HIV education for health-care professionals in high prevalence countries: time to integrate a pre-service approach into training

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The HIV pandemic has placed an immense burden on the delivery of health-care services over the past two decades, especially in countries with high HIV prevalence. Ample finances, continuous logistical input, and adequately trained human resources are required to set up high quality HIV treatment programmes. The availability of skilled human resources remains one of the most serious obstacles to the roll-out of antiretroviral treatment programmes,[1,2] and to the realisation of universal access to HIV prevention, treatment, and care by 2010.[3] Inadequate training of health-care professionals about HIV leads to compromised patient care and perpetuates the spread of myths and other erroneous information that can negatively affect providers' attitudes toward people living with HIV/AIDS, to the extent that staff refuse to care for them.[4,5]

The rapid scale-up of antiretroviral treatment programmes in resource-limited settings has required an emergency response for capacity building. Standardised simplified treatment protocols and decentralised service delivery have been keystones in the chosen public-health approach.[6–8] To bridge the HIV skills and knowledge gap among practising health-care providers, in-service HIV training courses were launched across the globe. Training was offered through ministries of health, often in collaboration with international partners, non-governmental organisations, and academic institutions in both public and private sectors.

In-service training has allowed the rapid preparation of clinical teams in many new sites able to provide chronic HIV care, antiretroviral therapy, and prevention. There has also been an increasing emphasis on on-site training of clinical teams followed by regular supportive supervision and clinical mentoring after training. However, in-service training is expensive and often depends on donor support. Problems with training strategies and poor management can mean that access to in-service training is uneven; those who require training most urgently are often not given priority to attend such training. Moreover, after being trained, health-care professionals are often transferred to other positions. Skilled personnel able to replace the trainees may be lacking, particularly in remote areas where health-care providers desperately need training, since access to expert support and referrals are more limited than in urban settings. The absence of participants from work exacerbates the human resource crisis by increasing the workload for clinic providers who are left to attend to patients.

When other members of antiretroviral clinical teams lack training, the application of skills gained by recent trainees can be compromised. An assessment of the Nigerian national antiretroviral training programme showed that about 50% of trainees were unable to practise gained skills because of lack of support, poor institutional capacity, and lack of motivation from institutions and colleagues.[9] Emphasis on training whole clinical teams rather than individuals and on-site clinical mentoring has helped to address this problem.

While in-service training provides an immediate response to an acute need for rapid HIV prevention, care, and treatment scale-up, training needs have evolved over time. The increased requirements for more robust training place additional pressures on in-service training delivery and require an adaptation of training initiatives. HIV medicine is a rapidly evolving science with a short half-life of current knowledge. More mechanisms need to be built into training programmes in resource-limited settings to provide staff with regular updates on HIV knowledge. A practical solution to this dilemma is strengthening pre-service education and continuing medical education programmes.[10]

Pre-service education could boost the numbers of trained health-care professionals in resource-limited settings. At a WHO meeting in June, 2007, several international training partners convened to discuss the inclusion of the Integrated Management of Adolescent and Adult Illness (IMAI) training package into pre-service curricula. A strong emphasis was placed on pre-service education being critical to the successful scale-up of HIV prevention, care, and treatment services. Partners proposed to identify key HIV content to strengthen pre-service curricula and to collaborate in the development of materials to support improved HIV pre-service curricula.

Several training organisations offer pre-service technical assistance such as redesigning curricula to include HIV content and faculty development training to build capacity for faculty HIV expertise. For example, the WHO Department of Child and Adolescent Health and Development, together with Jhpiego, an international health organisation affiliated with Johns Hopkins University (Baltimore, MD, USA), have developed a learning package on the skills needed to effectively teach in a pre-service context.[11] IMAI in-service materials have been used in Ethiopia, Swaziland, and Fiji to offer pre-service education to graduating batches of health-care professionals. Ethiopia is planning to fully integrate the

Lancet 2008; 372: 341–43

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For the **IMAI in-service materials** see http://www.who.int/3by5/publications/documents/imai/en/

content of IMAI training material into pre-service training curricula. Workshops on HIV content integration have been held with key faculty from nursing, midwifery, and selected medical school departments of universities in Addis Ababa, Gondar, and Jimma to update course syllabi and integrate HIV core competencies. Further examples of pre-service education initiatives in resource-limited settings are given in the panel.

Pre-service education provides an organised and systematic approach to ensure that all professionals within a given setting are inculcated with fundamental HIV knowledge before entering the workforce. Pre-service education in the long term is less costly than in-service training and avoids workplace absences. Proper education in HIV prevention, care, and treatment also helps to positively shape the attitudes of health-care professionals towards people living with HIV/AIDS, reduce misconceptions, and increase access to care.[12] Professionals who are enlightened early on during their training can serve as strong patient advocates to educate others about the importance of supporting people living with HIV/AIDS.

However, academic institutions are under constant pressure to increase student enrolment to expand the health workforce. Increasing student intakes is often done without attending to investments in infrastructure, equipment, and personnel. Many institutions are in advanced states of decrepitude, especially those that train mid-level or lower level health-care workers—ie, those more likely to stay and work in the system—or those located in remote areas away from capital cities.

