners. The assessment focused on the following field sites: Francistown, Gaborone, Ghanzi, Kasane, Letlhakane, and Selebi-Phikwe.

The assessment aimed to:

- Compile a list of partners best positioned to help reduce the risk of HIV and AIDS for and by FSW.
- Describe the current nature of high-risk behaviors and situations for FSW in Botswana (locations, motivations for behaviors, risk recognition for HIV, constraints and cultural supports for their practices in FSWs' daily lives, type of sexual practices and characteristics of sexual partners from FSWs' and males' perspectives).
- Describe the current state of clinical and social services available to and used by FSW.
- Provide timely information to make recommendations to the government, donors, and implementers for future clinical and social programs targeted at FSW, men potentially at risk of HIV acquisition from FSW, and high-risk situations as appropriate.

METHODS: In-depth interviews (IDI) were conducted in 6 towns across Botswana (as noted above) with 17 health care providers, 16 traditional/faith healers, 13 non-governmental organizations, and 30 FSW. Focus group discussions were also held with 6 groups of 3 to 4 men (n=20 total). FSW were identified via observations on roadsides, in bars and hotels, or via key persons, such as hotel employees and other sex workers. Constant comparative and phenomenological approaches were used to analyze data.

FINDINGS: Stigmatization, group organization, and HIV and AIDS risk for FSW varied by town. For example, high stigma, low visibility, small FSW networks, and high-risk behaviors characterized FSW groups and behaviors in Ghanzi, while medium stigma, high visibility, large FSW networks with peer leaders, and lower risk behaviors typified those found in Francistown. Among FSW, there is extensive individual variation in working hours, location, condom use, and self-defense strategies—all of which put FSW at variable risk for HIV. Participants commonly attributed entry into sex work to perceived failure of male partners to adequately provide for them, as well as lack of female earning power. Women described sex work as a means for financial and personal autonomy. Most hid their work from their families. Some used alcohol daily to ease their transition into sex work while others refrained to remain alert when working. FSW accessed free condoms, STI treatment, and VCT services at public health clinics but never revealed their risk for STIs and/or HIV. FSW who were

not citizens of Botswana perceived a threat in the new requirement for identification, usually their passports, when accessing health care. Most FSW feared disclosure, entrapment, theft, physical violence, rape, pregnancy, and STIs and/or HIV. Though most FSW wanted to leave sex work, very few saved from their monthly earnings (≈US\$ 160–1,000) or used it to gain vocational or professional skills.

In focus group discussions with men, it was reported that some men sought sex with unknown women due to their inability to meet the increasing material demands from wives or girlfriends. Instead, they used their small budgets to find sexual relief using FSW. Most of the study's male informants believed that men indulged in casual sex due to use of alcohol, sexual abstinence, a wish for excitement and adventure, and to appear as men of means. Some male participants reported using condoms (though not consistently), while others reported a willingness to pay more for unprotected sex and the accompanying increase in sexual pleasure, as well as the thrill of risking the danger of STIs and/or HIV.

Men wanted women to take more responsibility for condom use if they were sexually available for money and had multiple partners. Male informants also suggested that HIV and AIDS campaigns "make a big mistake by targeting women only and not targeting men" because the campaigns need to look at both sides of the market. "There is demand and supply." Men offered suggestions based on best practices for health promotion and culturally embedded consultative processes. In general, they felt health promotion needed to be more innovative and participatory to reach the people.

Health care services were accessed and appreciated by both men and women. However, women did not reveal their risk for STIs and/or HIV to providers of those services. Men did not test for HIV, preferring to infer their results from those of their intimate partners. Health care workers prided themselves on providing equitable health care to all their patients, yet conceded that FSW might not be receiving appropriate counseling and treatment because of nondisclosure. However, they were not able to articulate how the needs of FSW might differ from those of other women. Only one traditional healer specifically served women in sex work, to address the conditions peculiar to their work.

