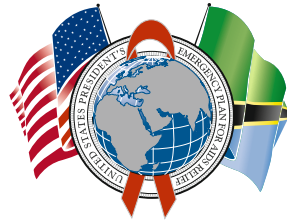# Core Competencies for Medical Officers for Comprehensive HIV/AIDS Services in Tanzania

Core Competencies for Medical Officers for Comprehensive HIV/AIDS Services in Tanzania

September 2009

TABLE OF CONTENTS

FOREWORD

It is my honor to introduce this document, which serves as evidence of another important milestone for medical education in Tanzania.

In Tanzania, as it is in other Sub-Saharan African countries, the HIV/AIDS burden is a heavy one. Moreover, resources with which to care for those infected with the virus are often insufficient. Health care providers, particularly medical doctors, in this part of the world need to be competent in order to provide the best care possible with the available resources. To this end, health care providers need to have the knowledge, attitudes and skills regarding HIV/AIDS management.

This document outlines the desired competencies of each facet of HIV/AIDS management. The content should feature in the curriculum of each medical university, and it is expected that at the end of training, students will have attained all of the competencies outlined. This standardization of curriculum will serve to ensure that, regardless of which university a student graduates from, all will have a similar level of knowledge and training on HIV/AIDS.

It is my sincere hope that medical trainers will find this document useful in strengthening HIV/AIDS training in their respective universities. The institutions may also benefit from using this document when doing curriculum review. Comments on how the document could be improved are most welcome.

Dr. Gilbert Mliga
Director Human Resource Development
Ministry of Health and Social Welfare

Core Competencies for Medical Officers for Comprehensive HIV/AIDS Services In Tanzania
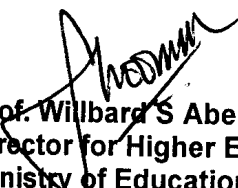
ACKNOWLEDGMENTS

Faced with a serious human resources for health shortage, the Government of Tanzania is striving to increase the number of health care providers throughout the country. We now have five medical universities graduating close to 400 medical doctors annually. A sixth university will start medical training soon. This should not be taken for granted; it is a result of good policy and governance for which much appreciation is owed.

While all of these efforts are under way, not much attention has been paid to standardize the quality of the medical education provided to medical students. Currently the Medical Universities of Tanzania have undertaken this important initiative and are looking at ways of improving the quality of medical education in the area of HIV/AIDS. The following guide is a product of intensive work, wide consultation and collaboration amongst these Medical Institutions. It is hoped that this work will directly benefit health care providers as well as promote the well-being of Tanzanian communities.

I would like to take this opportunity to thank the Jhpiego Tanzania office for their support and interest in this topic. This document could not have been produced had it not been for their technical guidance and coordination. Many thanks to the Deans of medical faculties from all five Universities, who allowed faculty representatives from their Universities to be intimately involved in the activity. These faculty members were instrumental in developing the core competencies and their hard work is commendable. Their names, along with the others who contributed to the development of this guide, are listed on the following page.

May I also thank the United States Agency for International Development (USAID), through the ACCESS Program, for the financial support accorded to this activity. Their support is very much appreciated.

Lastly I would like to wish well all those who will use this guide to offer quality services to clients and if possible give comments on how to improve this guide.

Prof. Willbard S Abeli
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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Treatment
ARV	Antiretroviral
BCC	Behavior change communication
HBC	Home-based care
HIV	Human Immunodeficiency Virus
HKMU	Hubert Kairuki Memorial University
HMIS	Health management information system
IEC	Information, education and communication
IMTU	International Medical and Technological University
IRIS	Immune Reconstitution Inflammatory Syndrome
KCM College	Kilimanjaro Christian Medical College
M&E	Monitoring and evaluation
MOEVT	Ministry of Education and Vocational Training
MOHSW	Ministry of Health and Social Welfare
MTCT	Mother-to-child transmission
MUCHS	Muhimbili University College of Health Sciences
MUHAS	Muhimbili University of Health and Allied Sciences
NACP	National AIDS Control Program
NMSF	National Multi-Sectoral Framework
PEPFAR	President's Emergency Plan for AIDS Relief
PLWHA	People living with HIV/AIDS
PMTCT	Prevention of mother-to-child transmission
SBM-R	Standards-based management and recognition
SSA	Sub-Saharan Africa
STI	Sexually transmitted infection
TACAIDS	Tanzania Commission for AIDS
TB	Tuberculosis
USAID	United States Agency for International Development
WBUCHS	Weill Bugando University College of Health and Allied Sciences
WHO	World Health Organization

