



World Health Organization

WHO recommendations for clinical mentoring to support scale-up of HIV care, antiretroviral therapy and prevention in resource-constrained settings

Planning Consultation on Clinical Mentoring: Approaches and Tools to Support Scaling-up of Antiretroviral Therapy and HIV Care in Low-resource Settings, Geneva, Switzerland, 7-8 March 2005

Working Meeting on Clinical Mentoring: Approaches and Tools to Support the Scaling-up of Antiretroviral Therapy and HIV Care in Low-resource Settings, Kampala, Uganda, 16-18 June 2005



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LIST OF PARTICIPATING ORGANIZATIONS

The AIDS Support Organization (TASO), Uganda
AIDS Treatment Information Centre (ATIC), Uganda
Australian Society for HIV Medicine, Inc., Australia
Botswana-Harvard School of Public Health Partnership, Botswana
Clinton Foundation HIV/AIDS Initiative, United States of America
Centers for Disease Control and Prevention, United States of America
Centre d'Information de Prospection et de Conseil (CIPEC), Benin
Centre for Infectious Disease Research in Zambia (CIDRZ), Zambia
Eastern Cape Regional Training Centre, South Africa
Elizabeth Glaser Pediatric AIDS Foundation, Uganda
Family Health International, United States of America
Health Resources and Services Administration (HRSA) Global HIV/AIDS Program, United States of America
Institute for Human Virology/AIDSRelief, United States of America
International Center for AIDS Care and Treatment Programs (ICAP), United States of America
International Training & Education Center on HIV (I-TECH), United States of America
Joint Clinical Research Centre, Uganda
Malawi Ministry of Health
Masaka Regional Referral Hospital, Uganda
Médecins Sans Frontières, Switzerland
Medical and Scientific Watch, France
Mildmay Centre, Uganda
Multicountry Columbia Antiretroviral Program (MCAP), United States of America
Oromia Regional Health Bureau, Ethiopia
Pangaea Global AIDS Foundation, United States of America
Partners In Health, United States of America
Prince Leopold Institute of Tropical Medicine, Belgium
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1. CLINICAL MENTORING: RATIONALE AND RELEVANCE TO A PUBLIC HEALTH APPROACH TO SCALING UP HIV CARE AND ANTIRETROVIRAL THERAPY

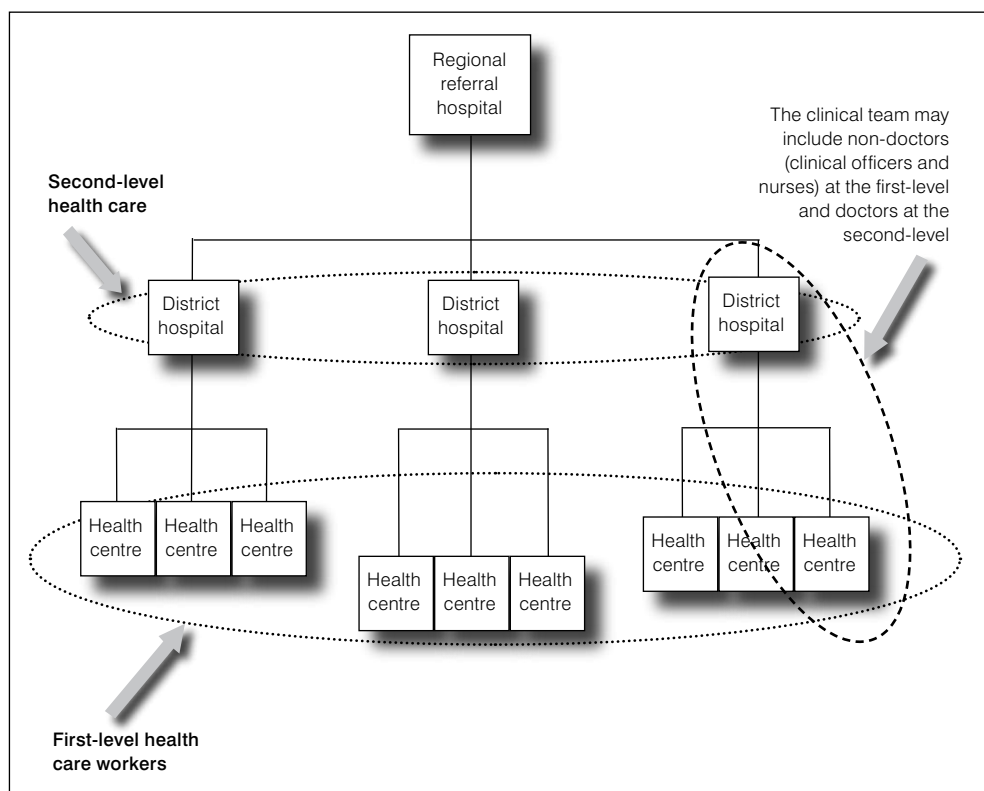
Clinical mentorship is a system of practical training and consultation that fosters ongoing professional development to yield sustainable high-quality clinical care outcomes. Expertise in managing antiretroviral therapy and opportunistic infections is often not found on the district management team in programmes that are starting to scale up HIV treatment. A clinical mentor in the antiretroviral therapy context is a clinician with substantial expertise in antiretroviral therapy and opportunistic infections who can provide ongoing mentoring to less-experienced HIV clinical providers by responding to questions, reviewing clinical cases, providing feedback and assisting in case management. This mentoring occurs during site visits as well as via ongoing phone and e-mail consultation. Clinical mentoring is critical to building successful district networks of trained health care workers for HIV care and treatment in resource-constrained settings.

This publication discusses the rationale and relevance of clinical mentoring to the public health approach to scaling up HIV care and antiretroviral therapy (antiretroviral therapy). This discussion is based on the Planning Consultation on Clinical Mentoring: Approaches and Tools to Support Scaling-up of Antiretroviral Therapy and HIV Care in Low-resource Settings, Geneva, Switzerland, 7–8 March 2005 and the Working Meeting on Clinical Mentoring: Approaches and Tools to Support the Scaling-up of Antiretroviral Therapy and HIV Care in Low-resource Settings, Kampala, Uganda, 16–18 June 2005 (Annexes 1 and 2).

The public health approach to HIV care and antiretroviral therapy forms the basis for training and supporting the clinical team. The public health approach to antiretroviral therapy and opportunistic infection management is based on simplified clinical decision-making, standardized first- and second-line antiretroviral therapy regimens, a limited set of laboratory and radiological options and a limited set of therapeutic options, making it appropriate for most resource-constrained clinical settings.

Decentralization of HIV care and antiretroviral therapy. Decentralizing services to district hospitals and health centres allows increased access, equity and better support of adherence to care and treatment by providing HIV care and antiretroviral therapy close to the home of the person being treated. This approach relies on all levels of the health care system playing a role in caring for people living with HIV. Decentralizing HIV care and antiretroviral therapy requires simplified treatment guidelines that allow antiretroviral therapy and opportunistic infection management outside specialized referral centres. Effective training and strong follow-up after training are important to ensure the consistent application of simplified guidelines that will benefit the largest number of people.

Strengthening the district health system. First-level health facilities (often called health centres or clinics) are meant to be the point of entry into the health system for people who need basic primary care. Second-level health facilities (such as the district hospital) are also called first-referral level facilities, since this is the level to which first-level health facilities refer people who have complicated problems requiring admission or a higher level of outpatient care. Finally, people whose health problems are too complicated for second-level health facilities can be referred to a tertiary care centre, often the regional referral hospital. Decentralizing HIV care and antiretroviral therapy requires capacity-building at first- and second-level health facilities so they can provide services that previously have been restricted to specialized referral centres.



Task-shifting. The delivery of chronic HIV care depends on a large number of well-trained health care personnel. Experience in many countries has shown that non-specialist doctors, clinical officers and nurses can effectively deliver HIV-related clinical services, including antiretroviral therapy. In the public health approach, tasks can be shifted from more specialized to less specialized health care workers – for example, from specialized physicians to general physicians and/or clinical officers, from physicians to nurses and from nurses to non-medical counsellors.

A proportion of patients managed with first-line regimens and monitored by non-physicians will develop complications that require management by an experienced doctor or medical officer, and a proportion of those cases (with unusual complications or severe illness) will benefit from the immediate availability of hospital care. Standardized clinical protocols need to guide consultation and referral of complex cases, with clearly identified “flags” for referral to a more experienced clinician. Effective clinical mentoring provided through skilled input on-site by case consultation or case review, or consultation by phone, radio or e-mail, can provide the necessary support to help inexperienced providers of HIV care in making sound health care decisions and appropriate referrals.

Practically, doctors in some countries are reluctant to task-shift, especially if there is underemployment or if doctors do not have experience in sharing certain tasks for greater efficiency and quality of care. Nevertheless, these task shifts are critically important for the public health approach. For example, many countries are exploring shifting antiretroviral therapy prescription from physicians to clinical officers and nurses. With good adherence support from community nurses, counsellors who are lay people, people living with HIV or home-based care volunteers, this can potentially improve outcomes and minimize the complications of antiretroviral therapy associated with treatment failure.

Transitioning to chronic HIV care. Many resource-constrained countries are now starting to provide life-sustaining antiretroviral therapy. The delivery of this therapy requires people living with HIV to engage with the health care system in an ongoing, chronic care relationship for the remainder of their lives. Chronic HIV care also involves people in managing their own illnesses and helps them to adhere to treatment and to self-manage simple symptoms. This is a model of care that is not widely utilized in resource-constrained settings, where public provision of services is often weak and the acute care model predominates. Even local experts with much experience in HIV care and antiretroviral therapy may not know much about a chronic care model.

Standardized content and care pathways. Standardized, simplified clinical protocols and standard operating procedures facilitate task-shifting at all levels of the health system. Mentors need to be familiar with the clinical protocols used by all health care workers (such as national treatment guidelines), not just the ones that the mentors use in their own clinical practice. These need to be available in formats that are easily referenced, such as pocket guides or wall charts. This is necessary for good clinical care but also for clinical mentoring. Mentoring should reinforce the use of these protocols and simplified guidelines whenever possible while discouraging excessive dependence on algorithms in place of applied thinking in specific situations.

Continuing education. Few countries have a system of continuing education. There is very little follow-up with trainees after initial training. In addition, recently trained providers usually have little access to experienced providers to call upon for consulting, reviewing cases, solving problems and reinforcing clinical decisions and diagnoses. Staff re-education and ongoing clinical training must be strongly emphasized to ensure high-quality care and addresses the public health concern of the spread of HIV drug resistance in the setting of rapid enrolment and scale-up.

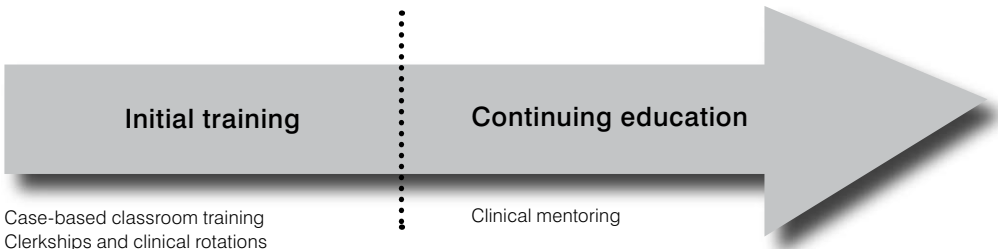
2. DEFINITION AND OBJECTIVES OF CLINICAL MENTORING

2.1 Definition

Clinical mentorship is a system of practical training and consultation that fosters ongoing professional development to yield sustainable high-quality clinical care outcomes. Clinical mentors need to be experienced, practising clinicians in their own right, with strong teaching skills.

Mentoring should be seen as part of the continuum of education required to create competent health care providers. It should be integrated with and immediately follow initial training. Initial in-service training should be case-based and participatory, based on the principles of adult learning. Mentoring is an integral part of the continuing education process taking place at the facilities where health care workers manage patients. It starts at the point where the initial training ends.

Viewed in this way, there should be no conflict between the local “trainer” at the district or regional levels and the clinical mentor. Often someone at the district level is assigned to coordinate or teach health care workers using a standardized training curriculum. This person sometimes has sufficient clinical experience to be a mentor but often does not. The “trainer” provides the educational foundation for the continuing education that follows and should work closely with the clinical mentor to coordinate activities in a district or region.



2.2 Objectives

- supporting decentralized delivery of HIV care, antiretroviral therapy and prevention with high-quality care at all levels;
- supporting the application of classroom learning to clinical care;
- maintaining and progressively improving the quality of clinical care;
- building the capacity of first- and second-level providers to manage unfamiliar or complicated cases (antiretroviral therapy toxicity, immune reconstitution inflammatory syndrome, complicated HIV/tuberculosis (TB) cases, treatment of children or pregnant women) or referring them when appropriate; and
- improving the motivation of health care workers by providing effective technical support.