Very few organizations directly targeted FSW to offer assistance. One exception was the Matsheho Community Development Association (MCDA), a network organization working in 16 places (including in partnership with Nkaikela in Tlokweng) to reach sex workers largely through funds provided by the Norwegian and Swedish Embassies through the Project Support Group (PSG) Basket Fund. FSW in the networks received health promotion and HIV prevention information, safety tips, support for appropriate care seeking, linkages to designated STI clinics, and vocational training to help with exit from sex work through peers. Other organizations did not directly engage with sex workers, partly because of the existing legal frameworks on sex work. Instead, for example, they promoted condoms among young women in bars with the hope that they were reaching some sex workers. Others offered vocational training in usually female dominated fields, such as cookery.

Overall, participants felt that the government needed to revisit policies on education, employment, minimum wage, and sex work to address the legal, social, and health care needs of women. While some grassroots organizations had taken initiative and strove to address issues of gender, poverty, and HIV, the not-for-profit sector (non-governmental and community- and faith-based organizations [abbreviated as NGO, CBO, and FBO, respectively])—with a few remarkable exceptions—was largely weak and needed strengthening.

RECOMMENDATIONS: Geographical and individual variations in sex work preclude a single intervention for reducing the risks of HIV and AIDS transmission for FSW in Botswana. Addressing gender inequities through community consultative gender discussions and vocational/professional training for academically challenged girls may reduce women's entry into sex work. Harm reduction could include group formation, psychological and substance abuse counseling, self-defense, access to appropriate counseling for STI and/or HIV prevention through discrete clinics, saving schemes or microfinancing projects, and health promotion interventions that target FSW and their clients. To reduce the demand for FSW services, including unprotected sex, current initiatives focusing on men need to be strengthened. Interventions that provide men with alternative perspectives on desirable sexual behavior and modified gender expectations may reduce the demand for unsafe sex by generating cultural support for safer sexual practices.

There is much that can be done for FSW and their clients without requiring the government or NGOs, CBOs, or FBOs to change their positions or take a stand on sex work. These efforts can be directed at preventing entry into sex work, harm reduction in sex work, and facilitating exit for those women who want to stop engaging in sex work.

Monitoring Patients Lost to Follow-Up (LTFU) in Ethiopia (2007)

BACKGROUND: There are an estimated 1.3 million people living with HIV and AIDS (PLHIVs) in Ethiopia. In 2005, the Ethiopian Ministry of Health launched a free antiretroviral therapy (ART) program. As of April 2007, roughly 140,000 PLHIVs were enrolled in chronic HIV and AIDS care. Of these, 83,099 started on ART; however, only 76% (or 63,122) remained in care, leaving approximately 20,000 patients as lost to follow-up (LTFU).

Within the Amhara region, the number of PLHIVs is estimated at 444,560, of which 30,629 were enrolled in chronic care. Approximately 19,779 of patients had started ART, but only 79.3% (or 15,703) continued the therapy. This means that 20.7% of patients enrolled in chronic HIV and AIDS care did not show up to the clinic on their scheduled appointment dates, and thus could be considered LTFU.

The status of patients LTFU had not been established at most HIV and AIDS chronic care facilities—patients had simply been marked as “lost” in the ART register. In mid-September 2006, I-TECH led a pilot outreach program at Gondar University Hospital (GUH), which involved training and employment of ART patients to investigate patient LTFU cases.

The aim of the project was to:

- Identify reasons why patients at the ART clinic are lost to follow-up.
- Improve the adherence of ART patients by making contact with patients who do not show up to the pharmacy or clinic as instructed.
- Pilot test a mechanism for improving adherence and determining the outcomes of patients “lost to follow-up” that could be implemented at other ART clinics in Ethiopia and at other I-TECH hospital-based ART clinics.

METHODS:

- Review clinics' LTFU lists with other ward registration books to create an accurate documentation of current LTFU patients.
- Conduct telephone interviews with LTFU patients that had telephone numbers on file.
- Conduct home visitations and interviews with LTFU patients who were unreachable by telephone.

Qualitative Assessment of Possible Reasons for Refusal of HIV Testing at Public Hospital-Based Antenatal Care Clinics in Afar, Amhara, and Tigray Regions in Ethiopia (2007)

BACKGROUND: Data collected on activities for the prevention of mother-to-child transmission of HIV (PMTCT) from Amhara, Tigray, and Afar reveal that only a small proportion of pregnant women who were offered HIV counseling and testing in hospital-based PMTCT settings in 2005 and 2006 accepted the services. Those women who did not accept services represent a considerable number of missed opportunities to prevent HIV disease.

