# MASTER OF SCIENCE PROGRAM IN CLINICAL TROPICAL INFECTIOUS DISEASES AND HIV MEDICINE AT THE UNIVERSITY OF GONDAR IN ETHIOPIA

filling in the gaps to address a major health care challenge

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## ACRONYMS

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| **CDC** | Centers for Disease Control and Prevention |
| **CMHS** | College of Medicine and Health Sciences |
| **EDHS** | Ethiopian Democratic Health Survey |
| **FMHACA** | Food, Medicine, Health Care Administration and Control Authority |
| **FMOE** | Federal Ministry of Education |
| **FMOH** | Federal Ministry of Health |
| **HANS** | HIV/AIDS Nurse Specialist |
| **HSDP** | Health Sector Development Program |
| **ITECH** | International Training and Education Center for Health |
| **NGO** | Non-Governmental Organization |
| **OSCE** | Objective Structured Clinical Examination |
| **PEPFAR** | President's Emergency Plan for AIDS Relief |
| **RHB** | Regional Health Bureau |
| **UoG** | University of Gondar |
| **UW** | University of Washington |

## Background

Despite a population of 90 million, Ethiopia has fewer than 3,000 medical doctors. According to Global Health Action's report for the year 2011, Ethiopia has 0.7 health care workers for every 1,000 people, a low figure, even compared to other sub-Saharan countries. This critical shortage of health care workers has resulted in generally poor health among the population, reflected in an under-five mortality rate of 88 per 100,000, and a maternal mortality rate of 676 per 100,000 (Ethiopian Demographic Health Survey 2011). According to the Ethiopian HSDP IV report, preventable infectious diseases and nutritional deficiencies account for 60–80% of the country's health problems.

To address this critical shortage, Ethiopia has embarked upon a massive expansion of enrollment in its medical and health science education programs, and adopted task-shifting (task-sharing) strategies.

The International Training and Education Center for Health (I-TECH) Ethiopia is a University of Washington (UW) program, and PEPFAR-funded NGO engaged in improving the quality of HIV/AIDS programs in the Afar, Amhara, and Tigray regions. I-TECH has responded to the human resources crisis in HIV/AIDS care in these regions by employing a task-sharing strategy to help alleviate the shortage of health care workers. Prime examples of I-TECH's successes in this area are its HIV/AIDS Nurse Specialist (HANS) and Adherence Case Management (ACM) initiatives. Against this backdrop, I-TECH approached the University of Gondar (UoG) with an initiative to formally train midlevel health workers to become HIV and Tropical Infection specialists.

## Rationale

The rationale behind the initiative was to address the critical shortage of health care workers in Ethiopia by training midlevel staff to become specialists in the treatment of tropical infections and HIV, the diseases most prevalent in the country. The initiative was both timely, and in line with the national goal of greatly increasing enrollment in medical and health science education programs. The task-sharing strategy employed is relevant, cost-efficient, practical, and proven to work in resource-limited settings.

## Program Goals

The primary goal of the Master's program is to produce competent, compassionate clinicians and leaders in the field of tropical infectious diseases and HIV medicine.

### *Qualifications for Admission*

To qualify for admission to the program, a candidate must be a general-practice physician, a health officer or nurse prescriber, with at least two years of work experience.

### *Graduate Profile/Core Competencies*

The MS in Clinical Tropical Diseases and HIV Medicine is a two-year program; candidates are expected to undertake and defend a problem-solving thesis on infectious disease before graduation.

Graduates of this program will be able to demonstrate the following:

- Professionalism
- Knowledge of the scientific foundations of medicine, and the ability to apply them
- Clinical skills
- Communication skills
- Information management skills
- System-based practices
- Critical thinking
- Basic research skills
- Leadership

Each candidate must also fulfill criteria set by the University Senate for graduation from post-graduate study programs, and pass external examinations.

### *Why the University of Gondar?*

The College of Medicine and Health Sciences (formerly Gondar Public Health College and Training Center), established in 1954, is the oldest medical institution in Ethiopia. It is one of the best medical schools in the country, and the most prestigious medical school in the regions supported by I-TECH.

The College operates a hospital with a capacity of 500 beds. Serving as the referral center for the Amhara region, the

hospital provides specialized services to a catchment population of over five million.

Currently the college is undergoing rapid expansion. At present, the College offers 34 post-graduate programs.

### *Program Administration*

The program is administered by the Department of Internal Medicine at the College of Medicine and Health Sciences at the University of Gondar (UoG).

### *Main Stakeholders*

The main stakeholders in the program are the Federal Ministry of Health (FMOH), the Food, Medicine and Health Care administration and Control Authority of Ethiopia (FMHACA), the Federal Ministry of Education (FMOE), Ethiopia's regional health bureaus (RHBs) and government-run universities, and I-TECH Ethiopia.

## Methods/Implementation

A survey was conducted at hospitals, universities, and health bureaus in Amhara and Tigray. Analysis of the results indicated strong interest among government officials, policymakers, and potential students, confirming there was a need for the program.

I-TECH's HIV/AIDS Nurse Specialist program, the New York State AIDS Institute's Nicholas Rango HIV Clinical Scholars Program, and the I-TECH/CDC India-supported HIV/AIDS Fellowship at the Government Hospital of Thoracic Medicine in Chennai, India, were used as benchmarks for the new program. Examination of these programs showed that task sharing is a practical, cost-efficient way to address health care staff shortages. The results of the projects in New York and India suggested that accreditation and a clear career path are important for the success and sustainability of such programs.

The RHBs, the FMOH, the FMOE, and the FMHACA, among other key partners, were lobbied to raise awareness of the need for the program, and to advocate for its implementation.

