

SEA/AIDS/111

# Teaching HIV/AIDS in Medical Schools



**World Health Organization**  
Regional Office for South-East Asia

**New Delhi**  
**1999**

**Teaching HIV/AIDS in  
Medical Schools**

ISBN 92 9022 220 4  
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Printed in India

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## Foreword

*Today, HIV/AIDS is one of the greatest threats to the health of the community the world over. In the South-East Asia Region, with about 5.5 million people already infected, the epidemic is still rising sharply. WHO estimates that by the year 2000 there will be 8 to 10 million persons living with the virus in South Asia. Treatment with the highly active antiretroviral therapy does delay the onset of AIDS but today the cost of this treatment is more than most individuals in the Region can afford. The conclusion is unavoidable – more and more people in the Region are going to need medical attention as they develop AIDS and present with a variety of opportunistic infections.*

*Recognizing that HIV/AIDS is a major public health problem, the World Health Organization has identified HIV/AIDS as one of its priorities. In pursuance of this decision, the Regional Office for South-East Asia has taken an active role in offering technical assistance to the countries of the Region.*

*Given this scenario, it is clear that the vast majority of medical practitioners are directly or indirectly going to*

*be affected by the epidemic in their professional work. The medical students of today are going to be the medical practitioners of the next thirty years. It is they who will have to bear the brunt of this anticipated load.*

*Even though in many parts of the Region HIV/AIDS is not currently a major problem, all health systems need to equip their student doctors to handle the disease in the future. Medical schools need to include topics relevant to HIV/AIDS as an integral part of the curriculum.*

*To initiate the process of systematic integration of HIV/AIDS in the medical curriculum, the Regional Office has prepared this curriculum in consultation with experts in the Region. I hope it will be widely used as a basis for developing a national consensus on the modalities of teaching HIV/AIDS to medical students in the Region.*

**Dr Uton Muchtar Rafei**  
**Regional Director**

## 1. INTRODUCTION

HIV infection has now spread to almost every country in the world. The current WHO/UNAIDS estimate is that there are about 33.4 million infected persons in the world. Six million HIV-infected persons are reported to be in South and South-East Asia, out of which 5.5 million are in the WHO South East-Asia Region. Cases of AIDS are increasingly being reported in most countries of the South East Asia Region. By the end of 1999, the Region had reported 134,677 cases of AIDS. Even though very significant advances in the treatment of HIV infection have been made in the recent past, medical science is far from finding a therapeutic solution to the problem of HIV/AIDS. Intensive efforts are being made in the developed world to find a vaccine for HIV infection. Even though several candidate vaccines are on the anvil, it is not likely that there will be an effective vaccine in the near future, and when a vaccine is developed, it is another question whether it will be affordable for the masses in the developing world.

Given the fact that almost every country is going to be affected by HIV, and that many countries will be affected seriously, it seems inevitable that the medical

profession is going to be involved in managing HIV/AIDS as well as promoting its prevention and care. It is the health care providers who will have to treat those with HIV infection and suffering from HIV-related disease. Health care providers, particularly physicians, will also have to learn to protect themselves and those that come to them for medical help. Serious ethical questions will have to be resolved and most doctors will face dilemmas that challenge their own beliefs.

HIV-related infections and neoplasms could occur at almost any site on the body, and affect almost any organ system. Once HIV infection spreads in the community, and a sufficient period lapses, most doctors in clinical practice will see cases of opportunistic infection. Many doctors will also have to deal with the trauma and anguish faced by persons who discover or suspect that they are HIV positive. Doctors have to be prepared for this eventuality.

The provision of skills and knowledge to deal with this new condition is a matter of some urgency in the Region. This can be done by refresher and in-service training of doctors already working in the community and in medical institutions. However, it is an urgent necessity that the doctors of tomorrow are prepared to deal with the many outcomes of the spread of HIV infection in the community.