Another key challenge is that pre-service curricula are often already too densely packed, causing reluctance to add further content. Thus, a full review of the pre-service curricula is needed. However, many faculties do not have expertise in HIV care and treatment nor in curriculum development, and lack resources to undertake such a review. Although pre-service HIV education is required immediately, the process of designing new curricula and getting them approved by pertinent stakeholders could take several years.

More funding should be dedicated to pre-service education in HIV prevention, care, and treatment. Pre-service curricula need to be reviewed and updated with quality HIV content. A way forward would be the development of a generic HIV curriculum for each cadre of health-care professionals that could be adapted for individual countries and settings. HIV care as a topic has to be thoroughly integrated with other health-care topics, such as tuberculosis, malaria, cancer, and palliative care, and presented in the context of a public-health approach to quality primary health care, community involvement, and participatory planning of services.

Indeed, more than just incorporation of new content into existing curricula is required. Beside investments in infrastructure and equipment, faculties will require ongoing technical assistance and capacity building in curriculum development. Moreover, clinical support to feel empowered to teach HIV content to students and to remain updated with changing HIV interventions is needed. The presence of faculty mentors working on-site at academic institutions could greatly enhance the quality of teaching in both didactic and clinical settings. Clear competencies and learning objectives need to be established to guide students in their clinical rotations.

Constructive thinking about teaching methodology, student-faculty ratios, the time ratio between classroom learning (and its quality) and clinical practice, and about the actual availability of teachers and clinical instructors is also needed. A network between WHO, partners in pre-service education, and ministries of health and education has to be established to strengthen collaboration for defining quality HIV content for pre-service education

***Panel:* Examples of pre-service education initiatives in resource-poor settings**

- Uganda—At Makerere University Medical School in Kampala, fifth year medical students learn about and take part in the holistic approach needed to care for people living with HIV/AIDS. Until recently, students had very little overview of the effect that HIV has on individuals, families, and communities as a whole as well as how HIV care and antiretroviral therapy affects quality of life. Therefore, lectures are given on different aspects of HIV/AIDS care, followed by practical placements at different sites—eg, the Infectious Diseases Institute (IDI) of Makerere University, Hospice Africa Uganda, and The Mildmay Centre. At the IDI, for example, each student is able to follow one patient with HIV infection for a full week. Under supervision of a senior clinician, the student accompanies their patient through each aspect of HIV care, including a home visit, to experience the daily problems in their home settings. At the end of the week each student presents their case for group discussion
- Ethiopia—The Ethiopia Public Health Training Initiative (EPHTI) is a USAID funded partnership between the government of Ethiopia and the Carter Center, that links Ethiopian teaching staff with national and international experts to develop teaching materials based on local experience and to improve the training of health professionals. EPHTI strengthens the teaching skills of the instructors in seven universities and 21 training hospitals, and provides teaching aids. About 1200 instructors have been trained and 38 HIV-related teaching materials have been developed
- Zambia—To bridge between the classroom and the clinical area, Jhpiego supported Chainama Hills College, a school teaching nurses and clinical officers to improve pre-service education. One of the unique aspects of the programme is the establishment of clinical skills laboratories aiming to increase students' skills and confidence before exposing patients to them. Every year 100 nurses and 120 clinical officer students go through 2 weeks of practical learning each semester, with clearly defined learning objectives. Staff in clinical sites where students are assigned are provided with learning guides to help supervise and coach students
- Mozambique—The ministry of health has been working to rapidly decentralise antiretroviral services to every district in the country and has decided to scale-up the training of mid-level providers, called *Tecnicos de Medicina*, who are assuming increased responsibility for the care and treatment of HIV patients. At the request of the ministry of health, I-TECH is developing a 6-week module focusing on HIV/AIDS, tuberculosis, opportunistic infections, malaria, and malnutrition that will be taught as part of the 30-month pre-service training programme for this cadre of staff. I-TECH has also provided faculty development training for pre-service institutions that specialise in training mid-level professionals

and supporting curricula improvement and ongoing updates. This should be done within an integrated approach to primary care.

As an extension of pre-service education, we should also strengthen continuing medical education programmes to keep the HIV knowledge of health-care staff in the field up to date, preferably in a manner that does not disrupt patient care. Possible methods include distance learning programmes, further theoretical and practical training sessions at the workplace, and clinical mentoring.[13]

Although in-service training courses are acceptable as an emergency response to disseminate new knowledge in HIV prevention, care, and treatment, training initiatives have to evolve further to meet increasing demands and requirements. If we aim for universal access to HIV prevention, care, and treatment, we must ensure that all health-care professionals are properly educated. Therefore, the timely integration of adequate and regularly updated comprehensive HIV training into pre-service curricula of all cadres of health-care professionals is of paramount importance. Not only redesigning training curricula but also upgrading faculties and providing support for empowerment in teaching HIV content to students is needed. Continuing collaboration between WHO, partners, and ministries to rapidly produce and continuously update strong HIV content for pre-service education and continuing medical education is needed.

Conflict of interest statement

We declare that we have no conflict of interest.

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