Program curriculum was developed through examination of the benchmark programs mentioned above, and consultation with education experts. A curriculum review workshop was then held with stakeholders. A plan was established to review and amend

the curriculum every two years, as part of a continuous evaluation process.

Issues of administration, sustainability, and applicant interest were carefully considered.

Monitoring and evaluation components were incorporated through the establishment of measurable goals as follows.

## *Tools/Instruments*

Tools were developed to evaluate the program. These tools are used to assess the impact of training under the program on students' knowledge, skill, and job performance.

## *Measurements*

Baselines for the knowledge and skills of the candidates were established using OSCE and written exams. Post-program performance assessments are planned.

For purposes of program evaluation, feedback will be collected from employers, graduates, and relevant stakeholders on a regular basis.

### Qualitative Measurement

The first and second classes of Clinical Tropical Infectious Diseases and HIV Medicine postgraduate students were interviewed about their expectations for the program, the specific areas in which they want to acquire knowledge and skills, the challenges and constraints they experienced during the application and registration process, the work they would like to do after graduation, and their long-term vision. This process will be repeated at graduation.

## Results

The UoG added the program to its curricula, placing it under the College of Medicine and Health Sciences. To compensate instructors for the increased teaching load, the UoG instituted an overtime pay schedule.

The FMOH recognized the program, ensuring career paths and employability for program graduates.

RHBs showed particular interest; they have been sponsoring their employees for training through the program, as are public universities across the country.

The program was launched in December 2011. Out of 39 applicants for the first class, 14 were accepted. For 2012, 16 of 41 applicants were accepted; for 2013, 11 of 42 applicants were accepted. Forty applications were received for the fourth round of training, in 2014.

Eleven members of the first class of students successfully completed the program, and are now serving their communities. These students originally came from RHBs in seven different regions.

Currently, 16 students are in the second year of the program; twelve are in the first.

Based on information gathered from faculty, guest experts, and the first class of students, the curriculum was revised in March 2014.

The job performance and progress of program graduates has yet to be assessed.

## Discussion

Preparatory work, in the form of engaging key partners, demand analysis, benchmarking, and awareness creation, was key to the successful implementation of this program. The critical steps in establishing the program were recognition and support from policymakers at the FMOH, the FMOE, the FMHACA, and regional governments; the UoG's decision to add the program to its curricula; and the commitment on the part of I-TECH to support the UoG's efforts. I-TECH's continued support, from concept, curriculum development, and advocacy to complementary faculty support, and involvement in teaching, was vital to the program's success. Continued interest on the part of sponsors

and applicants is a testament to both the relevance and the sustainability of the program.

Specialized, focused training for midlevel health care workers that enables them to manage common infections is a worthwhile strategy, especially in resource-limited settings where there are critical shortages of trained personnel.

## Challenges and Responses

### *Unrealistic Expectations of I-TECH Support*

The association of the program with I-TECH Ethiopia led some faculty and students to have unrealistic expectations of continued support from I-TECH.

This was addressed by creating greater awareness of ownership and sustainability issues, as well as the gradual phasing out of I-TECH support.

### *Discontinuation of Guest Faculty Participation*

I-TECH sponsored guest faculty from the UW and Israeli universities during the first year of the program. The discontinuation of this initial support left a void.

I-TECH addressed this through faculty development initiatives, in which UoG faculty assumed additional teaching responsibilities. It is important to note that the links with Israeli universities and the UW created by I-TECH-Ethiopia have created opportunities for sustainable bilateral relationships.

### *Reduced RHB Sponsorship*

Lately, the RHBs have been sponsoring fewer candidates, while government-run universities have been increasing their sponsorships.

As the main purpose of this training program is to increase the numbers of service providers in underserved communities, attempts are being made to reverse this situation through ongoing promotion and awareness-raising measures.

### *Licensing Errors*

Error was made in the professional licensing of graduates, since the license does not fully reflect the graduates expertise.

A corrective plan is under review by FMHACA at the request of UoG and ITECH.

### *Lack of Clinician Interest*

The lack of interest in the program expressed by some clinicians was one obstacle to the program's success, one possible reason being excessive workloads.

The new overload payment system launched by the CMHS for instructors has motivated faculty to become more involved in the teaching activities of the new program. Overload pay seems to be solving this problem in other programs as well. The recent recruitment of more junior faculty is also helping.

### *Unrealistic Program Expectations*

Another challenge was high expectations on the part of applicants. This, in particular, was mainly reflected in the first batch.

The problem is being addressed through comprehensive orientation, awareness creation of roles and responsibilities, as well as getting feedback and applying corrective measures to identified concerns when possible.

## Lessons Learned

The following steps made successful implementation of the program possible:

- Careful identification of the need for the program.
- Involving key stakeholders in the planning process.
- Preparations that adequately addressed the goals of the country, the interests of program students (i.e., accreditation, job opportunities), the needs of the regions, and the goals of policymakers.

We strongly believe that this program has had significant impact, not only by addressing the critical shortage of health

care workers in the area of infectious diseases, but also by providing a model for similar programs.

Program curriculum was designed to include more competency-based evaluation, with both pre- and post-graduation assessment. This approach could also be applied to academic programs that are not currently focused on competency. Moreover, this program could encourage other departments to consider adding disciplines that are pertinent to the needs of Ethiopia, rather than trying to train small numbers of students abroad.

## Conclusion

Implementation of the Master's program in Tropical Infectious Disease and HIV Medicine was successful because the program was relevant, feasible, and innovative, with a lot of thought and preparation going into it prior to its implementation. Though similar programs are available abroad, this initiative demonstrates exemplary partnership among NGOs and governmental bodies to collaborate on a lasting agenda. This kind of task-sharing approach to strengthening the health care system is particularly relevant in resource-limited settings, where critical shortages of health care workers are the norm.

## Further Reading

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