EXECUTIVE SUMMARY

Tanzania has been severely affected by the HIV epidemic, with an estimated 6% of the population infected. Although treatment and prevention efforts have stemmed the spread of HIV, there remain over 2.3 million Tanzanians infected.[1]

One of the main challenges to the HIV/AIDS response in Tanzania is the shortage of health care workers. It is estimated that Tanzania has a 68% deficit of health workers,[2] meaning that the current workforce must nearly double, with a tenfold increase in physicians, in order to adequately address health needs in the country.

The HIV/AIDS epidemic has necessitated the inclusion of a pre-service curriculum for medical students focused specifically on caring for those infected with the virus as well as on counseling patients on how to protect themselves and others. In order to streamline and standardize this curriculum, the Government of Tanzania is working closely with Jhpiego—an affiliate of Johns Hopkins University—through support from the United States Agency for International Development(USAID)/President's Emergency Plan for AIDS Relief (PEPFAR), to ensure that all medical students are prepared to respond appropriately to the epidemic. Project activities will include an assessment of training needs in the country's five medical universities, provision of teaching equipment, development of core competencies, capacity building of staff, development of materials and standards, integration of updated content into the curriculum, quality improvement of overall education and strengthening of clinical practice sites.

As the final product of a two-day workshop, core competencies for HIV/AIDS in pre-service medical training were drafted in collaboration with faculty from all five medical universities. The core competencies were developed in direct response to the results of a needs assessment carried out in the medical universities that sought to identify the strengths and weaknesses of the existing curriculum and teaching methodology in relation to HIV/AIDS.

Core competencies are defined as essential knowledge, understanding, skills and attitudes for providing comprehensive HIV/AIDS services that follow current national policies and guidelines. These are the domains that enable a graduating health care provider to be fit for his/her position's intended purpose. Unless one has all the necessary competencies, s/he will not be able to deliver quality health care. The core competencies help focus the learning objectives around the knowledge, skills and attitudes a student must possess in order to achieve the desired capacity in HIV/AIDS service delivery. The goal of developing core competencies is not only to facilitate standardization of training, but also to promote clarity, streamline monitoring and quality assurance, and improve the overall quality of HIV/AIDS education. The five areas of core competencies are as follows:

1. **Scientific Foundation (Basic Science) and Clinical Care of HIV/AIDS:** Provide comprehensive HIV/AIDS prevention, care and treatment services using the chronic care model and evidence-based medicine.

2. **Communication Skills and Psychosocial Aspects of HIV/AIDS Care:** Effectively communicate with individual clients, couples, families and the community at large while providing HIV/AIDS clinical care, information, education and communication/behavior

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[1] *Tanzania HIV/AIDS and Malaria Indicator Survey (THMIS) 2007–08.* At: http://www.measuredhs.com/pubs/pub_details.cfm?ID=884&ctry_id=39&SrchTp=ctry
[2] MOHSW. 2007. Primary Health Services Development Programme 2007–2017.

change communication and counseling—taking into account the physical, psychological, social and cultural context, clients' rights and ethical principles.

3. **Management of HIV/AIDS Programs and Community Interventions:** Plan, organize, coordinate and manage implementation of priority community and clinical HIV/AIDS services and programs or projects in line with national policies, guidelines and regulations.

4. **Monitoring, Evaluation and Operational Research:** Collect, compile, analyze, interpret, communicate and use HIV/AIDS-related data for clinical and community programs in line with the national monitoring and evaluation framework, and conduct clinical and community-based HIV/AIDS research.

5. **Professionalism and Ethics:** Be able to be a lifelong learner, work in a multidisciplinary team and apply the professional code of conduct that includes ethical and legal principles.