The vast majority of new HIV-infected persons acquire the virus through the sexual route. It has been found that the efficiency of transmission of HIV from the infected to the non-infected partner is greatly enhanced in the presence of sexually transmitted infections (STIs). This is not only true when the non-infected partner has genital ulcer disease but also if there is an infection without ulceration. The presence of inflammation has the same effect as ulceration. What is interesting to note is that the presence of sexually transmitted infection in the infected partner also facilitates the spread of HIV infection. STIs enhance the secretion of the virus in vaginal/cervical fluids and in semen.

Studies have shown that the detection and treatment of sexually transmitted infections have a marked effect on the incidence of HIV sero-conversion. A study in Mwanza (Tanzania) demonstrated a 40% reduction in the incidence of HIV infection following early detection and treatment of STIs. The early detection and treatment of sexually transmitted diseases must therefore be integral and essential parts of a complete HIV/AIDS prevention package.

## 2. OBJECTIVES

## Teaching HIV/AIDS in Medical Schools

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The objective of including HIV/AIDS-related education in the medical school curriculum is to produce a doctor with:

- knowledge about the HIV virus and how it is spread and not spread.
- competence to diagnose and manage persons with HIV infection and HIV-related disease.
- knowledge of the extent of HIV/AIDS problem – at global and city levels – and its impact on health.
- knowledge about psycho-social and behavioural aspects.
- communication skills and the ability to counsel persons with HIV/AIDS as well as their families to
- understand the STI and HIV relationship and to manage STI using the syndromic approach.
- the ability to plan and execute appropriate preventive measures against HIV infection in the hospital, workplace and community. An understanding of the importance of team approach and intersectoral cooperation for optimal utilization of resources.
- compassion for individuals living with HIV/AIDS.

- an awareness of medical ethics; human rights issues, and costs of medical care.

To meet the above objectives a wide array of knowledge and skills are required, besides the all-important and most difficult inculcation of a suitable attitude.

### **3. INTEGRATING AND MODIFYING THE EXISTING CURRICULUM**

#### **3.1 Evaluation of present curriculum**

The medical education curriculum is already very full and puts a heavy burden on medical students. Hence, it may not be practical or even useful to have a fresh and self-contained module introduced into an already heavily committed curriculum.

Fortunately, a major portion of what is sought to be achieved is already being taught in almost every medical school; what is needed is merely a change in emphasis and a judicious use of examples drawn from HIV/AIDS.

There also are significant technical reasons and justification to integrate this segment into the existing curriculum. The provision of care in the context of HIV/AIDS has several important facets, each of which

relates to the ideals of medical practice in general. First is the understanding of and skills in the management of a chronic HIV disease with a gamut of associated opportunistic infections; second is the need to overcome prejudicial attitudes that can impede high quality care, and third is the development of skills in coping with the psychological demands of certain types of care of patients. Running right through the curriculum is the serious concern for ethics and the rights of the patient. All these could best be developed in the milieu of an educational programme that tends to integrate the otherwise disparate teaching and learning elements.

However, if the existing curriculum in a medical school is subject or discipline-based, it is unwise to first attempt to bring about a degree of integration before the teaching programme begins. In such instances, integration could be a medium-term objective. The teaching of HIV/AIDS must begin right now within the existing educational programme. By introducing HIV/AIDS-related topics into the existing curriculum in this manner the programme can be implemented almost immediately, as it would not necessitate finding extensive teaching time or the creation of special staff for the purpose. This would make the proposition eminently feasible.

### **3.2 Initiating changes in the Teaching Content**

One of the urgent initiatives each medical school should take is to set up a multi-disciplinary committee or task force. The committee's responsibility would be to look at the present curriculum, assess the essential knowledge and skills needed and advise on the course content and the system of evaluation. The committee should be composed of members from the following departments: public health, microbiology, internal medicine, sexually transmitted infections, paediatrics, psychiatry and a representative of medical students.