2.3 Clinical mentoring versus supportive supervision

Supportive supervision is one of the most critical components of capacity-building. Proper supervision and follow-up after training ensures that health care workers can implement the lessons learned during initial training sessions. Supportive supervision focuses on the conditions required for proper functioning of the clinic and clinical team. Are the key requirements for HIV care, antiretroviral therapy and prevention in place? Is an adequate process of case management in place? Supportive supervision aims at improving the quality of HIV care and treatment service delivery through joint observation, discussion, and direct problem-solving, mentoring and learning from each of the topics observed and discussed and planning the way forward.

Supportive supervision		Clinical mentoring
<ul style="list-style-type: none">• Space, equipment and forms• Supply chain management• Training, staffing and other human resource issues• Entry points• Patient satisfaction	<ul style="list-style-type: none">• Patient flow and triage• Clinic organization• Patient monitoring and record-keeping• Case management observation• Team meetings• Review of referral decisions	<ul style="list-style-type: none">• Clinical case review• Bedside teaching• Journal club• Morbidity and mortality rounds• Assist with care and referral of complicated cases• Available via distance communication

Play an important role in supervision. As HIV-related services are decentralized to first- and second-level facilities, district coordinators need to be trained in supervising these services. Examples of supportive supervision tools: the WHO Integrated Management of Adult and Adolescent Illness (IMAI) Training Course for District HIV Coordinators (<http://www.who.int/hiv/capacity>) and the United Republic of Tanzania Ministry of Health/National AIDS Control Programme Supportive Supervision Tool (<http://www.districthealthservice.com>).

Although clinical mentoring and supportive supervision overlap considerably, the activities are different enough so that they will probably be implemented by different teams. Clinical mentoring focuses on the professional development of health care workers; clinical mentors need to be experienced, practising clinicians in their own right. District supervisory and management teams often have full-time administrative duties and do not have the time or experience to be effective clinical mentors. Clinical mentoring and supportive supervision are complementary activities that are both necessary to build a system of care.

Clinical mentors should not discount the importance of supportive supervision and at the very least need to be proficient in the overlapping activities indicated above. The way the clinic service is organized and functioning affects the ability of individual health care workers to implement clinical care protocols. Ample opportunities exist during clinical mentoring to incorporate supportive supervision activities such as discussing issues including patient flow, workload, organization of care and treatment services, triage and recording practices. Clinicians who do not understand the basics of how the clinic or clinical team should function will not be effective as clinical mentors even if they are extremely knowledgeable about managing HIV disease.

At the same time, clinical mentors need to keep in mind that a crucial aspect of mentoring is to promote a nurturing relationship with the mentee. Introducing a programme oversight responsibility can confound this relationship. When incorporating supportive supervision activities, clinical mentors should take a different approach than the HIV district coordinator. The clinical mentor should keep in mind that the goal of these activities is to improve the clinical environment rather than to audit or police the quality of care. For the same reason, it is generally best to have separate visits by the clinical mentor and the HIV district coordinator, even if logistically this is more convenient.

2.4 Related activities

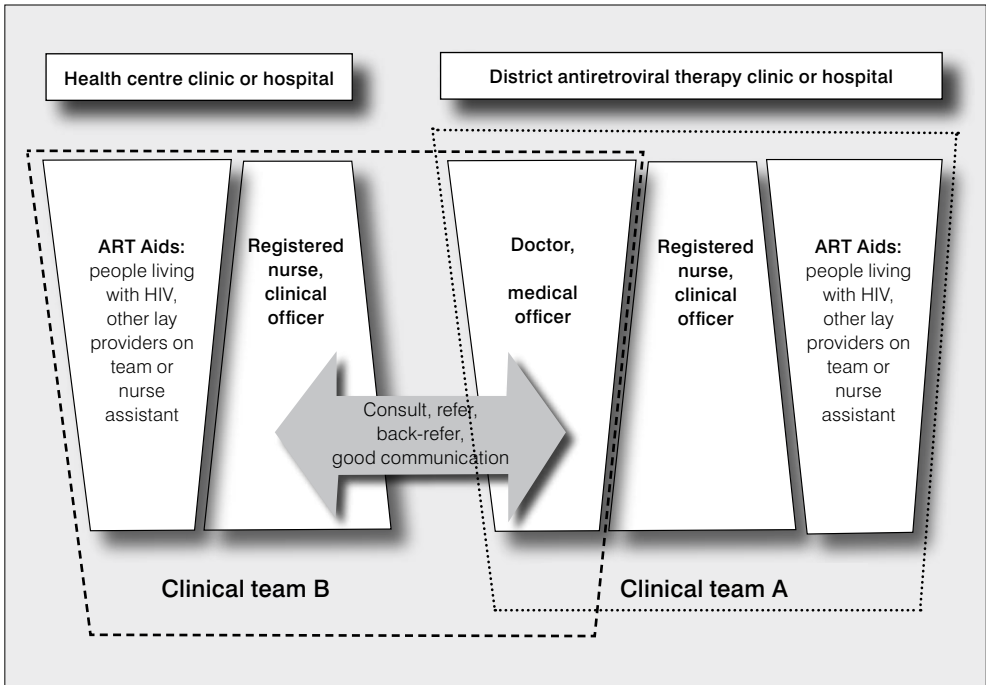
For the purpose of these guidelines, the following activities are not included in the definition of clinical mentoring: shadowing or clinical rotation, referral care, other quality assurance approaches and counselling mentoring.

- Shadowing or clinical rotation or other approaches for clinicians-in-training to join an established clinical team, particularly for clinicians that have recently been through classroom or didactic training, should be considered part of the initial training process and not part of clinical mentoring or continuing education.
- Referral care includes back-referral and adequate communication with the referring clinical team. There will always be a proportion of people living with HIV that need referral to a higher level of care for managing complicated opportunistic infections or antiretroviral therapy. Some, but not all, clinicians working at referral levels may also be mentors for the same first-level facilities that are the source of their referrals. One of the benefits of an effective system of clinical mentoring is the ability to decrease inappropriate referrals.
- Other quality assurance approaches concentrate on process improvements and do not involve individual case review by an expert clinician. These include collaborative learning approaches (such as team-to-team support), systematic audits of a random sampling of patient records and electronic medical records. All of these approaches have the potential to generate information that can guide mentors towards important clinical issues that should be stressed with mentees during mentoring interactions.
- Counselling mentoring: basic counselling skills (such as adherence counselling) are a necessary part of HIV care and antiretroviral therapy. Clinical mentors need to be able to educate mentees in these skills, especially busy clinicians who need to make a transition to chronic HIV care from acute care. However, even small clinical teams should have a member focused on counselling (such as a lay counsellor or antiretroviral therapy aide). These counsellors will quickly begin to encounter complex counselling issues (disclosure, post-test counselling and support, etc.) beyond the expertise of a clinical mentor. A system of regular mentoring in counselling is needed to improve the quality of counselling and to prevent burnout. For an example of training materials for counselling mentors, see *Train the counsellor mentor: participant manual*, developed by HIVCORE (HIV/AIDS Counselling, Research and Evaluation Group) at the School of Psychology, University of KwaZulu-Natal, South Africa.

3. DEVELOPING A NATIONAL SYSTEM OF CLINICAL MENTORING

3.1 Clinical teams

In many resource-constrained settings, the most highly trained health care workers at first-level health facilities may be nurses, midwives or other non-physician health care workers such as nurse-practitioners, clinical officers or health officers. A doctor usually works at the second-level facility but may also be expected to rotate periodically through the first-level facilities in the referral area to provide clinical supervision and manage complicated cases. A clinical team may therefore include health care workers from both levels.



In this example, clinical team A works in the outpatient clinic at a second-level facility. The doctor works in the hospital and does not see every person living with HIV but has received second-level training and is always available to manage complicated cases.

Clinical team B is at one of the satellite health centres in the catchment area of the district hospital. In this case, the doctor is off-site and visits the facility once a week to manage and review complicated cases.

3.2 Planning for district delivery of HIV care, treatment and prevention

At the national level, there is a need to advocate for health ministries to allocate resources for mentoring (through the Global Fund to Fight AIDS, Tuberculosis and Malaria and/or external partners) via funds already allocated for training; mentoring should be viewed as continuing training that is integrated with initial in-service and pre-service training.

The national plan for clinical mentoring should be compatible with scaling up the delivery of HIV services through the district health system. A sustainable national mentoring plan cannot rely solely on “external” mentors, whether expatriate or national experts. Even national experts are too few to be relied on to mentor large numbers of first- and second-level clinical teams.

Paradoxically, external mentors will be required at the beginning in most countries because of the widespread lack of clinical expertise in HIV care and antiretroviral therapy. But initial use of external mentors should not obscure the long-term goal of having a national network of local clinical mentors. External mentors should be accompanied on site visits to first- and second-level facilities by local mentors, who will continue to mentor clinical teams after the external mentor has moved on to a different region or country.

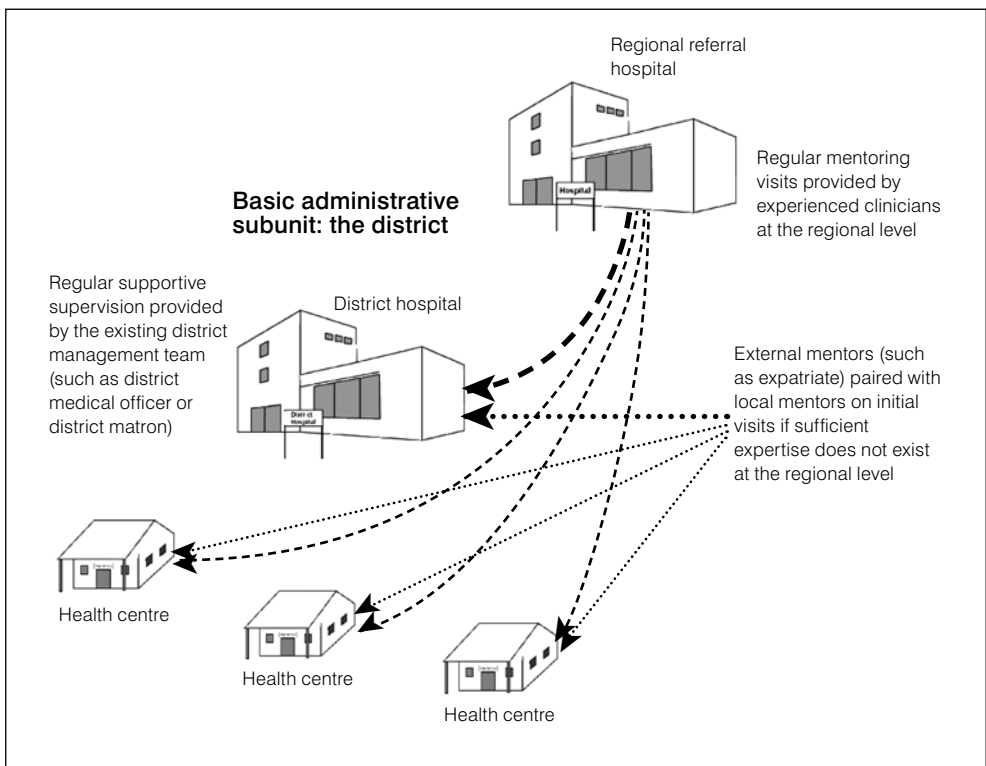
The overall crisis in human resources affects the capacity for clinical mentoring. Understaffing at hospitals and health centres means that very few clinicians can stay out of their duty station for a period of time (particularly if they work as facilitators for in-service initial training). This simply underscores the importance of rapidly building local capacity for clinical mentoring, with the assistance of external experts if necessary. With more local clinical mentors, there is less workload for each individual mentor.

Local clinical mentors should be integrated into the existing district health system. They should be practising in a referral facility and mentor clinical teams at the satellite sites that refer to their facility. Their first-hand knowledge of the referral patterns in the district will allow them to mentor much more effectively than an expatriate mentor. Clinical mentoring facilitates the effective decentralization of services to first-level facilities, which is important for chronic HIV care and adherence. It can also decrease the frequency of late or inappropriate referrals, which can cause serious inconvenience and burden to the person living with HIV, the family and the health system. Effective clinical mentors must remain practising clinicians. Mentorship duties need to be integrated into mentors' normal clinical practice. Experienced clinicians should not be taken out of their clinical practice to be full-time mentors.

In many countries, HIV care and antiretroviral therapy is so new that second-level health care workers, such as doctors at district hospitals, will have limited experience in managing difficult cases and are unlikely to be good clinical mentors. These doctors also need clinical mentoring, since they will be expected to immediately manage the most complicated cases in the district. With clinical experience and specific training in mentoring skills, they can become mentors for first-level health care workers over time.