DEFINITION OF TERMS

Analysis: The examination and evaluation of relevant information in order to select the best course of action from among various alternatives. In public health, this requires the integration of information from a variety of sources.

Assessment: A formal method of evaluating a system or a process, often with both qualitative and quantitative components.

Attitude: A relatively stable belief or feeling about a concept, person or object. Attitudes can often be inferred by observing behaviors. *See also: Values.*

CD4 (Cluster of Differentiation 4): T-lymphocyte cells in the immune system, a specific type of white blood cell that is the immune system's key infection fighter. HIV infects and kills CD4 T-cells.

Communication skills: These are the skills required by public health professionals to transmit and receive ideas and information to and from involved individuals and groups. Communication skills include the ability to listen, and to speak and write in plain language, and are often reinforced with visual images.

Core competencies: Core competencies are the essential knowledge, skills and attitudes necessary for the practice of a particular discipline. They transcend the boundaries of specific disciplines and are independent of program and topic.

Culturally-relevant (and appropriate): Recognizing, understanding and applying attitudes and practices that are sensitive to and appropriate for people with diverse cultural, socioeconomic and educational backgrounds, and persons of all ages, genders, health status, sexual orientations and abilities.

Data: A set of facts; one source of information.

Ethics: The branch of philosophy dealing with distinctions between right and wrong, and with the moral consequences of human actions. Much of modern ethical thinking is based on the concepts of human rights, individual freedom and autonomy, and on doing good and not harming. The concept of equity, or equal consideration for every individual, is paramount. In public health, the community's need for protection from risks to health may take precedence over individual human rights, for instance when persons with a contagious disease are isolated and their contacts may be subject to quarantine. Finding a balance between the public health requirement for access to information and the individual's right to privacy and to confidentiality of personal information may also be a source of tension.

Equity/equitable: Equity means fairness. Equity in health means that people's needs guide the distribution of opportunities for well-being. Equity in health is not the same as equality in health status. Inequalities in health status between individuals and populations are inevitable consequences of genetic differences and various social and economic conditions, or a result of personal lifestyle choices. Inequities occur as a consequence of differences in opportunity, which

result, for example, in unequal access to health services, nutritious food or adequate housing. In such cases, inequalities in health status arise as a consequence of inequities in opportunities in life.

Evaluation: Efforts aimed at determining as systematically and objectively as possible the effectiveness and impact of health-related (and other) activities in relation to objectives, taking into account the resources that have been used.

Evidence: Information such as analyzed data, published research findings, results of evaluations, prior experience and expert opinions, any or all of which may be used to reach conclusions on which decisions are based.

Health planning: A set of practices and procedures that are intended to enhance the efficiency and effectiveness of health services and to improve health outcomes. This important activity of all health departments commonly includes short-term, medium-term and long-range planning. Important considerations are resource allocation, priority setting, distribution of staff and physical facilities, planning for emergencies and ways to cope with extremes of demand and unforeseen contingencies, and preparation of budgets for future fiscal periods with a feasible time horizon, often five years ahead and sometimes as far ahead as 10 or even 15 years.

Health policy: A course or principle of action adopted or proposed by a government, political party, organization or individual; the written or unwritten aims, objectives, targets, strategy, tactics and plans that guide the actions of a government or an organization. Policies have three interconnected and ideally continually evolving stages: development, implementation and evaluation. Policy development is the creative process of identifying and establishing a policy to meet a particular need or situation. Policy implementation consists of the actions taken to set up or modify a policy, and evaluation is the assessment of how, and how well, the policy works in practice. Health policy is often enacted through legislation or other forms of rule-making, which define regulations and incentives that enable the provision of and access to health and social services.

Health program: A description or plan of action for an event or sequence of actions or events over a period that may be short or prolonged. More formally, an outline of the way a system or service will function, with specifics such as roles and responsibilities, expected expenditures, outcomes, etc. A health program is generally long-term and often multifaceted, whereas a health project is a short-term and usually narrowly focused activity.