This research used qualitative methods to seek a greater understanding of how women experience and overcome barriers to HIV counseling and testing at PMTCT sites. The results will be used to inform program improvements, which aim to increase rates of acceptance of PMTCT services.

METHODS: Using a purposeful sampling strategy, the study selected six public hospitals that offer PMTCT services, yet have a history of low PMTCT uptake despite high numbers of clients seeking antenatal care (ANC) and a high HIV and AIDS disease burden. Two additional sites with known high PMTCT uptake were selected as comparison sites.

The study used three different methods of qualitative data collection: (1) In-depth, semistructured interviews of pregnant women who accepted testing, pregnant women who refused testing, and PMTCT counselors; (2) Focus group discussions of women attending ANC; and (3) Direct observation of counseling sessions and patient flow. Quantitative data was also gathered from ANC and PMTCT registers at the sites.

FINDINGS: The research was expected to elucidate women's individual experiences of PMTCT services, highlighting their decision-making processes with regard to HIV testing. Results to date suggest that specific qualities of PMTCT service delivery are more important in explaining uptake of HIV testing within the context of PMTCT services than intrinsic characteristics of ANC attendees. Pregnant women understand the risk that accepting an HIV test might pose to their relationships with their husbands and other family members, especially if their test results are positive. Despite these risks, they are willing to be tested, especially when an opt-out approach—meaning that HIV testing is a routine part of ANC—is used.

RECOMMENDATIONS: The study identified a variety of practices for increasing the uptake of PMTCT services. These included: developing buy-in among ANC and labor and delivery (L&D) staff for novel approaches to counseling and testing; rewarding and affirming demonstrated leadership among PMTCT service providers; making modifications to improve patient flow for women seeking PMTCT services; using documentation systems effectively to capture all new clients so they meet the PMTCT counselors; lessening the work burden on PMTCT counselors by focusing their jobs on specific tasks; using an opt-out approach in ANC; shortening the lab time for HIV test results to be returned; and establishing the trustworthiness and reputation of PMTCT counselors.

Ethiopia HIV/ART Nurse Specialist (HANS) Training Program Evaluation

BACKGROUND: Ethiopia faces a severe shortage of health care workers, with an estimated 21 nurses and 3 physicians for every 100,000 people (2003)¹. I-TECH's HIV/ART Nurse Specialist (HANS) Training Program develops essential skills for nurses, who represent nearly 90% of the health care workforce but are underused in Ethiopia's physician-based medical model of care. The training supports rapid scale-up of HIV care and treatment by enabling nurses to alleviate physician workload, thereby enhancing the ability of physicians to focus on patients with the most complex medical needs.

I-TECH Ethiopia has been providing basic ART and HANS training under its national Nurse Initiative Program. The

goal of HANS training is to increase nursing capacity for effective HIV and AIDS care and treatment by training nurses from clinical sites throughout Ethiopia. The HANS training provided by I-TECH is a 3-week intensive training program that includes interactive classroom based training (7 days), a clinical practicum (6 days at 5 hospital sites), onsite clinical mentoring (5 days), and ongoing clinical consultation and support.

METHODS: Evaluation methods included: pre- and posttests to assess change in participant knowledge before and after the training; observation-based skills assessments at clinical practicum sites; observation-based skills assessments of participants once they returned to practicing in their own facilities; clinical impact assessments via interviews and direct observation; and in-depth interviews with several HANS nurses.

FINDINGS TO DATE: HANS training has been effective in enhancing knowledge and skills of nurses in the provision of HIV and AIDS care and treatment. Participant's pre- and posttests showed a significant increase in knowledge. More importantly, participants demonstrated consistent improvement in performance of key competencies during their clinical practicums. The practicum component, which provided participants with the opportunity to observe, apply, and practice skills and knowledge acquired in the classroom, established a critical link between theory and practice. In addition, standardized observations of HANS-trained nurses at their own worksites indicated that HANS-trained nurses demonstrated all competencies to an acceptable standard or above.