In the first stage, potential clinical mentors should be selected from the lowest level at which clinical expertise in HIV/AIDS exists – often the regional referral hospital. During this transition period, external (such as expatriate) mentors should also be available to build the capacity of local mentors through direct supervision and joint site visits. These mentors should be provided with time and funding to do site visits at first- and second-level facilities in their referral area once they have the basic necessary skills and experience.

In the second stage, external mentors are no longer needed, and the focus should be shifted to training more clinical mentors at the regional and district levels. With time, some health care workers at second-level facilities will be able to become clinical mentors.



The importance of mentoring clinicians at district hospitals should not be overlooked. As previously stated, HIV/AIDS is often new for clinicians at district hospitals (and in some countries, even at tertiary referral hospitals). These clinicians require close external support and supervision because they receive referrals from the health centre level and thus need to be able to provide care for people with more complicated disease than those at health centre level. The lack of competent referral services at the district hospital level (even if they exist at the regional referral hospital) produces a gap in the district network system that can produce a lack of trust in the health system as a whole, particularly at the beginning of a new HIV antiretroviral therapy programme.

3.3 Budgeting

Mentoring, despite being one of the fundamental ways to teach clinical medicine, is not part of the public health system of most countries and therefore has not been part of routine planning and budgeting in health ministries. Realistic national and district budgets need to be developed to sustain the clinical mentoring system and its activities. These budgets need to include funds for:

- salary support and incentives and travel expenses:
 - > local clinical mentors who visit sites and support clinical teams by telephone or radio
 - > external clinical mentors;
- communication support: radio, mobile phone, landline, e-mail or Internet access where appropriate; and
- support for mentoring visits to sites: coordination, fuel, logistics and per diem payments.

For estimating the costs of mentoring visits, assume the following.

- Each new site requires one mentoring visit every month for the first six months, followed by one visit every two to three months.
- Each mentoring visit takes at least one day and frequently three to four days.
- External (visiting) or local mentors can make mentoring visits.
- External mentors should be paired with local mentors at the beginning and can then be phased out as the experience of the local mentoring team increases.

The length of the mentoring visit will depend on the level of clinical expertise in the country and the type of facility that is being mentored. At a small health centre where a small clinical team is providing basic outpatient HIV care and antiretroviral therapy with limited diagnostic capacity, one day may be enough. Mentoring the larger clinical team at a hospital that is also providing inpatient care, however, may take longer, particularly when HIV antiretroviral therapy services are being initiated.

Below is a sample schedule of mentoring visits for a district in which there are five HIV care and antiretroviral therapy sites: one district hospital and four satellite health centres. It presumes that

clinical teams at all of the sites undergo initial training at the same time. The initial training is then followed by intensive clinical mentoring site visits once a month for six months and then once every three months after that. In this example, mentoring visits last one day, although the exact length of time will depend on the resources available and the training approach used in each country. This schedule needs to be adapted to the specific local situation in each country.

Month	1	2	3	4	5	6	7	8	9	10	11	12
District hospital	X O	 O	X O	 O	X O	 O	X O	 O	X O			X
Health centre 1	 O	X O	 O	X O	 O	X O	 O	X O		X		
Health centre 2	X O	 O	X O	 O	X O	 O	X O	 O			X	
Health centre 3	 O	X O	 O	X O	 O	X O	 O	X O	X O			X
Health centre 4	X O	 O	X O	 O	X O	 O	X O	 O			X	

X = local mentor (regional referral hospital), O = external (expatriate) mentor.

The schedule assumes that local mentoring capacity is too limited to do monthly visits at all sites at the beginning, but that external mentors are available to support the programme. Local mentors at the regional referral hospital are paired with external or expatriate mentors during on-site visits at the beginning but later conduct on-site visits alone. After the first six to nine months, external clinical mentors are phased out completely or focus on poorly functioning facilities. The exact schedule of paired visits will depend on the clinical and mentoring capability of the local mentor and the ability of the external mentor to work independently. A great deal depends on the burden of disease, comorbidities in the population and clinical expertise of the local mentors. This schedule does not indicate telephone and radio consultations between the mentor and the clinical team that happen as needed between mentoring visits.

Another factor to be considered is the amount of time available for local mentors to participate in mentoring visits. Most health ministries restrict the amount of time that physicians or medical officers can devote to other non-clinical duties. Further, a local clinical mentor needs to maintain his or her clinical skills, so full-time clinical mentoring is not advisable. Country experience in this issue is still limited, but a limit of 25% (one week per month) for each local mentor could be built into the schedule for each region.

3.4 Monitoring and evaluating the national programme of clinical mentoring

Mentoring should also be considered as a mutual learning process, both for the mentor and mentee. It should also be source of feedback to improve the health care system and service delivery. Clinical mentors have close relationships with clinical staff, and they often learn about important problems concerning the work environment and system of care that affect the quality of care at a specific facility. These may include the need for additional human resources or a specific type of training course for staff at a site. Clinical mentors should work closely with supervisors (district or regional) who are better situated to solve these types of problems while being careful to maintain the mentor–mentee relationship.

The effectiveness of the mentoring programme can be monitored nationally in several ways. This information should also be used to improve the programme step by step, particularly as local mentors take over most of the mentoring responsibility in their regions or districts and external (expatriate) mentors are phased out. The following indicators should not be considered exhaustive, as country experience with national mentoring programmes is still very limited. The indicators are:

- number of site visits over a specified period of time for each mentor;
- number of mentor hours per month per facility;
- monitoring the knowledge and skills of mentees across a period of time;
- mentee feedback after each mentor visit:
 - > evaluation of individual mentors
 - > appropriateness of mentor's questions or comments to the mentee concerning technical aspects of the mentee's practice
 - > the mentor's questions and phrasing of suggestions to the patient are appropriate in content and timing;
- review of mentors' and mentees' logbooks (Annex 3); and
- periodical mentors' review meetings: a forum for exchange of experiences among mentors.

These indicators measure how well the mentoring system is functioning, not the effectiveness of mentoring on quality of care. For quality of care indicators, see *Patient monitoring guidelines for HIV care and antiretroviral therapy (ART)* (<http://www.who.int/hiv/pub/imai/en>).

Annexes 4–8 describe in detail some clinical mentoring plans of health ministries and their partners.

4. SELECTION, TRAINING AND PREPARATION OF CLINICAL MENTORS

A clinical mentor is a clinical practitioner (such as a doctor or nurse) who has experience relevant to the health care delivery system in question (resource-constrained) and expert knowledge in antiretroviral therapy and HIV care and who is approachable and accessible as an ongoing resource in the ongoing professional development of the mentee.

4.1 Expatriate versus national mentors

Expatriate clinicians with HIV and antiretroviral therapy expertise can be very effective as mentors in resource-constrained countries that have limited experience in chronic care of people living with HIV. The reality is that, in many countries, very few clinicians have expertise in HIV and antiretroviral therapy even at the tertiary referral level. When a national mentoring plan is being created, the level of expertise needs to be taken into account. If insufficient clinicians at the tertiary referral level can be mentors, expatriate mentors may be necessary.

Such clinicians, however, need to be carefully selected to ensure they have the attitudes and interaction and communication skills appropriate to mentoring in different cultural settings. Previous clinical experience in resource-constrained settings can be very helpful. They need the ability to communicate with health care workers at different levels about various aspects of the clinic. They need to be able to commit significant time to this activity and be willing to spend time in training or orientation to the local system in preparation for a mentorship role. The extremely common model of the Western doctor flying in for one month to visit clinics in Africa usually results in more learning for the Western doctor than his or her African counterparts.

This is not to say that shorter-term placements of three to six weeks cannot be effective, but that this should happen in the context of an organization with considerable experience in clinical training in resource-constrained settings that has a long-term, established relationship with local coordinators. If expatriate mentors do not have previous clinical experience in resource-constrained settings, they require careful training and close supervision.

In the long run, a system of mentorship based on the availability of expatriate mentors is not likely to be sustainable. Some Médecins Sans Frontières projects have reported high turnover of expatriate mentors as a problem, indicating that, even in large projects with increased resources, supervision is a problem.

The primary objective of the external or expatriate mentor should therefore be to train the local mentor or local mentoring team. If the external mentor focuses on mentoring of the clinical team at the expense of the local mentoring, this will not be sustainable.

The long-term goal is a system of mentorship using national and local clinicians, the advantages of which include accessibility, availability and familiarity with local systems (Box 1). Even when local expertise does not exist, experienced expatriate mentors can train local mentors. These mentors should maintain their own ongoing clinical practice in the treatment of HIV and associated conditions. A limitation in resource-constrained settings is that qualified and experienced local people are often taken away from clinical work and tasked with administrative duties behind a desk. A common reason for this is that the public sector often does not accommodate balancing administrative duties within the public system with any reasonable compensation.

Box 1. Potential sources of mentors

Potential sources of expatriate mentors

- *Academic HIV and infectious disease physicians conducting research projects (could make a minimum commitment to mentorship while in country)*
- *Post-fellowship expert physicians recruited and trained for extended (1–2 years) positions as mentors and mentor trainers abroad (such as the Global Health Service Corps proposed by the United States Institute of Medicine)*
- *Coordinated placement of shorter-term mentors by sponsoring organizations with considerable expertise in clinical training in resource-constrained settings.*

Potential sources of local clinician-mentors

- *Active local clinicians who have extensive experience in opportunistic infections and HIV and strong clinical skills (could have antiretroviral therapy training topped up as needed)*
- *Private practitioners*
- *Retired physicians, including paediatricians*
- *Military physicians*
- *Repatriating clinicians*
- *Nongovernmental organization–based clinicians (for example, sites funded by the United States President’s Emergency Plan for AIDS Relief with medical officers with one to two years of antiretroviral therapy experience; several weeks per year could be requested).*

4.2 Non-physician mentors

Physicians are not the only candidates for clinical mentors. A wide range of non-physician health care workers go by different names in different countries: nurses, midwives, nurse-practitioners, clinical officers, health officers, etc. These non-physician health care workers should also be trained to be clinical mentors, particularly for clinical teams at the first-level health facility.

Highly specialized knowledge about HIV/AIDS is not needed to deal with most of the clinical management issues at the first-level health facility. At the health centre level, the clinical team may not include a physician. Many first-level health care workers are not physicians and may relate better to a mentor of the same or similar type of health care worker. In addition, mentoring includes issues of clinic and clinical team functioning as well as individual clinical decision-making. Nurses and nurse-practitioners are often very capable of solving most problems discovered during on-site visits (Box 2).

Box 2. Nurse-practitioners as clinical mentors in Zambia

At the Centre for Infectious Disease Research in Zambia (CIDRZ), nurse-practitioners from the United States have been used as effective clinical mentors for Zambian clinical officers. Nurse-practitioners are able to provide important input on the multiple aspects of HIV care and the functioning of the clinic as a whole and may be more effective at translating knowledge and experience to different levels of health care providers than highly trained specialists.

4.3 Training of clinical mentors

- Standardization of expertise specific to HIV and antiretroviral therapy in adults and children
 - > Familiarity with simplified treatment guidelines for management of HIV/AIDS at district hospital and health centre, outside of specialized referral centres
 - > Regular clinical updates and continuing education
 - > Facilitating connections to resources and networks
- Interpersonal process skills
 - > Adult participatory education training
 - empathic communications skills
 - active listening
 - challenging and confronting
 - giving and receiving nonjudgemental feedback

- > Self-awareness (awareness of one's own qualities and limitations) is important for the mentor to deliberate on the process as that of a learning quest
- > Communication skills
- > Administration and management skills
- > Group facilitation training
- Mentoring skills
 - > Communication with the mentee or preceptee
 - Role play and preparation to support the adaptation of mentoring style to different settings and mentees (appropriate technology and level of training) are important
 - > Communication with patients or clients
 - Providing effective feedback to the mentee
 - Demonstrating technical skill and knowledge in interaction with the mentee
 - Developing a mentoring programme and curriculum appropriate to the expressed goals and needs of mentees
 - Ensuring the ongoing development of the mentee
 - Disseminating clinical practice and information updates
 - Fostering the development of the mentee as a mentor
 - Ensuring ongoing updates and improvement of clinical training for both the mentor and mentee
 - Ensuring succession planning
- Understanding the local system of health care and mentorship (particularly important for external mentors):
 - > Information booklets; normative guidelines
 - > Organigram of the local health care system
 - > Availability of diagnostic tests and procedures
 - > Overall mentoring plan for the district and specifically for the facility to be mentored
 - > Names of previously trained staff and contact information for networking
 - > Understanding of the working relationships within the clinical team members (for instance, between doctors and nurses)
 - > Showing appreciation and respect for the skills, experience and knowledge of local staff

- > Understanding when health providers should consult or refer at every level of the health system
- > Visiting facilities and patients with someone who is very experienced to get familiar with clinical presentations and norms; high burden of general illness, higher rates of anaemia and malnutrition and higher threshold for hospital admission require clinical reorientation
- > Cultural considerations:
 - Different manner of expression for respect, sympathy, active listening, thoughtfulness, appreciation, conflict management, resolution or avoidance
 - Different connotation of some words or expressions (verbal or otherwise)
 - Language barrier (both with the patient and the mentee), which might be further complicated if the mentor requires a translator; this might be perceived as a burden on the local staff

4.4 Training materials for mentors

Established approaches to developing mentors have been actualized and some materials have been developed:

- Train the counsellor mentor: participant manual (from HIVCORE, School of Psychology, University of KwaZulu-Natal, South Africa). Although this material focuses on counsellor mentors, it has excellent sections on developing mentoring skills and a mentor programme.
- IMAI training materials on how to consult by phone (Chapter 18 of the *Participant manual for the WHO basic ART clinical training course* <http://www.who.int/hiv/pub/imai/manual/en/index.html>); for nurses to summarize a case by phone, and for medical officers and doctors to give advice and supervise by phone (<http://www.who.int/hiv/capacity>).
- IMAI training course for clinical mentors. This is an introductory course to be given to potential clinical mentors before they start mentoring that covers IMAI clinical protocols as well as mentoring and communication skills (<http://www.who.int/hiv/capacity>).