### **3.3 Process of bringing about change**

The Educational Spiral provided a simple way of identifying how HIV and AIDS could be incorporated or integrated into the medical curriculum. Needs identification, and determination of the specific tasks that a medical graduate needed to undertake formed the starting points for curriculum design. The educational objectives would then be determined on the basis of these tasks. The selection of relevant content, teaching and learning methods and the assessment would follow. Finally, it was considered essential to conduct regular programme evaluations in order to improve the medical curriculum over time. This is particularly important during the early stages of implementation.

#### 4. ESSENTIAL TEACHING ELEMENTS

The following elements in the curriculum are considered essential to meet the objective of producing compassionate and sensitive doctors competent to manage HIV infection (and AIDS) in the individual, family and community.

- Epidemiology and transmission of HIV
- Signs, symptoms and natural history of HIV infection
- Testing: Elisa, Rapid Tests, Simple tests, Western Blot, CD4, Viral load etc.
- Diagnosis of HIV infection/AIDS
- Prevention of HIV transmission including health care settings.
- Psycho-social impact of HIV/AIDS
- Counselling Skills
- Patient, family and community education
- Nursing care (adult, infant, child)
- Home care
- Support and care including palliative care
- Terminal care
- Human Rights and Ethical issues

- Gender issues
- Legal implications

If all the above topics are to be adequately covered, it is necessary that the essential minimum be clearly delineated. Today there is such a wealth of knowledge and experience about the virus, its manifestations and management that no medical student can hope to learn it all. The aim of most medical schools is to produce a doctor capable of functioning effectively in institutions and the community at the level of the first doctor intervention, and to give the new graduate the scientific foundation for reasoned action and the ability to increase his knowledge and skills. It therefore follows that in HIV medicine, as in other aspects, it is not required to train each medical student in every detail of medicine.

However, the new graduate must be skilled to do the following :

1. Recognize, diagnose and treat patients with HIV/AIDS;
2. Provide counselling and appropriate referral services;
3. Diagnose and manage STIs;
4. Manage HIV-related pregnancy;

5. Discharge planning, referral and follow-up;
6. To use appropriate tests and interpret the results;
7. To encourage family and social support;
8. To promote and protect patient's rights;
9. To produce behaviour change;
10. To know and use Universal Precautions, and
11. To use blood appropriately

## **5. PROPOSED HIV/AIDS CONTENT IN THE MEDICAL CURRICULUM**

It will be noted that most of the elements can be fitted into the existing teaching of various medical school departments. What is needed is a conscious decision to focus and stress those aspects that are important to HIV medicine and to use examples from HIV when teaching general principles. The teaching of the different elements of the core curriculum would then permeate through the entire course, with almost every department taking an important responsibility.

By involving all the teaching departments in meeting the objectives defined for the overall course in HIV medicine for undergraduate medical students, the course

can be smoothly incorporated into the curriculum with no apparent extra burden on the student. Best of all, such a change can be implemented at the medical school level with minimal procedural hassles with the Medical Council, and Universities or Boards of Studies.

## 6. TEACHING METHODS

Most medical schools in the Region are still dependant upon conventional uni-disciplinary lectures for the major portion of the teaching, though there are some schools that have begun to use more innovative and interactive teaching – learning situations. HIV medicine has thrown up a new challenge to medical education. More than most other branches of medicine, training a doctor to manage persons suffering from HIV disease with understanding and compassion needs the inculcation of a sympathetic and non-judgemental attitude in the medical student. Schools entirely dependant upon conventional teaching methods may find it difficult to influence the attitude and thinking of student doctors. Experience shows that while dealing with subjects like STI, HIV and AIDS, their teaching should be integrated and carried out jointly by teachers from many disciplines, e.g. medicine, preventive medicine, and social and behavioural sciences. Moreover, many institutions have found that innovative teaching-learning

methods are better at influencing attitudes. It may therefore be worthwhile focusing on the use of learning situations such as structured case studies, tutorial sessions, games, role-play and similar methods that can help students to learn to understand and cope with the emotional dimension. It is often said that in an area like HIV/AIDS the attitudes learnt during training are the most important part of the training.