Finally, the number of Ethiopian nurse mentors who were once themselves HANS trainees has increased over time. This reflects the expanded role of nurses as a result of the program, and indicates that one of the intended outcomes of the HANS program—that of building capacity within the Ethiopian health care system to train the nursing workforce in HIV and AIDS specialist care—has been successful.

Evaluation of National HIV Training Program in Tanzania (2007)

BACKGROUND: In 2007, it was requested that I-TECH conduct an evaluation of Tanzania's national care and treatment training program. The goal of this evaluation

was to gather data that would help inform the rollout of Tanzania's national antiretroviral drug (ARV) program through effective, decentralized training, which would increase the effectiveness of the national HIV/antiretroviral therapy (ART) training program.

The government of Tanzania began the care and treatment training program in July 2004 to support the provision of comprehensive HIV care and treatment services, including ARVs, by October of that year. International implementing partners and World Health Organization (WHO) representatives in the country collaborated to develop a standardized, PowerPoint-based curriculum, which was based predominately on source materials from Family Health International (FHI) and work done in Botswana by Harvard University, with input and content from other implementing partners.

The care and treatment training is delivered to multi-disciplinary teams composed of clinicians, treatment nurses, pharmacists, lab technicians, counselors, and home-based care providers. This standardized national care and treatment curriculum was used to train the staff of 96 large regional and district hospitals in 2004–2005, so they could begin providing care and treatment services. In the subsequent year, an additional 104 hospitals trained staff to initiate care and treatment services, with the goal of providing services to 100,000 patients.

The I-TECH training program evaluation was designed to answer the following questions:

- How well does the national ART curriculum facilitate effective teaching and learning?
- What is the National AIDS Control Program's (NACP) training strategy, and how is it implemented? Are there standards or quality assurance measures in place, and are they being met?
- Are participants acquiring adequate knowledge and skills in ART to provide safe and effective treatment?
- What are the recommendations for quality improvement for the national training program?

The intended audience for this evaluation was the Ministry of Health and the partners involved in funding and implementing HIV care and treatment in Tanzania.

METHODS: A variety of methods were used to obtain a comprehensive picture of the national training program.

The components of the evaluation included:

- Desk review of the national care and treatment curriculum
- Observations of care and treatment trainings
- Interviews with United States government implementing partners
- Interviews with facilitators, training participants, and facility managers
- Interviews with other stakeholders
- Service delivery observations

Interviews were conducted with 119 clinicians (physicians, nurses, pharmacists, and counselors) from 8 regions. In addition, 117 clinicians were observed while providing patient care. Observers were themselves ART-experienced clinicians who used a structured observation tool to document clinical practice.

The evaluation resulted in a set of recommendations for strengthening the curriculum, training delivery, and quality improvement systems.

Patients Lost to Follow-Up: Research into the Tradition of Holy Water and Implications for Patient Adherence to Antiretroviral Therapy in Ethiopia (2007)

BACKGROUND: In an I-TECH outreach project at antiretroviral therapy (ART) clinics of four Ethiopian public hospitals, patients on ART who did not return for routine HIV care were identified as “lost to follow-up” (LTFU). After phone calls and visits to individuals LTFU, investigators revealed that some LTFU patients had discontinued ART, opting instead for the sole use of clergy-blessed “holy water” to fight their symptoms of HIV. The objective of this study was to conduct formative research to create stronger adherence for HIV education messages (targeting pre-ART patients) about the importance of continuing on ART or the importance of continuing care (pre-ART) in addition to holy water.

METHODS: Data was gathered through observations, field note descriptions, and in-depth key informant interviews.

FINDINGS: Key informants interviewed attributed their HIV-positive status to “God’s rage” or “the devil’s work.” Unprotected sexual intercourse with multiple partners and substance use were seen as transgressions of

God’s laws. It was felt that holy water intake purged illness, restored the self-image as being worthy of love, and provided the possibility of a cure. Patients who chose to use holy water to treat HIV engaged in an iterative process wherein they reassessed their options between clinical treatment and holy water, based on their positive or negative health outcomes. Patients’ social influences; their experiences with illness, health care and treatment; and their religious beliefs contributed to their decision-making process. Most importantly, the patients believed that holy water was more likely than ART to lead to a cure. Hearing testimonies from others and stories from friends and family about such cures fostered this perception. For patients attempting to concurrently use holy water and ART, the conflicting regimen requirements of each—particularly when fasting—posed a significant challenge to ART adherence. Love demonstrated through the persuasion of “spiritual friends,” family members, and health care workers; the absence of respite from illness; and the incompatibility of holy water intake with their daily routine brought patients back to ART.