5. APPROACHES AND TOOLS FOR CLINICAL MENTORING

Preliminary experience has also shown that intensive clinical mentoring should take place during the first three to six months after the new site has opened. The site visits described here presume a developed and well-functioning system of clinical mentoring. In any system, however, the following tools will help further staff training and lead to overall process improvement at newly opened HIV care and antiretroviral therapy sites.

5.1 Site visits by mentors

Site visits by clinical mentors are particularly important right after the initial training when the clinical team is starting HIV care and antiretroviral therapy. Site visits are a time for the mentor to quickly reinforce the skills learned in the initial training and also to start building a relationship with the members of the clinical team. These visits will take at least one full day and consist of the following activities:

- one-on-one case management observation;
- review of patient records and provider documentation of health care (clinic-based records);
- clinical case review: people recently initiated on antiretroviral therapy, routine and challenging or difficult cases and deaths;
- multidisciplinary team meeting to elicit feedback: identifying potential problem areas and issues and recommendations; and
- documentation of the visit: who was mentored, for how long, what types of cases were discussed, findings, recommendations and lessons learned.

A checklist can be very useful to guide mentors on which aspects to cover during the one-day visit. Such a tool or memory guide describes briefly the various aspects of good organizational and clinical practices to be reviewed.

Sequence of steps in a clinical mentoring visit



For centrally located or speciality referral centres with sufficient resources, clinical mentoring visits and off-site support via telephone may only be needed during the initial stage. Once the site is established and up and running, the most experienced on-site staff members of the clinical team can lead the continuing education activities such as journal club, morning meetings or “morbidity and mortality” rounds. These expert clinicians are also good candidates to be trained to be clinical mentors for first- and second-level facilities in the referral area.

First- or second-level facilities may require ongoing periodic mentoring visits from external (expatriate) or local (from the regional referral centre) mentors. These on-site mentoring visits should probably take place at least once every three months after the initial intensive six to nine months.

5.1.1 One-on-one case management observation

In this activity, the mentor observes the mentee managing a patient and gives feedback. This can be difficult for several reasons. The mentor must be able to give feedback to the mentee in a way that is tactful yet productive. Often one mentor will be mentoring multiple health care workers from different health care workers on a single clinical team, so the mentor may not be the same type or level of health care worker as the mentee. Finally, the mentor must manage time wisely. There will probably not be enough time to observe all the clinical team, but the mentor should make sure to observe everyone over several visits.

When observing a health care worker evaluate a patient, the mentor should use a checklist based on the national standardized clinical protocols appropriate for the type of health care worker (see Annex 9 or the IMAI training course for district HIV coordinators, Module H, <http://www.who.int/hiv/capacity>). For example, a checklist for a medical officer evaluating a person receiving antiretroviral therapy (Box 3) should include an assessment of the ability:

- to obtain a good medical history;
- to perform a comprehensive physical examination;
- to ask about possible toxicity from antiretroviral drugs or other drugs;
- to assess adherence to antiretroviral therapy and other treatments;
- to screen and treat for opportunistic infections;
- to review other concomitant medications;
- to assess for prevention practices;
- to educate the patient on relevant issues related to the visit; and
- to perform a quick home or situational assessment to determine others (partner or children) at risk for HIV infection and refer them for voluntary counselling and testing, etc.

Box 3. Checklist of prompting questions

The International Training & Education Center on HIV (I-TECH) has created a checklist of prompting questions for clinical mentors to use and give feedback to a mentee during a clinical evaluation when observing an evaluation for sexually transmitted infections. The questions are phrased so that mentors can communicate in a tactful, nondisruptive manner that preserves the relationship between the health care worker and the patient.

5.1.2 Review of patient monitoring data

The mentor should review the record system used to capture health information for each patient. In many cases, this is a paper-based system using some combination of individual patient records and registers (pre-antiretroviral therapy and antiretroviral therapy) for aggregation. Annex 10 shows examples of generic forms that have been adapted in several countries. For a detailed discussion, see *Patient monitoring guidelines for HIV care and antiretroviral therapy (ART)* (<http://www.who.int/hiv/pub/imai/en>).

The mentor should make sure that the patient record or chart is available when reviewing the management of a specific patient with a health care worker or with the entire clinical team. The mentor should reinforce the importance of keeping good medical records.

During a mentoring visit, the mentor should spend a few minutes reviewing at least five patient records at random and looking for recording errors. The registers should then be checked to make sure that information has been correctly transferred from the individual patient records to the registers.

Ensuring appropriate use of medical documentation is crucial for the continuity of care required for HIV care and treatment. Reviewing the system of medical records and the use of medical records is an overlap with supportive supervision that is particularly important immediately after initial training when clinical teams are starting to incorporate these new forms into their daily work. The clinical mentor, however, should focus on maintaining a nurturing relationship with the mentee; the goal of reviewing medical records is for the mentor to better understand how to help and teach the clinical team, not to police or audit medical errors.

The clinical team should already know how to use the register data to produce the regular reports (including both cross-sectional and cohort analysis data) routinely required by the district. The clinical mentor should review these reports prior to the visit, since they contain data (particularly on outcomes) that can indicate areas of clinical practice the clinical mentor needs to target.

In addition to the regular reports produced by the clinical team, the pre-antiretroviral therapy and antiretroviral therapy registers, in countries where they have been adapted, contain additional information for clinical mentors about the quality of care at the health facility. A subset of the register data is used for reporting to higher levels, but not all of it. Much of the information in the registers is not for reporting purposes, but can be quickly reviewed and tallied to detect patient care patterns in that facility. This is one of the advantages of well-designed paper-based patient monitoring systems – facilities are not dependent on outside statisticians and experts to collect and analyse patient data.

Table 1 lists the possible indicators (both part and not part of routine reporting). The clinical mentor should know how to quickly calculate the indicators that are not part of regular reporting from the registers and demonstrate to the clinical team how to do this. This empowers the clinical team to improve quality between mentoring visits and demonstrates the importance of good record-keeping.

Table 1. Possible indicators of quality in HIV care and antiretroviral therapy (cont)

Agreed minimum essential data elements	What happens to the data	Indicators or other aggregated data
<p>At baseline, 6, 12 months then yearly; disaggregated by sex and child versus adult:</p> <ol style="list-style-type: none"> 1. On antiretroviral therapy and: <ul style="list-style-type: none"> • Alive • Dead • Lost or dropout or transferred out 2. Current regimen <ul style="list-style-type: none"> • Original first-line • Substituted to alternative first-line • Second-line or higher 3. CD4 test results 4. Functional status 5. Regimen collected in last quarter <p>Source: III. Antiretroviral therapy</p>	<p>Transfer to antiretroviral therapy register and then to cohort analysis report</p>	<p>Based on cohort analysis form, at 6, 12 months then yearly and compared with baseline:</p> <p>Indicators related to success of antiretroviral therapy:</p> <ul style="list-style-type: none"> ✓ 2a. Percentage alive and receiving antiretroviral therapy versus mortality on antiretroviral therapy ✓ 2b. Percentage still on a first-line regimen • 2c. Percentage working, ambulatory, bedridden • 2d. Median or mean CD4 counts (optional) <p>HIV drug resistance early warning indicators:</p> <ul style="list-style-type: none"> • Percentage switched to a second-line (or higher) regimen • 3a. Percentage collected antiretroviral drugs at 6/6 or 12/12 months

✓ National core indicators.

Table 1. Possible indicators of quality in HIV care and antiretroviral therapy (cont)

Agreed minimum essential data elements	What happens to the data	Indicators or other aggregated data
<p>1. When registered for HIV care</p> <p>2. When medically eligible for antiretroviral therapy</p> <p>3. When medically eligible and ready for antiretroviral therapy</p> <p>4. When antiretroviral therapy started</p> <p>5. Dead before antiretroviral therapy</p> <p>6. Lost or transferred out before antiretroviral therapy</p> <p>Source: III. Antiretroviral therapy summary</p>	<p>Transfer to pre-antiretroviral therapy or antiretroviral therapy register and then to quarterly report</p>	<p>Indicators related to patients accessing HIV care and antiretroviral therapy:</p> <p>Disaggregated by adult versus child, sex and pregnancy status:</p> <ul style="list-style-type: none"> • 1a. Number enrolled in HIV care: new and cumulative ever at the facility • 1b. Number started on antiretroviral therapy: new and cumulative ever started at the facility <p>Disaggregated by adult versus child and sex:</p> <ul style="list-style-type: none"> • 1d. Number currently receiving antiretroviral therapy at the facility <p>Not disaggregated:</p> <ul style="list-style-type: none"> • 1c. Number eligible for antiretroviral therapy but

Table 1. Possible indicators of quality in HIV care and antiretroviral therapy (cont)

Agreed minimum essential data elements	What happens to the data	Indicators or other aggregated data
<ol style="list-style-type: none"> 1. Entry point 2. Why eligible for antiretroviral therapy 3. Reasons for: <ul style="list-style-type: none"> • Substitution within first-line • Switch or substitution to or within second-line • Stopping antiretroviral therapy 4. Number and weeks of each interruption in antiretroviral therapy 5. Pregnancy status 6. Start and stop dates of prophylaxis: <ul style="list-style-type: none"> • Co-trimoxazole • Fluconazole • Isoniazid 7. TB treatment 8. Adherence to antiretroviral therapy <p>Sources: II. HIV care. III. Antiretroviral therapy summary. IV. Patient encounter and family status</p>	<p>Transferred to pre-antiretroviral therapy or antiretroviral therapy register but used only by clinical team or district antiretroviral therapy coordinator – not transferred to quarterly report or cohort analysis</p>	<p>Indicators for patient and programme management at the facility or district level:</p> <ul style="list-style-type: none"> • Distribution of entry points in patients enrolled in HIV care • Why eligible for antiretroviral therapy: clinical only, CD4 or total lymphocyte count • Distribution of patients not yet receiving antiretroviral therapy by clinical stage • Distribution of reasons for substituting, switching or stopping to investigate problems; whether substitutions and switches are appropriate (use in context reviewing medical officer log) • Antiretroviral therapy interruptions: • Number and percentage of patients • Number of weeks • Percentage of pregnant women linked with interventions for preventing mother-to-child transmission (or simply use to generate lists to assure linkage) • Number receiving co-trimoxazole, fluconazole or isoniazid prophylaxis at end of quarter (for ordering prophylaxis drugs) • Number and percentage of patients receiving both TB treatment and antiretroviral therapy <p>3b. Percentages of patients with good adherence to antiretroviral therapy</p>

Table 1 Possible indicators of quality in HIV care and antiretroviral therapy (cont)

Agreed minimum essential data elements	What happens to the data	Indicators or other aggregated data
<ol style="list-style-type: none"> 1. Date of each encounter 2. Weight (each visit; percentage weight gained or lost) 3. Adherence to co-trimoxazole 4. Adherence to isoniazid 5. Potential side effects 6. New opportunistic infection or other problems 7. TB status (other than treatment or prophylaxis) 8. Referred or consulted with physician 9. Number of inpatient days 10. If poor adherence on antiretroviral therapy, reasons (coded) <p>Source: IV. Patient encounter and family status</p>	<p>Patient card only. Not transferred to register</p>	<p>Indicators for patient management at the facility level or special studies:</p> <ul style="list-style-type: none"> • Percentage of patients referred to a physician ❖ Common side effects, opportunistic infection, other problems: <ul style="list-style-type: none"> ❖ Patients with special problems ❖ Identify patients for review at clinical team meetings > Number and percentage of patients hospitalized and the number of days > Reasons for poor adherence

- ❖ These are used both for individual patient management and for review by a medical officer or clinical mentor on site visits. For potentially serious side effects that result in a consultation or referral, the medical officer needs to record this in the log and do further adverse-event reporting.
- > Tabulations for special studies.