Surveillance: Systematic, ongoing collection, collation and analysis of health-related information that is communicated in a timely manner, to all who need to know which health problems require action in their community. Surveillance is a central feature of epidemiological practice, where it is used to control disease. Information that is used for surveillance comes from many sources, including reported cases of communicable diseases, hospital admissions, laboratory reports, cancer registries, population surveys, reports of absence from school or work, and reported causes of death.

Values: The beliefs, traditions and social customs held dear and honored by individuals and collective society. Moral values are deeply believed, change little over time and are often grounded in religious faith. They include beliefs about the sanctity of life, the role of families in society and protection from harm of infants, children and other vulnerable people. Social values are more flexible and may change as individuals undergo experience. These may include beliefs

about the status and roles of women in society and attitudes toward use of alcohol, tobacco and other substances. Values can affect behavior and health either beneficially or harmfully.

BACKGROUND

HIV/AIDS in Tanzania

The first case of HIV in Tanzania was diagnosed in 1983. Prevalence peaked at 8% in 1995[3] but has since fallen to 6%. Women represent the majority of HIV cases in Tanzania, with 6.8% infected, in comparison to only 4.7% of men. The urban population, in which the epidemic is older, is disproportionately affected by the epidemic, with prevalence twice that of the rural population (10.6% versus 5.3%). Geographic variations in prevalence are extremely large in Tanzania. The prevalence of HIV in the Kigoma region, for example, is only 2%, while that of the Iringa region is 16%.[4]

The Government of Tanzania's Response to the HIV/AIDS Epidemic

The Tanzanian national response to HIV/AIDS started in 1985 with the Ministry of Health and Social Welfare's (MOHSW) National AIDS Control Program (NACP), supported by the World Health Organization (WHO) and the Global Program for AIDS. Following various reviews of the program's structure, it was recommended that a national coordinating body oversee the multi-sectoral response. It was in light of this recommendation that the President of the United Republic of Tanzania formally established the Tanzania Commission for AIDS (TACAIDS). TACAIDS is responsible for coordinating the National Multi-Sectoral Strategic Framework (NMSF) to mitigate the effects of HIV/AIDS in the country. The NMSF guides the approaches, interventions and activities that will be undertaken by all stakeholders in the country.

Challenges to Addressing the HIV/AIDS Epidemic in Tanzania

Like other countries in Sub-Saharan Africa, Tanzania faces an acute shortage of health care providers, including medical officers, assistant medical officers, clinical officers, clinical assistants, nurses and nurse-midwives, as well as laboratory and pharmacy staff. Many doctors prefer to work in the private sector, starting their own private clinics or opting to work in private hospitals, some of which are operated by nongovernmental organizations. Health care workers also frequently migrate both within the region and overseas. Moreover, medical staff frequently choose to work in urban areas, leaving rural populations at a deficit.

In 2005's Joint Annual Health Sector Review, the MOHSW proclaimed that the health worker shortage in Tanzania had reached crisis level. One report[5] noted that there was a shortage of 19,000 health care workers—a full 68% of the total health workforce[6]—and this estimate did not account for the increased workload resulting from scale-up of HIV/AIDS services. Tanzania has one of the world's lowest health worker densities, with only 3.9 health workers per 10,000 overall and just 0.4 doctors per 10,000 population. It is estimated that more than 4,000 physicians are needed in-country, while in reality there are a mere 1,339.[7]

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[3] Somi GR et al. 2006. Estimating and projecting HIV prevalence and AIDS deaths in Tanzania using antenatal surveillance data. *BMC Public Health* 6(120).
[4] *Tanzania HIV/AIDS and Malaria Indicator Survey (THMIS) 2007–08.* At:
http://www.measuredhs.com/pubs/pub_details.cfm?ID=884&ctry_id=39&SrchTp=ctry
[5] Maestad O. 2006. *Human Resource for Health in Tanzania: Challenges, Policy Options and Knowledge Gaps.* Chr Mechelsen Institute, Norway.
[6] MOHSW, 2007. Primary Health Services Development Programme 2007–2017.
[7] WHO and MOHSW, 2007. Tanzania Service Availability Mapping 2005–2006.