RECOMMENDATIONS: Retaining patients who have treatment dilemmas requires HIV clinical personnel to work with religious personnel to provide a model of faith and healing that precludes an “either/or” situation between ART and holy water. Focus should also be placed on sensitizing spiritual leaders to the need for patient adherence to ART concomitant to any faith-based healing practices. This can be done by bringing spiritual leaders into adherence discussions as stakeholders, and also asking spiritual leaders to provide training to medical personnel so they can better understand patient treatment requirements.

Evaluation of the Training of Técnicos de Medicina in Mozambique (2007–2008)

BACKGROUND: The Mozambican Ministry of Health (MOH) recently developed a plan for accelerated health care worker training that calls for the training of 950 new técnicos de medicina (TDM) by 2010. After the implementation of a 2-week in-service training on antiretroviral therapy (ART) for these mid-level providers, Mozambique’s MOH wanted to assess ART-related TDM clinical performance. The overarching aim of the activity was to guide forthcoming revisions to HIV and AIDS-related training of TDM at both pre-service and

in-service levels, and to identify system support gaps that, if addressed, could favorably affect the quality of HIV and AIDS care delivered by TDM.

METHODS: In October and November 2007, experienced clinicians (COs) observed patient consultations conducted by randomly selected TDM nationwide. The COs provided immediate, confidential feedback, with correction of clinical errors where indicated. Standardized instruments were used to record patient history, physical exam, lab results, and clinical decision making. Semi-structured interviews described health facility resources and constraints. Primary analyses (quantitative and qualitative) focused on errors in clinical staging and in management of cotrimoxazole (CTX) prophylaxis and/or ART.

RESULTS: COs and TDMs agreed about staging, CTX, and/or ART management in 20.2% of 127 clinical consultations carried out in 44 health facilities. In the remaining encounters, observed staging errors included: over-staging (misclassification of common illnesses as opportunistic infections OIs); under-staging (failure to detect OIs); down-staging (in patients who had improved with treatment); and premature determination of clinical stage before completion of appropriate patient evaluation. Errors common to both CTX and ART management included: inappropriate initiation (before completion of baseline evaluations, without adherence preparation, in the absence of indications, or in the presence of contraindications); failure to initiate when indicated; inadequate management of adverse drug reactions; and poor coordination of ART and CTX start-up. Other errors included premature discontinuation of CTX; failure to discontinue CTX once immune restoration occurred; and failure to recognize ART regimen failure. Interviews suggested the following reasons for observed errors: TDM had been trained to manage only stable patients, but their actual scope of work included care for complicated cases/ critically ill patients; physicians were often unavailable to provide clinical supervision and backup; there was an absence of laboratory capacity and clear, updated guidelines, which limited TDM capacity to distinguish OIs from other pathologies.

CONCLUSIONS: The evaluation methodology identified specific domains in which training had not adequately prepared TDM for actual clinical responsibilities, or existing health-system resources

were inadequate for providing care. In direct response, the MOH is reevaluating the TDM scope of practice, revising ART and OI curricula, and preparing new cadres of clinical mentors for TDM.

Evaluation of Training Capacity in Voluntary Counseling and Testing (VCT): Jamaica and the Eastern Caribbean (2006)

BACKGROUND: In 2006, I-TECH conducted an evaluation of Jhpiego's² voluntary counseling and testing (VCT) training activities in the Caribbean region from 2001 through December 2005. Funding was provided to Jhpiego by USAID/Jamaica, USAID/Caribbean Regional Program (CHART) and the Centers for Disease Control's Global AIDS Program (CDC GAP) under a number of grants, cooperative agreements, and subcontracts; over \$1.6 million was committed through September 2006.

METHODS: The evaluation methods included key informant interviews of Jhpiego staff and stakeholders in the countries of Barbados, Jamaica, St. Lucia, and Trinidad and Tobago, in addition to analyses of Training Information Management System (TIMS) data. Also, Jhpiego shared the results of its then recently completed Caribbean Regional HIV Counseling and Testing Survey.