5.1.3 Clinical case discussion

The clinical team at the site should select difficult cases from the regular patient caseload between mentoring visits (Annex 3). It may even be possible to ask the patient to come back when the mentor is there. This is very effective because it allows everyone to see exactly what is going on with the patient. Examples of difficult cases include patients who are not responding to treatment as expected, children, patients with severe drug side effects, etc.

The mentor should identify routine cases or unusual presentations of common illnesses to address pre-identified needs at the facility: pre-identified critical learning points or needs identified by ongoing quality improvement efforts.

Actual cases from the facility itself are generally preferable, but some mentors have used pre-prepared cases from other sites (Box 4). Ideally, a committee of clinical mentors would develop written casebooks of pre-prepared cases at the national level and distribute them to all clinical mentors for use during mentoring visits.

Box 4. An online library of clinical cases

A subgroup of the participants of the Working Meeting on Clinical Mentoring: Approaches and Tools to Support the Scaling-up of Antiretroviral Therapy and HIV Care in Low-resource Settings in Kampala, Uganda is developing a project to develop an online library of clinical cases that are:

- *from the field (multinational);*
- *uniform (from a template);*
- *easily accessible for mentoring purposes;*
- *free of charge;*
- *reviewed initially and then periodically;*
- *available to groups and organizations to be processed and adapted for more specific teaching purposes or curricula; and*
- *linked with images and graphics where applicable.*

The cases will be a combination of simple, routine cases that demonstrate clearly common conditions or concepts and reinforce basic training curricula and complicated case studies highlighting advanced differential diagnosis and clinical decision-making.

Case presentation and discussion. Whether a case is from the facility or a pre-prepared case, the mentor should lead the case discussion in the following interactive manner:

- presenting the case with interactive discussion;
- presenting the results of the physical examination;
- developing a problem list, reviewing clinical reasoning and establishing a diagnostic and management plan;
- emphasizing other areas including patient education, prevention, adherence and counselling; and
- summarizing learning points.

The mentor should try to apply the case to all components of the clinical team. Case discussions can also be supplemented by a clinical update by the mentor when appropriate: frequently asked questions, questions and answers and access to updates (digested, relevant reviews of clinical topics and updates).

5.1.4 Clinical team meeting

Regularly scheduled clinical team meetings (at least twice per month and ideally once per week) can be a good way to perform ongoing mentoring (Annex 11).

Topics covered during a team meeting can include:

- case discussions (as described in the previous section);
- review and discussion of existing guidelines and treatment algorithms;
- “journal club”: case presentation and/or specific lecture on topic of interest given to staff and supplemented with 1–2 pertinent articles from the literature (handed out to all staff present);
- personnel and skills development (oral presentation skills focusing on presentation of cases, organization of meetings, etc.);
- communication skills;
- team-building activities;
- system of care issues (such as referral); and
- improving the process (such as organization, triage and patient flow).

Preliminary experience has shown that these team meetings should preferably take place in the afternoons, as the mornings are often completely booked for patient consultation. Preliminary experience has also shown that it is best to rotate the format of these clinical meetings and not call them journal clubs but clinical review (or some equivalent) and to make them multidisciplinary and interactive whenever possible so that issues pertinent to each discipline represented can be addressed in necessary detail.

5.2 Mentoring by telephone and radio

Clinical mentoring visits should be complemented by mentoring by telephone between visits. The mentee functions independently between mentoring visits but ideally should be able to review case management plans with the mentor whenever necessary by telephone. Mentoring by telephone prevents serious clinical errors, reinforces the mentoring relationship, reduces mental stress for the mentee and provides useful feedback on the progress of the mentee to the mentor.

Telephone and telephone card packages. Mobile phones are particularly useful in supporting existing mentoring relationships. If a toll-free number is not available, SIM cards can be blocked to prevent calls made to any numbers except authorized ones. Phones equipped with blocked SIM cards can then be distributed to mentors and mentees to facilitate communication solely within the mentoring network.

The advantage of telecommunication is that phones are readily available and offer an opportunity for health care workers to interact directly with experts. However, health care workers are often not accustomed to presenting cases over the phone. Training is needed in how to present cases succinctly and comprehensively over the phone as in any other form of distance communication. The telephone is actually more convenient than Internet-based communication in this respect, since the mentor can quickly ask for clarification or additional information after a confusing case presentation. Systematic training can reduce frustration on both sides and make the learning process more efficient. The IMAI training materials include guidelines and exercises on phone consultation for mentees and mentors.

Changing the culture of consultation. Clear agreement on when to call for advice is important. It is also important to convey the fact that calling frequently is good and not bad. Health care workers are often not accustomed to seeking advice and may have had negative experiences when calling for advice. Consultation within the clinical team should also be encouraged.

The mentor may have to initially call the mentee regularly, to solicit problems, discuss cases and follow up on cases and problems discussed during previous site visits. Another option is to schedule regular conference calls for this purpose.

6. OTHER COMPLEMENTARY APPROACHES TO SUPPORT CLINICAL MENTORING

Several other approaches to continuing education can complement a national system of clinical mentoring. These approaches cannot substitute for direct on-site mentoring visits and direct communication by phone but can be very effective and should be integrated into clinical mentoring efforts. Clinical mentors should encourage mentees to use these methods, and these complementary approaches should reinforce the same standardized, national clinical protocols for management of HIV/AIDS.

6.1 Call centres: hotlines and warm lines

These telephone lines are set up so that health care workers and patients can make a toll-free or low-cost phone call to a centralized location. A hotline is a toll-free number that operates 24 hours per day and seven days per week and has traditionally served patients. A warm line operates solely during office hours (Box 5). Call centres can allow for quality control by recording and reviewing calls or by interviewing health care workers about the quality of the help afterwards. Periodic review by highly experienced HIV providers of the advice given from call centres is required to ensure the ongoing quality of these programmes.

One of the most common problems with call centres is that picking up the phone and seeking clinical guidance, particularly when the caller does not know the expert he or she is calling, is not part of the health care culture in most countries. These cultural barriers must be recognized and addressed to develop a useful clinical resource for health care workers.

Box 5. A warm line in Kampala, Uganda

The AIDS Treatment Information Center (ATIC) at the Infectious Disease Institute in Kampala has a warm line for health care providers (<http://www.atic-africa.org>). It is staffed by clinical pharmacists who are supported by the Infectious Diseases Institute clinical faculty. Their call-in centre is a high-tech system whereby the caller's phone number is automatically registered and then the ATIC staff returns the call at no cost to the caller. It also automatically develops a database for the number of calls and frequently asked questions. To date, ATIC has responded to more than 400 queries from more than 12 countries.

6.2 Telemedicine

Internet-based approaches to clinical mentoring can be very effective in certain settings. E-mail is increasingly available in developing countries and allows mentees to query mentors over great distances, including outside their country. However, there is an inherent lag in the communication process, which can be particularly frustrating if the mentee does not properly present all the pertinent information to the mentor. Training in case presentation via e-mail is usually necessary, even if the mentor and mentee are very comfortable with this technology.

In web-based telemedicine sites, mentees post difficult cases or general questions to the site and receive advice from virtual mentors. These types of web sites are more difficult to use than e-mail, but one advantage is that case presentation templates can be used to ensure that cases are presented correctly. In addition, these web sites can promote self-directed learning by referring users to other HIV-related web sites (Box 6).

The quality of information on the Internet varies greatly across sites and is not always up to date even on the web sites of reputable institutions. Collaboration is needed among HIV web sites to bring partners together, avoid duplication and develop accreditation criteria for web sites.

Box 6. A telemedicine service

The Prince Leopold Institute of Tropical Medicine, Antwerp (ITMA) telemedicine service started as a list server of cases and questions, developed a format for case presentation and then evolved into a web site in summer 2004 (<http://telemedicine.itg.be>). There is a standard format for submitting cases and/or questions. Currently there are 167 postings available on a discussion forum, classified by type in a searchable database. Interesting cases and recurring questions are elaborated as case rounds or frequently asked questions, which can be consulted through the search function for continuous education on the web site. Further, user-friendly guidelines, links and policy documents with particular focus on resource-constrained settings are available for consultation. The aim of some available interactive programmes (such as web quizzes, frequently asked questions, case rounds and the case database) is distance learning. Another important role played by the discussion forum database is that it allows ITMA to monitor the most common types of questions. For example, after one year of operation, 50% of questions were still about opportunistic infections. This emphasizes the need for training materials for managing opportunistic infections even when introducing antiretroviral therapy.

6.3 Twinning

Twining refers to a one-to-one mentoring relationship between two institutions. Ideally, these are long-term partnerships (at least three years) with clear, common objectives that serve as a basis for exchanging expertise and experience for the benefit of both institutions. Twining can be an effective way to provide technical assistance on clinic or hospital systems and to strengthen training programmes. One problem to avoid is partnering with a resource-rich institution that may not have adequate expertise in health service delivery in resource-constrained settings, where the collaboration turns into “medical tourism” without much benefit for the resource-constrained institution. A twinning broker, such as the Twining Center (<http://www.twiningagainstaids.org>) at the American International Health Alliance seeks to match institutions in a resource-constrained setting with an appropriate partner. The Twining Center is also exploring mechanisms to support collaboration between institutions in resource-constrained settings.

Table 2. Complementary approaches to support clinical mentoring

	Advantages	Disadvantages
Call centres	Good access Direct communication Interactive	Cost Culture of seeking advice Breaches of confidentiality
Telemedicine	Can provide access to many web sites Potential for self-directed learning Able to send pictures and documents More appropriate for advice about difficult cases	Poor access Online is expensive Quality and quantity of the information on the Web Getting the answer immediately might not be possible More complicated to use than e-mail Internet distractions
Twining	Supports personal relationships Increases motivation May attract extra funding Increases expertise in the long term	Money partly spent in a high-income country Initially, lack of expertise of the partner in the high-income country Risk of medical tourism Projects not very well integrated in national programmes – tend to be isolated pilot projects

7. SPECIAL ISSUES

7.1 Care of children

In resource-constrained settings with a high burden of HIV, decentralized HIV care of children should be the model rather than a few specialized paediatric centres. Where paediatric specialists are few, care for the whole family should be provided in hospitals and health centres rather than focusing only on adults, children or women. At the Mildmay Centre in Uganda, medical officers initiate and monitor antiretroviral therapy among children with uncomplicated cases, and a clinical mentor is called for complicated cases.

With family-centred care, however, there is a danger that children may fall through the cracks. Many clinicians are uncomfortable managing children. This is one factor that has led to a relative underutilization of formulations of antiretroviral drugs for children in some countries even when they are available.

At health facilities, even at hospital level, the generalist physician and paediatric nurse are the norm. Questions about care of children are more likely and mentors experienced with children and back-up to mentors with predominantly expertise with adults are important. Some specialized centres are needed to provide places for clinicians and mentors to develop expertise. Some paediatricians should be selected to be part of the clinical mentor pool, but clinicians who are expert in adult care also need to receive further training in care for children. Counselling mentoring may be more important than clinical mentoring for health care workers dealing with many important issues related to children.

Issues particularly important in care for children include:

- formulations of antiretroviral therapy and change in dosage with the growth of the child;
- development and nutrition issues;
- post-test counselling of young children and adolescents;
- disclosure (for minors or on the wards);
- adolescent issues dealing with treatment adherence and sexual behaviour; and
- adherence monitoring needs to take place in the home and not in the clinic, but family support is often poor (for example, the patients may be orphans).

7.2 Private practitioners

Private practitioners are one source of possible mentors for health care workers in the public sector. In many resource-constrained settings, almost all experience with antiretroviral therapy has been in the private sector. Further, many countries make little distinction between public and private physicians – a physician may work in a public clinic in the morning and at a private practice in the afternoon.

However, several issues need to be addressed to use private physicians effectively as clinical mentors.

- Private physicians, particularly those who have been using antiretroviral therapy for a long time, may not be familiar with national health ministry guidelines and clinical protocols and may use non-standard or suboptimal antiretroviral therapy regimens, etc. They may need clinical mentoring themselves.
- Private practitioners typically service affluent sectors of the community who can pay for privacy, a different patient population than in the typical public clinic.
- Private practitioners may have limited experience with a team approach to chronic HIV care.
- Private physicians may desire compensation for time away from their private practice.
- Private physicians may be less experienced with adherence counselling, which is time-consuming and less profitable.