The sensitivities surrounding the ways in which HIV is transmitted and the current role of education and counselling in reducing the risk of infection emphasize the importance of physician-patient communication skills. Effective communication skills in emotionally sensitive areas depends as much on the personal comfort and emotional development of the physician as on the experience with specific interviewing and counselling techniques. Teaching and learning experiences that allow medical students to explore their feelings about various emotional aspects of patient care, such as human sexual behaviour, death and dying, or patient characteristics and lifestyles different from their own, are important to develop communication skills. All this calls for introducing different types of non-conventional learning experiences, such as multidisciplinary seminars highlighting the various aspects of the HIV/AIDS problem.

Another crucial and related aspect of what teaching and learning methods would be most effective concerns the teacher. Here, the cardinal importance of the teacher being a role-model for the student cannot be overemphasized and the truth of the old adage that, "attitudes are not taught but caught" has much meaning to it. In order to facilitate teaching of HIV/AIDS in medical schools, the teachers should have access to and make use of teaching aids such as visuals, overhead projectors and slides. Such materials should be developed by national programmes and made available to all medical schools as standardized and pre-tested materials.

## **7. ASSESSMENT**

Appropriate assessment of students is important for at least three reasons:

1. It is essential to make sure that the medical students, at the time of graduation (and at different phases of their learning), have achieved the objectives of the course, in this case related to HIV/AIDS.
2. Assessments will encourage students to work harder, thereby motivating them.

3. Particularly in the case of a newer subject of learning such as HIV/AIDS, assessments can guide the teachers as well as the students about parts of the course that have been successful and parts which need to be improved.

Naturally, no single assessment during the course can achieve all of these. Also, in view of the need to assess the attitudes and the ability of young doctors to handle persons who are suffering from the intense trauma of being diagnosed as suffering from a stigmatizing, incurable disease, a range of student assessment methods will have to be used. Conventional essays, multiple choice questions (MCQs) and MEQs all have a role but they alone will not suffice. It is important to ensure that questions on HIV/AIDS are asked both in theory as well as practical examinations. For testing skills and attitudes, a variety of appropriate assessment methods need to be selected. The selection of such methods need to be based on the cardinal principles of evaluation which would ensure their validity, reliability and, of course equally importantly, their feasibility.

The Objective Structured Clinical Examination (OSCE), and the Objective Structured Practical Examination (OSPE) have many features that will help teachers to determine students' skills (including

communication skills), and attitudes. Also possible are patient management problems, projects and checklists.

Another method that has found favour is a constant day-to-day evaluation (with appropriate feedback) of students as they face real and contrived experiences during the course of their training. Such continuous assessment could be best used as a method of formative assessment and thereby motivate the students to learn.

Finally, it is necessary to bear in mind that no assessment method is perfect. Each has some advantages and disadvantages. Therefore it is always necessary for the teacher to use a variety of methods whenever feasible. Such selection should be based on the objectives of the course, economy of time and expense, reliability and validity of the instruments, and their value as learning tools for the students.

## **8. STAFF DEVELOPMENT**

In any new educational initiative, the development of the faculty in both content and process of education is of critical importance. There is also the need to ensure that the faculty hold positive attitudes and are motivated to engage in the new teaching and learning activities. The staff should not feel that additional workload is being imposed on an already overburdened work schedule.

This is particularly important among a traditionally-oriented faculty. Nowadays, many medical schools have their own medical education units or equivalent bodies, which have staff development as their primary mandate. In those medical schools where the necessary educational expertise already exists, what is required may only be some orientation to the new tasks. Such units should be oriented and encouraged to conduct the necessary staff development work to introduce the new curriculum. Indeed, it is essential that such units be represented in the curriculum committee that is established. It is useful to have an ongoing series of seminars, workshops and orientation sessions in the initial period of transition.