Pre-Service Medical Education in Tanzania

Part of the government's efforts to increase the number of health workers includes increasing the capacity of training institutions. Before 1997 there was only one medical university. Currently, there are five medical universities in Tanzania. They are:

1. Muhimbili University of Health and Allied Sciences (MUHAS)

2. Hubert Kairuki Memorial University (HKMU)

3. International Medical and Technological University (IMTU)

4. Kilimanjaro Christian Medical College (KCM College)

5. Weill Bugando University College of Health and Allied Sciences (WBUCHS)

The first three institutions are located in Dar es Salaam, KCM College is situated in Moshi and WBUCHS is in Mwanza. MUHAS is the oldest of the five, and the only public medical training institution in the country. Established in 2007, it is a successor to the Muhimbili University College of Health Sciences (MUCHS), which was established in 1963. Close to 200 medical doctors graduate from MUHAS per year, and the number of graduates has been increasing significantly over the last 10 years. WBUCHS was established in 1994, but only inducted its first class of medical students in 2003. WBUCHS graduates approximately 25 doctors annually. The other three universities were all established in 1997, and collectively graduate about 175 doctors each year.

The advent of the HIV/AIDS pandemic and its devastating effects inevitably influenced medical education in Tanzania. A new HIV/AIDS curriculum, including the basic science of the virus, antiretroviral (ARV) use, and management and recognition of co-infections, had to be incorporated with the existing coursework. Other less clinical topics, such as counseling and ethical issues specific to managing those infected with the virus, were also included.

In order to improve and strengthen the quality of HIV/AIDS pre-service medical education in Tanzania, USAID/PEPFAR has funded Jhpiego, through the ACCESS program, to work together with the Government of Tanzania to accomplish this goal. Working in close collaboration with the MOHSW and the Ministry of Education and Vocational Training (MOEVT), Jhpiego is undertaking activities aimed at improving the quality of medical education relating to HIV/AIDS. These activities include:

- Assessing the technical and training needs of the five universities
- Providing teaching equipment (laptops and LCD projectors) and demonstration equipment for skills labs (anatomical models, reference manuals, medical equipment, etc.) to each university
- Developing HIV/AIDS core competencies based on the medical officer job description and the *Tanzania National Guidelines for the Management of HIV/AIDS*
- Integrating HIV/AIDS core competencies with the curriculum
- Building capacity among staff, updating staff knowledge of HIV and strengthening teaching capability
- Developing learning package materials for both instructors and students and improving e-learning capacity
- Developing standards that will be used in conducting regular assessments of the quality of the medical education, and making the necessary adjustments to reach the standards required

- Supporting the development and improvement of clinical sites where students complete practical requirements

The first two activities have already been completed, and the findings of the needs assessment will be distributed to each university.

The needs assessment found that each university uses a different curriculum and that standardizing the curriculum would be appropriate to reflect that the needs of those affected by HIV/AIDS in Tanzania are universal. As a result, a set of core competencies was developed to streamline the curriculum.

Jhpiego organized a two-day workshop in Morogoro on HIV/AIDS that was attended by three faculty members from each of the five universities. The outcome of the workshop was the drafting of the HIV/AIDS core competencies for medical students in Tanzania.

The audience for this document is MOHSW, MOEVT, faculty of medicine of the five medical universities, the Tanzania Commission for Universities and other stakeholders.

CORE COMPETENCIES-BASED APPROACH TO TEACHING HIV/AIDS CONTENT

Competencies are defined as what a successful learner should know and be able to do upon completion of a particular program or course of study. In the context of HIV/AIDS, core competencies are defined as essential knowledge, understanding, skills and attitudes for providing comprehensive HIV/AIDS services that follow current national policies and guidelines. The core competencies help focus the learning objectives around the knowledge, skills and attitudes a student must possess in order to achieve the desired capacity in HIV/AIDS service delivery. They also help to more clearly communicate expectations and can improve student performance.