If these challenges can be overcome, working directly with family practice and general medicine professional organizations can be very motivating for both mentors and mentees.

7.3 HIV/TB

The management of patients coinfected with HIV and TB is complicated clinically and programmatically. Clinical mentors can play an important role in improving the quality of care of HIV/TB coinfected patients of both of these aspects. Close coordination with the TB control programme is necessary, but integrated training and mentorship activities are natural at the district and facility level. The same health care workers are managing both diseases – often in the same patient.

Clinical aspects include:

- diagnosing TB among people living with HIV;
- initiating and managing antiretroviral therapy among patients receiving anti-TB treatment, including managing drug side effects;
- managing TB reconstitution syndrome among patients starting antiretroviral therapy; and
- offering HIV testing to people suspected of having or definitely having TB.

Supervisory aspects include:

- HIV testing and counselling of everyone suspected of having TB;
- prompt referral from the TB programme to the HIV care team and vice versa; and
- co-treatment support for TB treatment and antiretroviral therapy, including directly observed antiretroviral therapy in certain cases.

7.4 Injecting drug users

Several complex clinical issues are involved in managing injecting drug users living with HIV, including coinfection with hepatitis C and drug substitution. Many clinical problems, such as severe opportunistic infections common in injecting drug users living with HIV, require attention from tertiary referral centres. Nevertheless, first- and second-level health care workers should be supported to provide care that is as comprehensive as possible, as referral to tertiary-level facilities is often problematic. Clinical mentors can be an important source of information and back-up for clinical teams that are managing injecting drug users living with HIV.

ANNEX 1. LIST OF PARTICIPANTS FOR THE PLANNING CONSULTATION ON CLINICAL MENTORING APPROACHES AND TOOLS TO SUPPORT THE SCALING-UP OF ANTIRETROVIRAL THERAPY IN LOW-RESOURCE SETTINGS, WORLD HEALTH ORGANIZATION, GENEVA, SWITZERLAND, 7–8 MARCH 2005

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ANNEX 3. BOTSWANA AFRICAN COMPREHENSIVE HIV/AIDS PARTNERSHIPS (ACHAP) LOG BOOK FOR RECORDING CLINICAL DISCUSSIONS AND CLINICAL CASE

This logbook aims to monitor clinical training by keeping a record of cases discussed between preceptors and local staff for monitoring and evaluation as well as standardization of training.

Preceptors will provide logbooks to trainees, which will remain in the trainees' possession until clinical training is completed.

Each trainee will record 10 cases of initiating therapy and 20 follow-up cases.

In order to be certified as having completed the Clinical Preceptorship Programme, the trainees must demonstrate proficiency through direct experience in the following areas:

1. Initial evaluation of retroviral-naïve patient prior to initiation of therapy
2. Determination of patient readiness for the therapy according to Botswana guidelines on antiretroviral therapy
3. Initiation of antiretroviral therapy according to Botswana guidelines
4. Routine follow-up of patient already receiving antiretroviral therapy according to Botswana guidelines on antiretroviral therapy
5. Management of opportunistic infections
6. Basic patient education should include:
 - Medication adherence
 - Safer sex
 - Traditional medicine

The trainee must also demonstrate proficiency in the following areas of antiretroviral therapy care through direct experience, case conferences, lectures or individual discussions with the preceptor:

1. Identification and management of treatment failure
2. Isoniazid preventive therapy
3. Management of medication non-adherence
4. Initiation of antiretroviral therapy care in a patient on anti-TB treatment
5. Initiation of antiretroviral therapy care in a patient with baseline anaemia (haemoglobin <7 g%)
 - Anaemia
 - Hepatitis
 - Drug rash
 - CNS side effects
 - Peripheral neuropathy
 - Intractable side effects
6. Identification of lactic acidosis

Preceptee: _____ Preceptor: _____ Date: _____ Facility: _____

Monitoring of practical training

1. Initiation of antiretroviral therapy

Name of trainee:

Site:

Date:

Health care worker:

a. doctor

b. pharmacist

c. other, specify:

Initiation of antiretroviral therapy	Patient ID	Topic discussed
1 Date: Trainer:		
2 Date: Trainer:		
3 Date: Trainer:		
4 Date: Trainer:		
5 Date: Trainer:		
6 Date: Trainer:		
7 Date: Trainer:		
8 Date: Trainer:		
9 Date: Trainer:		
10 Date: Trainer:		

Preceptor: _____ Preceptor: _____ Date: _____ Date: _____ Facility: _____

2. Following up people living with HIV, major toxicity and side effects

Follow-up cases	Patient ID	Topic discussed
1 Date: Trainer:		
2 Date: Trainer:		
3 Date: Trainer:		
4 Date: Trainer:		
5 Date: Trainer:		
6 Date: Trainer:		
7 Date: Trainer:		
8 Date: Trainer:		
9 Date: Trainer:		
10 Date: Trainer:		
11 Date: Trainer:		

Preceptee: _____ Preceptor: _____ Date: _____ Facility: _____

Follow-up cases	Patient ID	Topic discussed
12 Date: Trainer:		
13 Date: Trainer:		
14 Date: Trainer:		
15 Date: Trainer:		
16 Date: Trainer:		
17 Date: Trainer:		
18 Date: Trainer:		
19 Date: Trainer:		
20 Date: Trainer:		

Completed on:

Preceptor:

Signature of preceptor Signature of trainee

Preceptee: _____ Preceptor: _____ Date: _____ Facility: _____

ANNEX 4. ON-SITE CLINICAL MENTORING: THE APPROACH OF THE INTERNATIONAL TRAINING & EDUCATION CENTER ON HIV (I-TECH)

I-TECH's primary objectives for clinical mentoring are consistent with WHO's public health approach to scaling up HIV care and antiretroviral therapy. Within the context of our overall framework, they include:

- supporting decentralized delivery of HIV care, antiretroviral therapy and prevention and continuous improvement of patient outcomes at all antiretroviral therapy delivery sites;
- promoting the application of classroom learning to clinical settings;
- improving the quality of clinical care and patient outcomes in resource-constrained settings; and
- building the capacity of primary care providers to provide comprehensive and integrated care using on-site clinical collaboration, consultation and directed support.

Our training strategy for our clinical mentoring approach is based on proven principles of adult learning, continuing medical education, instructional design, and the training framework developed by the AIDS Education and Training Centers (AETCs) to effectively and efficiently train clinicians to respond to the AIDS epidemic in the United States of America.

The mentoring relationship

Our definition for clinical mentoring is adapted from a report of the Standing Committee on Postgraduate Medical and Dental Education in the United States of America: "the process whereby an experienced, highly regarded, empathetic person (the mentor), guides another individual (the mentee) in the development and re-examination of their own ideas, learning and personal and professional development".

On-site clinical mentors are experienced clinician-trainers who provide case review, problem-solving, quality assurance and continuing education in the context of an ongoing personal relationship. Ideally, the mentor guides the mentee through five stages:

1. relationship building;
2. identifying areas for improvement;
3. responsive coaching and modeling of best practices;
4. advocating for environments conducive to good patient care and provider development; and
5. data collection and reporting.

The mentoring relationship

Modelling

- Greeting patients warmly
- Sensitive patient exam
- Injection safety practices
- Pain reduction techniques
- Multidisciplinary team approach
- Shadow or observe more experienced mentor

Facilitate discussions

- Difficult and complex cases
- Roles of clinical staff
- Ethical issues
- Patient flow
- Clinic set-up
- Patient triage
- Quality of care

Additional clinical training

- Case studies
- “Mini-lessons” based on needs of clinic
- Training of the trainers

Support

- Serve as an advocate
- Cheerleading for staff
- Listen
- Validate work of clinical staff
- Coaching and communication techniques

The clinical mentoring timeline

In the early phases of training and capacity development, I-TECH provides outside consultants, typically expert HIV clinicians, to lead classroom training, mentor local providers and support systemic change as needed. However, I-TECH emphasizes a train-the-trainer approach: in subsequent phases, local clinicians gain further independence in caring for people living with HIV and in training and mentoring their peers, while consultation from external experts is reserved for complex clinical cases or specific advanced management topics. Ideally, local systems are developed to support clinicians in treating even the most complex cases, for example, by developing regional expert consultation services.

Clinical mentoring follows an analogous path: in the first phase, through classroom training and/or local assessment, sites and individuals are identified for mentorship and advanced training. Intensive collaboration follows in which the mentor provides individualized training and facilitates skill-building through constructive feedback. Progress is measured in terms of the translation of knowledge and skills into improved patient care and clinical outcomes. Finally, the mentor or trainer is able to scale back his or her engagement to occasional follow-up and consultation while providing focused training elsewhere.

Monitoring and evaluation

The targeting of training and mentoring resources to increasingly lower levels of health care workers at higher levels of training requires careful monitoring and evaluation strategies to ensure that the investment translates into improved patient care and clinical outcomes. During clinical mentorship, mentees' acquisition of knowledge and skills is assessed through observation, self-report and demonstrated capacity to work through case studies or vignettes. Attitude and intent to apply knowledge and skills acquired in training are measured through participant self-assessment, action plans, interviews and written evaluations.

In the I-TECH approach, clinical mentorship evaluation includes routine clinical observation of providers practising at their sites using tools developed specifically for this purpose. We work closely with mentors and mentees to identify settings where the use of these tools is appropriate. Mentorship also provides I-TECH with opportunities to monitor progress toward overall programmatic goals.

Conclusion

I-TECH seeks to serve both as a source of state-of-the-art, resource-appropriate clinical expertise and as a partner in the development and evolution of self-sustaining training systems for HIV/AIDS care and support. The I-TECH approach to clinical training is distilled from relevant educational literature and from years of AETC experience providing continuing medical education to HIV care providers in the United States of America. Our model of clinical mentoring supports the implementation of a decentralized, networked system of care so urgently needed in scaling up access to care and treatment for people living with HIV throughout the developing world.

ANNEX 5. AIDSRELIEF CLINIC MENTORING PROGRAMME: DEVELOPMENT OF HIV TREATMENT EXPERTISE WITHIN THE FAITH-BASED HEALTH CARE NETWORK

AIDSRelief's challenge is unique in that we provide care mainly to the rural faith-based mission hospitals. The decentralized faith-based health care infrastructure utilizes very few tertiary referral hospitals. Additionally, rural dispensaries run by nursing staff and home-based care projects with community nurse support only are examples of settings that require a more in-depth training model. Different treatment populations with markedly different socioeconomic factors require a level of expertise and a different level of technical assistance.

Both mentoring and preceptorship must be seen as an ongoing and continuous process. This means pairing one highly experienced antiretroviral therapy expert (mentors) with 2–5 less-experienced AIDSRelief providers (preceptors) per country. The mentor and the preceptor will work as a team within a treatment site, seeing patients together two to three days a week. This interaction will lead to highly experienced local experts or preceptors. Preceptors are taught the process of HIV continuity of care, efficient outpatient clinic management, quality improvement techniques as well as clinical decision-making. Lastly this approach will support treatment at an AIDSRelief point of service and in turn, develop "training sites". Preceptors will rotate from base training sites to assigned points of service developing longitudinal relationships with other emerging sites and precepting different level providers two to three times a week. Preceptors will be assigned to regions or sites and responsible for increasing quality at those sites. It is our hope that this will model will form a strong link between the medical quality assurance and quality improvement staff, commodities management staff and the programmatic and accounting staff.

It is anticipated that it will take one to two years of an ongoing process to develop an "expert" preceptor to in turn become a mentor, depending on the experience level upon entering the programme. Existing seasoned staff and newly graduated physicians could be ideal candidates.

Developing a clinical mentoring plan

Starting a clinical mentoring programme requires identifying a strong site and providing in-depth didactic training. As preceptors become comfortable with all the curricula presented, together you can develop "standard operating procedures" to move forward. This can include:

- observation of preceptors' current practice
- performing under supervision
- independent practice with case review
- independence
- transition to mentor.

Developing a preceptor

The key to developing a preceptor to eventually become a mentor is teamwork; it is imperative that you see patients together. Seeing patients in follow-up together is critical for clinical decision-making; both can see progression of the disease, confirm diagnosis and witness the outcomes of a shared decision-making process.

Some things to be reviewed and to keep in mind when mentoring a preceptor are the aspects of outpatient clinic efficiency and HIV continuity of care as well as training on clinical outcome measures and quality improvement methods.

Role of a preceptor

Longitudinal and frequent interactions with designated points of service gives more incentive and accountability to preceptors. To begin, build familiarity with the point of service by observing ongoing clinical practices, nursing utilization, functioning of the clinic, functioning of adherence programmes, educational programmes, record-keeping and any quality assurance already being done. Effective train-the-trainer programmes should include modelling of approaches to HIV care, what efficient care would look like and how to make better use of nursing. Quality assurance and quality improvement should be modelled; together the preceptor and mentor should perform continuous chart review, disease-specific chart review, mortality rounds and case studies. By reviewing specific clinic problems, the mentor will improve training in opportunistic infection diagnosis and care.