## **9. PROGRAMME EVALUATION**

One of the tasks of the committee that will steer the new curriculum segment on HIV/AIDS and STI will be to set up the mechanisms to determine how the new training programme is fulfilling its objectives. It is also useful to identify the secondary and unforeseen effects of the programme on students and the institution. Such evaluation will require the collection of some baseline data (for comparison later), periodic student assessments, and both quantitative and qualitative measurements. Programme evaluation, usually (and

understandably), takes a much lower priority in planning and implementation, the attention of the staff being consumed by the day-to-day activities. Rarely is budget allocated to programme evaluation. However, in those institutions in which regular mechanisms are in place for programme evaluation, the evaluation of this teaching and learning component could form part of the larger evaluation exercises. The point to bear in mind is that the absence of any type of evaluation, after establishing a new programme, could severely compromise the effect the programme may have later on the institution.



## Imparting Knowledge and Skills to Students

The report is the outcome of an informal consultation held in Bangkok. The group went into great detail about the specific topics to be covered and as it may be of help to those who try and implement the proposed curriculum, the details are given below.

### **A. Recognize, diagnose and treat patients with HIV/AIDS**

Knowledge required:

- General morbidity patterns in the community and country
- HIV prevalence by area, age, sex etc.
- HIV virology and immunology
- Pathogenesis
- Staging – CD4, Virus load
- Clinical manifestations and profile

- pulmonary
- dermal
- oral
- neurological
- neoplastic
- Diagnosis
  - criteria (CDC, WHO, Bangui, National etc.)
- Management
  - treatment
  - national policy
  - opportunistic infections
  - education
  - nutrition
  - condoms
  - psychosocial aspects
- Common opportunistic infections
  - TB
  - PCP
  - Diarrhoea
  - Fungal infections
- Drugs
  - for opportunistic infections and regimen

- anti-retrovirals
- adverse reactions
- costs
- Preventive therapy and its usefulness
  - TB
  - PCP
  - Post-exposure Prophylaxis
  - Role of cotrimoxazole or antimicrobials
- Paediatric AIDS
- HIV and Pregnancy
- Universal Precautions
- Psychosocial Aspects and Quality of Life issues

The skills needed to carry out the objective of recognizing, diagnosing and treating patients with HIV/AIDS are the following:

- Communication skills, especially relating to interpersonal communication
- History-taking with a complete physical examination
- To make appropriate laboratory tests requests and to interpret the reports
- Practise Universal Precautions

- Sexual history-taking
- Problem-solving and analytical skills
- Team-building skills
- Developing non-judgemental attitudes
- Practising Universal Precautions

**B. Provide Counselling and appropriate referral services**

Knowledge required:

- HIV infection and treatment
- Implication of a diagnostic test, informed consent
- Culture and beliefs
- Patient's rights
- Concept of counselling; purpose and process
- Implications of a test
- Counselling facilities and services available in the Region
- Ethical issues

The skills needed to carry out the objective of providing counselling and appropriate referral to HIV/AIDS cases are the following:

- Practice of counselling
- Communication skill
- Writing referral notes

### **C. Diagnose and manage STIs**

Knowledge required:

- Modes of transmission and prevention
- Common STIs
  - what they are
  - manifestations
  - laboratory tests and procedures
- Drugs used
- Syndromic management, its components, impact
- HIV –STI interactions
- STIs in women
- Partner notification issues
  - partner examination
  - partner referral

- contact tracing

The skills needed to carry out the objective of diagnosing and managing STIs are the following:

- Examination skill
  - detecting discharges and ulcers
  - collection of smear
  - light microscopy
- Demonstration of the correct use of a condom
- Counselling for partners
- Communication skill

#### **D. Manage HIV-related pregnancy**

Knowledge required:

- Vertical transmission
  - mechanism
  - risk
  - role of breastfeeding and of milk substitutes
  - costs
- Role of various interventions
  - AZT – short-term vs long-term
  - Anti-retrovirals in combination therapy

- Decisions in HIV+ women
  - regarding contraception
  - conception
  - terminating pregnancy
- Diagnosis of neonatal HIV infection
- Prognosis in neonatal HIV infections
- Treatment of neonatal HIV infection
- Management of HIV+ pregnancy

The skills needed to carry out the objective of managing HIV-related pregnancy are the following:

- History-taking
- Communication/education
- Counselling
- Manage delivery with Universal Precautions
- Postpartum care

#### **E. Discharge planning, referral and follow-up**

Knowledge required:

To understand:

- Concept of need for continuum of care

- Community and home care
- Role of health care worker and other agencies, programmes
  - PLWHA
  - legal aid agencies
- Importance of follow-up visits
- Criteria of referral
- Financial aspects

The skills needed to carry out the objective of managing discharge planning, referral and follow-up are the following:

- Communication skills
- Training skills
- Ability to mobilize the support of NGOs for community and home care

**F. To use appropriate tests and interpret the results**

Knowledge required:

- National Policy for HIV testing
- Testing strategies
- Common tests available

- ELISA
  - Rapid tests
  - Simple tests
  - Western Blot
  - Virus load
- Sensitivity, specificity, predictive value
  - Interpretation of test results
  - Voluntary Counselling and Testing
  - Informed consent
  - Unlinked anonymous tests
  - Screening of blood and organs
  - Pre- and post-test counselling

The skills needed to carry out the objective of using appropriate tests and interpreting the results are the following:

- When to request HIV tests
- Interpret results
- Maintain confidentiality

#### **G. To encourage family and social support**

Knowledge required:

- Epidemiology of AIDS
- Patient needs for health and other types of care/support
- Role of family and community in providing care and social support
- Role of different sectors
- Understanding of the culture and resources that can be mobilized for support

The skills needed to carry out the objective of encouraging family and social support are the following:

- To mobilize community support
- To mobilize NGOs and other sectors for providing legal, financial and educational support

#### **H. To promote and protect patient's rights**

Knowledge required:

To understand

- Human rights, access to care
- Discrimination and rejection
  - isolation
  - quarantine
- Confidentiality and informed consent

- Empowerment and gender issues
- Obligation to treat / nurse
- Ethics and law
  - access to care
  - access to schooling
  - employment

The skills needed to carry out the objective of promoting and protecting patient's rights are the following:

- Interpersonal communication
- Maintain confidentiality
- Carry out advocacy

To carry out the above objective, the following attitudes have to be inculcated:

- Respect for all persons
- Compassion

## **I. To produce behaviour change**

Knowledge needed:

- Epidemiology
  - magnitude of problem

- trends
- community prevalence
- national policy for prevention and care, including the ethical issue
- Mode of transmission
  - horizontal – sharing of needles, unprotected sex, unsafe blood
  - vertical – mother to foetus, breastfeeding
  - accidental – needle stick
- How HIV is not transmitted?
- Consequences of diseases related to HIV
  - tuberculosis
  - other opportunistic infections
- Risk and risk behaviour
  - vulnerability of women, youth
  - risk associated with sexual activities
  - pattern of risk-taking in the community
  - safer sex
  - accidental exposure to infection
- Condom promotion
  - Skills needed to meet the objective of producing behaviour change are the following:

- Communication skills
- Managerial skills
- Diagnostic skills
- Team work skills
- History-taking skills
- Use of appropriate language
- Demonstration of correct condom use

## J. Universal Precautions

Knowledge required:

- Universal precautions and the concept that all patients are assumed HIV-positive
- Conduct normal delivery taking precautions
- Manage accidental injuries
- Disinfection and sterilization
- Post-exposure prophylaxis

The skill needed to meet the objective of practising and promoting Universal Precautions is the following:

- Demonstrate and practise universal precautions

## **K. Use blood appropriately**

Knowledge required:

- National policy regarding blood transfusions
- Rational blood use
- Blood safety measures
- Use of blood components
- Autologous transfusions
- Screening donated blood v/s testing blood donors
- Favourable donors – voluntary non-remunerative donors

Skills needed to meet the objective of using blood rationally and safely are the following:

- Identify safe and non-safe blood
- Encourage voluntary donations
- Counsel for autologous transfusions

## Departmental Groupings

(The list given below is just an example taken from one medical school. Not every medical school would have the same departmental structure. Groupings will need to be adapted to meet individual circumstances, but most topics will fit into the following illustrative pattern.)

Anatomy	The immune system
Physiology	Nutrition and the immune system
Microbiology	Virology – The HIV structure and natural listing, and HIV-testing policies and strategies
Pathology	
Forensic Medicine	Human Rights, Right to get treatment and medical care Confidentiality Partner notification Informed consent
Immunology	HIV and immune system CD4 count

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	Viral load
Medicine	<p>Clinical Management (diagnosis and treatment of opportunistic infections)</p> <ul style="list-style-type: none"> <li>• Tuberculosis</li> <li>• Pneumonia</li> <li>• Fungal infections, Candida</li> <li>• Kaposi Sarcoma</li> </ul> <p>Counselling of a HIV-positive patient            Care of the terminally ill patient            Home care            Hospital infections and universal precautions</p>
Cardiology	
Dermatology	Dermal manifestations and their management
Venereology/ Department of STI	<p>Common STIs –organisms            –manifestations            –investigations            –syndromic            management            Counselling and Partner notification            STI-HIV interactions</p>
Paediatrics	Demonstrating the correct use of condoms

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	<p>Neonatal HIV infection</p> <p>Infant feeding and HIV including use of breast-milk substitutes (where breastfeeding is contraindicated)</p> <p>Management of Paediatric AIDS</p>
Psychiatry	<p>Drug use and abuse / HIV</p> <p>Human sexual behaviour</p> <p>Interview techniques</p> <p>Confidentiality</p> <p>Interpersonal communication</p> <p>Counselling</p>
Obstetrics and Gyneacology	<p>HIV and pregnancy</p> <p>Management of pregnancy in the HIV-positive patient</p> <p>Short-term AZT therapy</p> <p>Conception / contraception in the HIV-positive patient</p> <p>Universal precautions and deliveries</p>
Haematology	<p>Blood components</p> <p>White cells / CD4 and CD8 cells</p>
Transfusion Medicine	<p>Blood safety</p> <p>Rational use of blood</p>

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	Blood components Donor recruitment and retention, screening donated blood
Hospital Management	Universal precautions Disposal of Sharps Disposal of contaminated wastes
Surgery	Universal precautions Rational use of blood / plasma expanders
ENT	Oral candidiasis
Ophthalmology	
Emergency Medicine	Treating a bleeding injury Resuscitation of the HIV-positive person

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<p>Preventive and social medicine including epidemiology</p>	<p>Mode of transmission, efficiency of transmission Control of infectious diseases Disinfection and sterilization Medical Ethics Human rights Unlinked anonymous testing Informed consent Testing policy for HIV Testing strategies Home care and community support Communication and the mass media Community education and awareness generation Prevention of HIV infection including safer sex Condoms Validity of tests Sensitivity and specificity Prevalence and predictive value of tests AIDS and STI surveillance HIV sentinel surveillance Epidemic / pandemic</p>
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<p>Social and behavioural sciences</p>	<p>Culture and belief systems Sexual behaviour and other risk factors Community structure and organization NGOs and their role Patients' and doctors' rights  Ethics Communication Interview techniques Counselling Rights and needs of a terminally ill patient Community-based care Family-based care Team building Working intersectorally Social support systems Gender issues Care of orphans</p>
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## Annex 3

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