Defining core competencies serves several important purposes:

- **Core competencies promote clarity in identifying tasks and roles.** For example, for many, antiretroviral therapy (ART) represents the introduction of a significantly new intervention in the health facilities, requiring technical knowledge and skills in providing care to clients with HIV/AIDS who will need lifelong therapy.
- **Core competencies are foundations for the development of standardized training programs.** The core competency list provides a template for devising content and methods for teaching. To scale up training quickly, training institutions must target their activities on the core tasks required to be performed in the learners' practice settings.
- **Core competencies are relevant to training objectives, provider assessments and ongoing supervision and monitoring issues.** The competencies, listed as tasks, help training institutions and others involved in certification to clearly specify the desired outcome of the training and assessment.
- **Core competencies should guide quality assurance activities.** The core competency list provides guidance to determine whether or not training materials address the most essential training needs. The competency list will also provide guidance in certifying health workers by delineating the fundamental tasks required to be performed by a competent worker.

The HIV/AIDS core competencies for medical officers have been developed around the chronic HIV/AIDS care model that Tanzania has approved and implemented. The chronic care model[8] is a partnership between communities and the health system with the goal of ensuring the following:

- Self-management support: Emphasizing patient role, assessment, problem solving and interventions to enhance self-management
- Delivery system design: Defining care team, planning visits, follow-up reminders, continuity of care and referral system
- Decision support: Use of clinical guidelines, provider education and specialty support
- Clinical information system: Establishment and maintenance of patient registry, use of registry for patient follow-up and quality improvement

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[8] Bartlett JG et al. 2006. *A Guide to Primary Care of People with HIV/AIDS.* U.S. Department of Health and Human Services, Health Resources and Services Administration, HIV/AIDS Bureau; MOHSW. 2007. *Integrated Management of Adolescent and Adult Illness: Guidelines for Health Care Workers in Dispensaries, Health Centres and District Outpatient Clinics in Tanzania.*

CORE COMPETENCIES FOR HIV/AIDS

1. Scientific Foundation (Basic Science) and Clinical Care of HIV/AIDS

Desired competency: Provide comprehensive HIV/AIDS prevention, care and treatment services using the chronic care model and evidence-based medicine.

In order to achieve this competency, the graduates are expected to have:

Knowledge

- The history of HIV, virology of HIV, pathogenesis, and pathophysiologic and immunologic changes that occur with HIV infection and the natural course of the disease
- Global and national epidemiology of HIV/AIDS and factors that determine risk of infection
- Modes of HIV transmission and basic interventions to prevent HIV/AIDS in the community
- Clinical manifestation of HIV/AIDS in children: signs and symptoms associated with HIV/AIDS and the list of diagnostic investigations needed
- Clinical manifestation of HIV/AIDS in adults and adolescents: signs and symptoms associated with HIV/AIDS and the list of diagnostic investigations needed
- WHO criteria for the diagnosis of HIV and clinical staging in children
- WHO criteria for the diagnosis of HIV and clinical staging in adults and adolescents
- Mental health problems related to HIV/AIDS: signs and symptoms and principles of managing HIV/AIDS-related psychiatric illnesses
- Signs and symptoms of opportunistic infections (OIs), laboratory investigations and management
- Principles of individual and couple pre- and post-test HIV counseling
- HIV testing:
    - Types of HIV testing available both nationally and internationally
    - The mechanism of action of each test
    - Steps in performing different types of tests
    - National HIV testing protocol for adults, pregnant women and children using the different tests
    - Use of dry blood spot for performing various HIV tests
    - Laboratory tests for diagnosis of OIs in HIV-positive patients (tests required to diagnose OIs and steps in performing the tests, including interpretation of test results)
- Adult and pediatric AIDS case definition for surveillance and clinical staging
- Basic pharmacology of first- and second-line ARV drugs:
    - Mechanism of action
    - Efficacy
    - Drug interaction
    - Side effects
    - Toxicity, indications and contraindications