Development of critical pathways and optimizing non-physician staff to support treatment

Optimizing non-physician staff to support HIV care and treatment allows for clear identification and establishment of expectations of what different levels of providers should be accomplishing. This will depend on the treatment setting (home-based care, referral hospital or a nurse-only community clinic). It is important to integrate staff to improve the overall efficiency of the continuity of care: triage skills, side effect recognition and treatment skills, adherence support skills as well as the ability to educate. The preceptor should help to build a foundation of knowledge and improve clinical judgement, allowing the nurse or other non-physician provider to make decisions on what is critical, what should be addressed immediately and what should be referred.

Increasing the use of nursing staff by developing critical pathways will allow each programme to define the expectations and roles of different providers. Nurses should play a critical role in the point of service, but this requires breaking the paradigm that physicians have to complete the initial patient encounter. Teach nurses to take appropriate histories: present illness, past medical

history, current medications, allergies, past antiretroviral therapy exposure, psychosocial history, barriers to adherence, family history and treatment preparation. Nurses can also be used for diagnostic ordering: ordering pre-determined laboratory work and diagnostics. This will require equipping nursing personnel with the following:

- appropriate triage skills
- algorithms to recognize and manage antiretroviral therapy side effects
- skills to maximize adherence to therapy
- decision analysis and development of clinical judgement

One of the most critical elements in optimizing the use of non-physician staff is to develop and train nurses to recognize appropriate referral parameters.

Support after training: ongoing exchange

Support after training is integral to any preceptorship model. Continuous communication is key – this means keeping current and supplying providers in actual clinical care with the most up-to-date information. As much as possible, longitudinal support should be provided on-site. Ongoing communication includes the importance of the case-based approach, transfer of practical experience and updates in new knowledge in antiretroviral therapy and regular, quick turnaround to case questions. This serves to improve validity of clinical decisions, improves the confidence of providers and breaks down isolation. Continuous communication can be accomplished through e-mail or a mailing list server where cases received from the field are reviewed daily by an expert and feedback is sent out to all field providers. Additionally, communication can be provided through a web-based case library and curriculum, technical newsletters and by providing in-depth knowledge on current treatment issues. Finally, it is important to maintain a schedule of regular training visits to the sites.

A continuous quality improvement plan will help both the mentor and preceptor to stay in contact.

ANNEX 6. BOTSWANA AFRICAN COMPREHENSIVE HIV/AIDS PARTNERSHIPS (ACHAP) CLINICAL PRECEPTORSHIP PROGRAMME

This plan is based on clinical outcomes and provides feedback to providers in a group process; they learn from each other's experiences and provide opportunities to develop local best practices.

The Clinical Preceptorship Programme is a Government of Botswana initiative developed specifically for training in relation to new antiretroviral therapy sites in management of HIV/AIDS for rapid roll-out of the Masa Antiretroviral Therapy Programme. Coordinated centrally by the Ministry of Health and funded by ACHAP, the Clinical Preceptorship Programme places senior HIV experts (physicians and adherence counsellors) usually on three- to six-month rotations to all new antiretroviral therapy sites prior to the roll-out of the site. The duration of the Clinical Preceptorship Programme is limited to six months per site.

Seconded preceptors provide clinical support in HIV and a number of other related specialized medical areas, in order to enhance HIV clinical standards and practices and train and supervise existing health care staff.

Seconded physicians and adherence counsellors and nurses provide assistance through offering their expertise in HIV/AIDS management according to the training plans drawn up by the local administrators with the ultimate goal of transferring skills to local health care teams. A secondment doctor (and nurse in most cases) is sent to each site on a three- to six-month rotation basis to provide:

- rapid, facility-based, team training specific to each type of health care worker;
- clinical mentorship and problem-oriented learning based on Botswana's national guidelines for HIV treatment and the national curriculum of the KITSO (Knowledge, Information and Training Shall Overcome AIDS) AIDS Training Programme; and
- operational and managerial support to the local administration.

Structure

The Clinical Preceptorship Programme is a training programme of the Government of Botswana, coordinated by the Ministry of Health. The Ministry of Health provides guidance and training plans according to the specific training needs of each antiretroviral therapy site defined by the local administrators (superintendents and district health teams).

A selection committee of four physicians comprising representatives from Botswana's Ministry of Health, the host (Botswana) medical institution and ACHAP reviews the curricula vitae of candidates, approve the appointment of physicians and adherence counsellors (nurses) who meet the selection criteria and assign approved physicians and adherence counsellors to the respective antiretroviral therapy sites in Botswana.

The Clinical Preceptorship Programme coordinator oversees and coordinates the Programme and reports to the National Training Coordinator at the Ministry of Health and to the ACHAP Project Leader. The manager liaises between the local administrators at antiretroviral therapy sites, seconded staff, Ministry of Health and the ACHAP Project Leader.

Seconded preceptors provide site-specific and health care worker-specific theoretical training as well as hands-on clinical training according to the training plans provided by the superintendents and district health teams with the objective of transferring skills by the end of the training period.

ACHAP pays the salaries of seconded medical staff as well as travel expenses based on one return ticket from the individual's country or state of residence to Botswana for each deployment of three to six months. The approved medical institutions continue to pay for the social charges and pension contribution of their seconded staff. The Government of Botswana has agreed to provide furnished housing, utilities and local transport related to the project, but ACHAP makes reasonable allowances for such items.

Curriculum

The Clinical Preceptorship Programme provides theoretical and practical training according to the national curriculum developed by the KITSO AIDS Training Programme based on Botswana's national guidelines on antiretroviral therapy.

For theoretical training, the Clinical Preceptorship Programme uses the KITSO AIDS Care Fundamentals Module comprising 12 lecture series as well as the preceptors' own training materials as part of the theoretical training, which is followed by a KITSO examination at the antiretroviral therapy sites.

Practical training is also based on the national curriculum and the national guidelines and takes place in the HIV clinics and medical wards during ward rounds. The preceptor supervises initiating therapy and managing follow-up cases and opportunistic infections for a minimum period of three months at the hospitals and three months at the clinics at each antiretroviral therapy site.

Monitoring and evaluation

Qualitative assessment tools have been developed in the form of questionnaires to evaluate the perceived satisfaction of the administrators and trainees. Quantitative assessment is based on number of health care workers trained per preceptor and to an extent, the number of patients enrolled in the Programme, as this variable is influenced by multiple factors other than training.

What is a site?

Each antiretroviral therapy site is organized as a referral or district hospital supported with two to four satellite clinics. The Ministry of Health administers hospitals, whereas Botswana's Ministry of Local Government administers the district clinics. Preceptors share their time equally between the hospital and the district clinics and provide theoretical and clinical training to all relevant staff across the site.

Referral and/or district hospitals at the antiretroviral therapy sites carry out the following activities:

- pretest and post-test counselling for inpatients;
- rapid testing and enzyme-linked immunosorbent assay (ELISA) for diagnosing HIV status;
- CD4 and viral load laboratory testing (district hospitals send samples to Princess Marina and Nyangabgwe Hospitals);
- screening for antiretroviral therapy eligibility;

- antiretroviral therapy initiation (initial prescription written and drugs dispensed);
- drug-specific counselling;
- ongoing check-ups for complex therapy-related issues (routine issues to be followed up at clinic level);
- adherence counselling (role to be shared with clinics); and
- adherence follow-up (role to be shared with clinics).

Four clinics in each location (satellite clinics to the hospital) selected by local authorities at the district level carry out the following activities:

- pretest and post-test counselling;
- rapid testing and ELISA for diagnosing HIV status;
- screening for antiretroviral therapy eligibility;
- monthly prescription refills (by doctors);
- drug-specific counselling;
- ongoing check-ups every three months;
- adherence counselling;
- adherence follow-up including home visits;
- adherence evaluation and referral;
- referral to hospitals for initiating treatment and for managing complications or any other reason for referral that requires referral to a higher-level centre;
- community mobilization and information, education and communication;
- linkage and referral to social welfare and support structures in the communities; and
- follow-up for people living with HIV who do not meet treatment eligibility criteria at the time of initial evaluation.

The referral facilities currently have the most resources and infrastructure in place. With the increasing workload and when the local clinic capacity is built up, there will be more transfer and sharing of the roles described above to the local authority clinics.

The rest of the clinics other than the four selected satellite clinics do the following:

- carry out pretest and post-test counselling;
- test for diagnosis of HIV status;
- refer patients to any of the treatment clinics;
- carry out adherence follow-up;
- carry out adherence evaluation and referral;
- community mobilization and information, education and communication; and
- provide linkage and referral to social welfare and support structures in the communities.

ANNEX 7. BROADREACH HEALTHCARE/AID FOR AIDS (AFA)

ARVCare was developed through an international joint venture between BroadReach Healthcare and Aid for AIDS, South Africa – the largest HIV/AIDS disease management provider in Africa. This programme is based on a disease management system, operated by Aid for AIDS. This currently provides monitoring and evaluation and clinical decision support to a registered patient base of more than 30 000 people living with HIV and more than 4000 providers in seven African countries and manages the care of more than 16 000 people living with HIV receiving antiretroviral therapy. This makes ARVCare the largest antiretroviral therapy programme in Africa.

The true power of this unique and innovative model is its ability to push antiretroviral therapy care and treatment out of large tertiary hospitals in urban centres and enable treatment to be delivered in rural community-based settings – where most of the demand currently exists. BroadReach Healthcare firmly believes the community-based model of care is the only scaleable and sustainable strategy for meeting the existing demand for treatment. BroadReach Healthcare is working very closely with community-based adherence support structures – including local nongovernmental organizations, churches, support groups for people living with HIV and small businesses – to ensure that the community itself is supporting those enrolled in treatment through treatment literacy and education sessions, adherence peer counselling, home-based visits, patient uptake programmes and support group sessions.

This system was designed to allow one HIV and AIDS specialist doctor to oversee the clinical care and clinical management of thousands of patients by providing remote clinical training and decision-making support to a network of public sector or government doctors, public, government or private hospitals, community doctors, nurses, and community health care workers. It accomplishes this by overlaying an organized, information technology-centred, system on what is traditionally a decentralized network of caregivers and institutions. In this capacity, the ARVCare centre acts much like a mission control centre – linking doctors, employers, hospitals, clinics, laboratories, pharmacies and even nurses and community health care workers – into an organized treatment network.

How ARVCare enables non-specialist caregivers to manage people living with HIV

The ARVCare system is designed around the principle that 80% of managing the treatment of people living with HIV can be summarized in formulas and can be standardized into protocols that can be taught to and then subsequently implemented by a caregiver not specialized in HIV and AIDS. Under this principle, a systems approach must therefore be designed to:

1. ensure that each caregiver has adequate and consistent baseline training to provide the 80% of standardized, routine HIV and AIDS clinical care;
2. provide practical systems to support the caregiver's decision-making for the more difficult 20% of complex cases; and
3. monitor data at the caregiver level to ensure quality and to flag and initiate any needed training or quality interventions.

Solution components	Description
<p>1. Provide basic, rapid didactic training – the objective is to provide intense, efficient training that allows the caregiver to return into the community as rapidly as possible and begin seeing new patients</p>	<ul style="list-style-type: none"> • An intensive weekend workshop provides the caregiver with key information to begin treating patients. • Training continues with supplemental weekend workshops throughout the year to advance the caregiver's knowledge base. • Web-based and computer-based training modules are provided. • Caregivers are provided with ongoing newsletters with clinical updates.
<p>2. Provide systems of ongoing support – the objective is to provide real-time, case-by-case remote clinical decision support to extend the caregiver's knowledge in the field, and to continue the caregiver's training beyond the didactic sessions</p>	<ul style="list-style-type: none"> • ARVCare operates a toll-free call centre so that caregivers can call in with questions to the HIV and AIDS specialists while they are seeing patients in real time. • Case managers review all patient data (encounter forms and data from the laboratory and on drug pick-up), which are faxed, mailed or electronically sent into the ARVCare database. Case managers identify problematic situations and contact caregivers in the field directly. • Special computerized programs with expert decision-support rules assist case managers by mining the database to identify possible issues, and automatically flag cases for follow-up. • Leading clinicians conduct difficult case reviews on a weekly basis to provide advice to caregivers in the field on outlier patients.
<p>3. Provide comprehensive monitoring and evaluation – the objective is to provide continuous feedback on quality performance so that programmes can be improved</p>	<ul style="list-style-type: none"> • The caregivers make detailed outcome and clinical profiling reports to identify performance issues, quality trends and retraining needs • Operational, financial and clinical outcome reports at the clinic, hospital, district and province level assess overall performance and identify opportunities for improvement.