FINDINGS: Analyses of data showed that four major themes characterized the environments in which the VCT training program occurred:

- There are time constraints for providers in public health clinics.
- Stigma is associated with HIV and AIDS.
- There is a tension between regional standardization vs. responding to local needs.
- There is an emergence of outreach for VCT services.

Results are summarized below in the four areas that were the focus of the evaluation.

- *Program implementation.* In the 4 years beginning in December 2001, Jhpiego, CHART, and their partners in the ministries of health trained more than 2,700 health care professionals in 12 countries with a common VCT curriculum. Jhpiego's Caribbean Regional HIV Counseling and Testing Survey reported that 67% of trainees were currently

providing VCT services. There were 305 sites that provided both HIV counseling and testing services in 8 countries.

- *Training model and effectiveness.* The Jhpiego VCT training program is based on a "training ladder" in which selected VCT trainees are trained to become "VCT trainers;" selected VCT trainers are trained to become "advanced trainers;" and selected advanced trainers are trained to become "master trainers." A total of 181 people completed the clinical training skills course, of which 67% (or 121 people) became certified as trainers by co-teaching a VCT skills course. Among certified trainers, 66% (or 80 people) taught more than one course. Sixteen people completed the advanced training skills course, and 14 people were certified as advanced trainers. Six of the advanced trainers subsequently received training in curriculum development and were certified as master trainers by developing the group education curriculum.
- *Supervision and monitoring systems for VCT training and implementation.* To monitor and evaluate the VCT skills course, four activities were integrated into the course. In addition, Jhpiego created TIMS; developed the Performance/Quality Improvement (PQI) program—a standards-based management system—in partnership with the MOH in Jamaica; and, as previously noted, conducted the Caribbean Regional HIV Counseling and Testing Survey. In 2003, 20 people were trained initially to collect baseline PQI data at VCT sites throughout Jamaica. Every facility met substantially more criteria at the second and third assessments than at the baseline assessment.
- *Sustainability.* By all accounts, the transition to MOH support of VCT training in Jamaica proceeded smoothly, and the MOH in Jamaica currently has funds for VCT training from the World Bank. The transition to MOH support of VCT training in the other countries is still in process. The degree to which VCT specifically and HIV and AIDS generally are prioritized within each MOH may largely determine the future viability of maintaining a VCT workforce and infrastructure in these countries. Jhpiego and CHART were unclear about the future of VCT training in the region, as well as their respective roles in the effort. Several interviewees described the important role that Jhpiego, as a "neutral" stakeholder, played in bringing training and technical assistance to the region.

RECOMMENDATIONS:

- Outreach for VCT services: Foster the development of outreach strategies for VCT services, and establish a clear link between VCT outreach strategies and testing services.
- VCT testing statistics: HIV testing data were collected in a variety of categories that were not comparable across countries and not available from every country. Routine reporting on VCT testing statistics should be negotiated as part of the workplan, with appropriate representatives of the MOHs and/or national AIDS programs.
- Existing network of trainers: Additional advanced trainers will be needed to sustain VCT training programs in some countries. Annual meetings provide an opportunity to advanced and master trainers to showcase their accomplishments and to share lessons learned.
- PQI: There is strong interest in developing a PQI process in all countries; such processes could build on Jamaica's, Barbados', and St. Lucia's efforts.
- Integration of Jhpiego and CHART activities: Jhpiego and CHART should develop a collaborative vision for integrating the VCT training program into CHART. The program should allow for a different process of integration in each country.

A manuscript based on I-TECH's evaluation has been submitted for publication: Hiner CA, Mandel BG, Weaver MR, Bruce D, McLaughlin R, Anderson J. Evaluation of a Voluntary Counseling and Testing Training Program in the Caribbean Region.

"It's Our Future Too!": An Evaluation of a School-Based HIV-Prevention Curriculum for Youth in Swaziland

BACKGROUND: In light of the high prevalence of HIV in Swaziland and lack of HIV-related knowledge among youth in that country, there is an urgent need for effective HIV prevention programs for adolescents. The Centers for Strategic Education, a Seattle-based non-profit organization created a curriculum called "Life Skill Enrichment" to empower youth ages 14 to 22. Two training sessions were offered on Saturdays to 200 young men and women at the African Methodist Episcopal (AME) Hillside School, in partnership with the 18th district of the AME Church.