Provider training and clinical decision support

For doctors, nurses, community health care workers or other providers who are new to delivering HIV/AIDS care, antiretroviral therapy and other types of clinical care (such as TB or malaria), a remote case manager and specialist physician provide support to the caregiver via telephone or, for caregivers who have Internet access, by reviewing the patient's electronic medical record with the provider in real time and discussing the proper care and treatment of a particular patient. For a large antiretroviral therapy programme, this means that didactic, in-person training can be limited to a weekend training session, with extensive practical, case-by-case training support being delivered remotely through the ARVCare system. In addition, the ARVCare remote monitoring centre brings together an expert physician specialist panel on a weekly basis to provide difficult case consults for providers who have cases that are extremely complex. This approach has helped to address key bottlenecks and operational issues discussed previously by: (a) getting providers in the field trained very rapidly and allow them to begin seeing patients, (b) giving these providers practical training and clinical decision support and (c) extending the reach of a preceptor or faculty member to support the training needs of numerous providers at one time – providing for scalability.

Patient counselling and support

The ARVCare remote monitoring centre also staffs a patient call centre manned by trained case managers and patient counsellors. Typically, when a patient is enrolled in a programme supported by the ARVCare system, a patient counsellor places a telephone call to the patient to introduce themselves as a resource, to provide basic treatment education, to review the patient's prescribed drug regimen and treatment plan and to discuss and identify potential adherence issues. On an ongoing basis, patients may then call the patient call centre at any time to ask questions, discuss routine clinical issues with a nurse or get a referral to counselling or adherence support group structures.

ANNEX 8. DECENTRALIZATION OF THE SENEGALESE INITIATIVE FOR ACCESS TO ARV (ISAARV): THE SPONSORSHIP SYSTEM

Sponsorship, which is also known as mentorship, is a strategy developed by the Medical Technical Committee (MTC) in 2000 within the context of decentralization of the Senegalese Initiative for Access to ARV (ISAARV).

The MTC is a structure of ISAARV that is charged with developing clinical and biological eligibility criteria for the initiation of antiretroviral therapy. It holds regular meetings to review the progress made in the treatment and care of people living with HIV under treatment. Further, these meetings are used to discuss problems related to comprehensive care: loss to follow-up, side effects, resistance, condition of stocks of medication and reagents etc.

With time and with the growing number of patients under antiretroviral therapy coming from all regions of Senegal, the need for decentralization became obvious. Sponsorship is a strategy that allows for better management and close follow-up of ISAARV activities in the regions. The physician-sponsor is designated at the national level for a given region. The physician-coordinator of ISAARV is chosen at the level of the local pilot structure. In addition to these two responsible people, local ISAARV teams were established including various actors such as physicians, pharmacists, nurses, social assistants and laboratory technicians.

Theoretical training is planned at the level of each region. For each region this theoretical training of the local ISAARV team is followed by a practical internship in the Dakar region, including:

- diagnosis and treatment of opportunistic infections;
- antiretroviral therapy initiation and follow-up;
- antiretroviral drug distribution;
- nutritional support;
- psychosocial support;
- adherence support system; and
- data capturing and management.

In addition to this theoretical and practical training, each sponsor develops a supervision agenda based on four supervision visits per year. Each supervision lasts four weekdays and includes the following activities:

- patient and case reviews;
- follow-up to ordering drugs and reagents for antiretroviral therapy and opportunistic infections; and
- discussing and resolving problems identified since the last supervision visit.

Training has been conducted in all 11 regions of Senegal, and more than 2800 patients are receiving antiretroviral therapy.

ANNEX 9. INTERNATIONAL TRAINING & EDUCATION CENTER ON HIV (I-TECH) SKILLS CHECKLIST (PHYSICIAN)

Preceptee: _____ Preceptor: _____ Date: _____ Facility: _____

Please summarize the clinician's demonstrated knowledge and skills using the codes below:

X – not applicable

- 1 **None:** No demonstrated skills at all or does not perform the task(s) completely. Needs a lot of support.
 - 2 **Limited:** Trainee demonstrates very limited strengths or skills in this area and needs additional support.
 - 3 **Some:** Trainee demonstrates some ability or skills in this area.
 - 4 **Strong:** Trainee demonstrates excellent skills or strength in this area.
- A **Comprehensive assessment** – Skill was assessed completely; preceptor was able to observe fully.
 - B **Satisfactory assessment** – Assessment was satisfactory, although preceptee's skill may exceed that observed.
 - C **Partial assessment** – Observations and score based on incomplete information.
 - R **Resource limits** – Skill or care limitation clearly related to resource limits

Please use the "comments" column to note key observations to be discussed later with the clinician. In addition, this space should be used to record explanations for why recommended practices were not followed, to describe instances where the provider was particularly effective and/or to note particularly useful advice provided by the trainer to the preceptee.

Demonstrated knowledge and skills	Comments	Codes 1–4, A–C, R, X
Professional and interpersonal skills		
Patient centred (listens to patient's ideas and concerns)		
Timely (doesn't rush patient and doesn't take too much time)		
Treats patients with empathy, dignity and respect (including confidentiality: maintains low speaking voice)		
Documentation accurate and complete		

Demonstrated knowledge and skills	Comments	Codes 1–4, A–C, R, X
Assessment		
Conducts focused, thorough discussion of medical, social and family history and progress relevant to current complaint		
Uses team approach (shares information with nurse, efficient interaction and lack of duplication of effort)		
Conducts adequate physical examination (in relation to history and current complaint)		
Accuracy of assessment and diagnoses (including WHO staging)		
Patient management and care plan		
Antiretroviral therapy adherence, tolerance and side effects addressed		
Appropriateness of recommended drug treatment (antiretroviral therapy and opportunistic infections)		
Appropriate involvement of patient in development of a focused management plan		
Appropriateness of recommended laboratories		

Patient education on sexual and other risk behaviour (including secondary infection)		
Emotional and social support needs and possibilities discussed		
Develops appropriate follow-up schedule		

Recommendations to improve this provider's practice

Examples of information you shared that might improve this provider's practice (in other words, did anything occur during this training that suggests that it was valuable to improving provider practice?)

Follow-up education, support and preparation for ARV therapy

	Date/comments	Date/comments	Date/comments
Educate on basics, prevention, disclosure	Basic HIV education, transmission		
	Prevention: abstinence, safer sex, condoms		
	Prevention: household precautions, what is safe		
	Post-test counselling: implications of results		
	Positive living		
	Testing partners		
	Disclosure		
	To whom disclosed (list)		
	Family/living situation		
	Shared confidentiality		
	Reproductive choices, prevention MTCT		
	Child's blood test		
	Progression, Rx	Progression of disease	
Available treatment/prophylaxis			
Follow-up appointments, clinical team			
CTX, INH prophylaxis			
ART preparation.....initiation.....support, monitor....	ART -- educate on essentials (locally adapted)		
	Why complete adherence needed		
	Adherence preparation, indicate visits		
	Indicate when READY for ART: DATE/result Clinical team discussion		
	Explain dose, when to take		
	What can occur, how to manage side effects		
	What to do if one forgets dose		
	What to do when travelling		
	Adherence plan (schedule, aids, explain diary)		
	Treatment supporter preparation		
	Which doses, why missed		
	ARV support group		
	Home-based care, support	How to contact clinic	
Symptom management/palliative care at home			
Caregiver booklet			
Home-based care -- specify			
Support groups			
Community support			

ANNEX 11. INTEGRATED MANAGEMENT OF ADULT AND ADOLESCENT ILLNESS (IMAI) POST-TRAINING VISIT MATERIALS – SUGGESTIONS FOR CLINICAL TEAM MEETINGS

How to organize a clinical team meeting

The purpose of clinical team meetings is:

- To communicate, to efficiently share patient information and plans of care and to share responsibility for all aspects of care and outcomes.

Tips:

- Choose a day of the week and a precise time and do not change so the team meeting will become a fixed appointment for the clinical team at the health facility.
- Designate a clinical team meeting leader who should prepare the weekly patient list and agenda. This should not usually be the medical officer!
- Discuss only a subset of patients each week.
- Develop among the team a consistent way to provide only essential information regarding each patient.

Regular team meetings are an important tool for working together effectively.

When preparing for a health care team meeting:

- Have the right people attend.
- Ensure team members are prepared or have been given enough time to prepare.
- Ensure that the meeting room is adequate and comfortable.
- Do not overwhelm the agenda. Team meetings should not be longer than one hour. If there are too many cases, postpone some of them to the following week. If there are too many cases per week regularly, schedule two team meetings per week.
- Empower team members with communication and problem-solving skills.
- Remind the clinical team that, in the beginning, everybody will need to learn how to handle the meetings. Things will get faster after a few meetings.

Other tips to help achieve successful meetings include the following.

- Discuss only a few patients each week.
- Start and end on time.
- Determine how all team members will have a chance to speak openly.

Remind everybody about communication

Interaction and balance: The worst effect is when one or two people do all the talking. The best meetings include active participation by everyone – giving everyone an opportunity to contribute to the meeting's success.

Respect: It is important in any group work that individuals respect each other and each other's viewpoint. Respect often breaks down when individuals do not listen to each other.

Clarity: When communications are vague and oblique, individuals find it difficult to contribute to the quality of the conversation.

Relevance: It is important in any discussion that those communicating build on the conversation and not sidetrack it.

Remind everybody how important it is to build a learning organization.

Learning organizations share these characteristics:

- shared vision
- open communication
- team learning
- measurement of progress
- continuous adaptation and evolution.

The following are ways to create learning organizations in health care teams.

- **Work from a common vision.** Everyone on the health care team should understand and agree to the main goals and principles that underlie the work of the health care team.
- **Seek openness.** For a team to grow, its members must be willing to tell each other the truth. To make this openness possible, you must create safe environments for each member of the health care team to say what is on his or her mind and to share bad news without fear of retribution.
- **Promote team learning and flexibility.** Each step of the patient journey – and other clinical practices – should be examined to evaluate whether it is still needed or how it can be improved. Encourage others to view their practices with flexibility and innovation.
- **Encourage experimentation.** Small-scale experiments provide a chance to try out new ideas without the risk involved in major change.
- **Measure progress.** If you are trying a small-scale experiment, decide a simple way to monitor your progress and to be able to determine whether the change is an improvement.
- **Learn from surprises and failures.** Use unexpected results to re-examine assumptions and expectations. View these opportunities as a way to learn something new and apply it.
- **Acquire the best practices of others.** Identify and adopt the best practices of successful teams. This can be a useful source of innovation. However, be flexible enough to modify or evaluate the relevance of these practices for your particular setting. Do not simply be an imitator but improve and invent new approaches from the best practices of others.

Who does what

Clinical team leaders

- Prepare a reasonable agenda (see example below)
- Ensure that there are not too many cases for the meeting
- Ensure that team members come prepared with relevant information about the cases to discuss
- If possible, photocopy the material for the team members

Clinical officers and nurses

- Decide which are the most urgent cases to discuss
- Review the files of the patients to be discussed
- Prepare a summary with only the relevant information (see example below), allowing the team to decide the appropriateness of medical eligibility to antiretroviral therapy and whether the patient is ready to start
- Explain the cases to the rest of the team
- Use this opportunity to clarify doubts and clinical questions with the rest of the team but prepare a very concise and precise list (see example below)

ART Aids

- Consult with clinical officers and nurses on the cases to discuss
- Prepare a summary with only the relevant information to the discussion (see example below)
- Explain the cases to the rest of the team
- Use the opportunity to clarify questions with the rest of the team but prepare a very concise and precise list (see example below)

Medical officer

- Ask only relevant information about the case
- Review patient files only if necessary
- Explain the clinical background of the possible decision
- Involve each team member
- Respond patiently to each team member's questions
- Have time available at the end of the meeting for additional questions or doubts from the rest of the team (especially if the medical officer is not posted at the facility)

Reporting ART Aids

Masaka team meeting – 22 April 2006

Wednesday, 1600

Venue: Library

Participants requested to attend: all members of the clinical team

	Cases	Reporting clinical officer or nurse	Reporting antiretroviral therapy aide	Decision of the team (to be filled out at the end of the meeting)	Comments
1600–1610	Mary Olukoto	John	Beth		
1610–1620	Lydia Sureti	Mary	Beth		
1620–1630	Oliver Turi	Sarah	Beth		
1630–1640	Mike Tituri	John	Beth		
1640–1650	Ann Smith	Mary	Beth		

1650–1710 – Discussion and clarification of clinical issues

1710–1730 – Discussion and clarification of issues related to antiretroviral therapy aides

1730 – Meeting ends



Photograph: Gideon Mendel/The International HIV/AIDS Alliance/Corbis

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