METHODS: The purpose of the evaluation was to determine whether a school-based HIV education intervention designed in the United States and adapted for youth in Swaziland would be effective in changing participants' knowledge, attitudes, and behaviors related to protective behaviors, including knowledge of HIV status. In addition, the evaluation data were used to assess whether components of Self-Efficacy Theory can be associated with protective behaviors. One hundred students were randomly assigned to the first training session, and their outcomes were compared to students in the second session. Data was obtained from 135 students.

FINDINGS: The study found significant differences between the intervention and control groups in HIV knowledge, abstinence, and condom use self-efficacy, and knowing one's own HIV status. School-based HIV education programs can successfully increase HIV testing among in-school youth in Swaziland.

The project was funded by an 18-month grant (2005–2007) to the University of Washington's Center for Workforce Development (CWD) in partnership with the Strategic Education Centers from the Bill & Melinda Gates Foundation.

Effectiveness of Clinical Training for HIV Care in Sub-Saharan Africa—the Infectious Disease Institute (IDI) Training Evaluation (2006)

BACKGROUND: A review of randomized controlled trials of training interventions for physicians in Europe and North America showed that didactic methods, such as lectures and presentations, were not effective at changing physician practice. Interactive methods, however, such as hands-on practice sessions, case discussions, and role plays, were effective in changing physician practice, and, in some cases, the health outcomes of patients. Didactic training methods predominate in much of sub-Saharan Africa, though there are notable exceptions, such as the Infectious Disease Institute (IDI) at Makerere University in Kampala, Uganda. The IDI offered a 4-week course on comprehensive HIV care, including antiretroviral therapy (ART), to 25 physicians six times a year, and, as of May 2006, IDI had trained a total of 350 physicians. The

program featured interactive training methods, such as case presentations and clinical rounds. Its objective was to build the capacity of physicians and other health care professionals in Africa—especially Uganda—to treat patients with HIV.

The objective of the evaluation was to determine the effects of the IDI's course on four outcomes: 1) clinical skills, 2) clinical activities, 3) monitoring of HIV patients, and 4) training activities.

METHODS: A 17-item clinical exam checklist was used to assess clinical skills at the beginning and end of the course, and at a follow-up session 3 to 4 months later. A telephone survey was conducted 1 month after the course to collect data on four areas: clinical activities, monitoring of HIV patients, case studies on initiation of ART, and training activities. Data on training activities were also collected at the follow-up session. Four cohorts of physicians in 2004 and 2005 participated (n=47).

FINDINGS: Between the beginning and end of the course, participants' clinical skills improved significantly in 11 of 17 areas (n=34). Between the end of the course and the follow-up, their skills improved significantly in 3 areas (n=14). Further, it was found that the trainees were practicing HIV care and training. The telephone survey (n=46) showed that 93% of trainees treated HIV patients, 35% provided training on HIV, and 47% monitored the weight of the last HIV patient treated (patient's weight was a clinical endpoint to measure health status). At follow-up, everyone provided training and trained an average of 20 people per month.

CONCLUSION: The evaluation found that the IDI course improved the clinical skills of the doctors who completed it, and that alumni were practicing HIV care and training. It could be possible to improve capacity for treating HIV-infected children, and practice for monitoring HIV patients in the future.

For an article based on this evaluation, see: Weaver MR, Nakitto C, Schneider G, Kanya M, Kambugu A, Ronald A, Lukwago R, McAdam K, Sande M. "Measuring the Outcomes of a Comprehensive HIV Care Course: Pilot Test at the Infectious Diseases Institute, Kampala Uganda." *Journal of Acquired Immune Deficiency Syndromes*, 2006; 43 (3): 292-303. The article can be accessed at http://faculty.washington.edu/mweaver/Weaver_JAIDS2006.doc.

¹ World Health Report (2003)

² Jhpiego is an international health organization affiliated with Johns Hopkins University in Baltimore, Maryland.

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