- Basic principles of initiation of ART for adults, adolescents, children and pregnant women:
  - First- and second-line drug regimens
  - Criteria to initiate first-line ARV drugs
- Basic principles of follow-up of patients on ART:
  - Assessment of adherence and treatment response (using clinical, CD4 and viral load)
  - Determinants of adherence to treatment
  - Role of the health care team in adherence and strategies to promote adherence
  - Identification and management of OIs
  - Recognition of immune reconstitution inflammatory syndrome (IRIS) and other adverse reactions
- Principles of home-based care (HBC) and how it fits into the chronic care model of Tanzania:
  - Components of HBC
  - How HBC helps ART adherence
  - The role of the medical officer in HBC
- Principles of palliative care among HIV/AIDS patients
- Principles of infection prevention in the health care setting:
  - The disease transmission cycle
  - Isolation precautions
  - Standard precautions
  - Instrument processing
  - Waste management
  - Prevention and management of occupational exposure to blood and body fluids
  - The medical officer's role in implementation of infection prevention practices in the health care facility
- Mother-to-child transmission of HIV:
  - Routes of transmission
  - Risk factors
  - Primary prevention
  - Prevention of unintended pregnancies
  - Focused antenatal care
  - ARV prophylaxis
  - Safe delivery
  - Infant feeding
  - Linkage to other reproductive health and psychosocial services
- Basic principles and/or facts about etiology, signs and symptoms, laboratory and other investigation procedures of other sexually transmitted infections (STIs), and the principles of the syndromic approach for diagnosis and management of STIs
- Nutrition for HIV/AIDS patients

Skills

- Take an appropriate HIV/AIDS-related history and perform physical examination
- Diagnose and stage HIV/AIDS in children using WHO/Tanzania national guidelines
- Diagnose and stage HIV/AIDS in adults and adolescents using WHO/Tanzania national guidelines
- Perform or order and analyze/interpret basic laboratory and other diagnostic investigations for OIs
- Screen and identify patients and initiate first-line ARV drug regimen for adults, adolescents, children and pregnant mothers according to national guidelines
- Provide follow-up care for patients on first-line ARV drug regimen:
    - Determine patients' response for treatment (using clinical, CD4 count and viral load)
    - Manage adverse drug reactions including IRIS
- Diagnose, manage and/or provide prophylaxis for OIs for adults and children with HIV/AIDS
- Identify patients on ART with treatment failure and initiate second-line ARV regimen based on the national guidelines and provide follow-up
- Counsel and offer HIV testing for patients presenting with TB, STIs and other OIs
- Screen, diagnose and treat/refer AIDS-related neoplasms like Kaposi's sarcoma, lymphomas and cervical cancer
- Provide palliative care for AIDS patients
- Provide comprehensive prevention of mother-to-child-transmission of HIV (PMTCT) services; provide information and education on:
    - Family planning/safe sex and family planning services
    - HIV counseling and testing
    - Focused antenatal care
    - Safe delivery
    - Short-course antiretroviral prophylaxis for the mother and infant
    - Infant feeding options
    - Referral linkages
- Demonstrate infection prevention principles in the clinical setting:
    - Appropriate handwashing
    - Use of personal protective devices
    - Decontamination and disinfection of contaminated objects
    - Proper handling and disposal of samples, sharps and infectious wastes
- Provide post-exposure ARV prophylaxis for occupational and non-occupational exposure, e.g., rape
- Diagnose and manage other STIs

Attitude

- Demonstrate empathy and respect clients' rights while providing HIV/AIDS prevention, care and treatment services
- Protect clients' safety and confidentiality while providing HIV/AIDS prevention, care and treatment services
- Demonstrate sensitivity to socio-cultural and personal values of clients while providing clinical HIV/AIDS prevention, care and treatment services

- Demonstrate the ability to initiate clinical interventions based on clients' informed consent and decisions

2. Communication Skills and Psychosocial Aspects of HIV/AIDS Care

Desired competency: Effectively communicate with individual clients, couples, families and the community at large while providing HIV/AIDS clinical care, information, education and communication (IEC)/behavior change communication (BCC) and counseling—taking into account the physical, psychological, social and cultural context, clients' rights and ethical principles.

In order to achieve this competency, the graduates are expected to have:

Knowledge
- Provision of HIV/AIDS counseling and testing
- ART adherence counseling
- Principles of developing health education and promotion materials for HIV/AIDS prevention, care and treatment
- The role of psychological, socio-cultural, economic and spiritual values and beliefs, and environmental influences on the behaviors of individuals in relation to gender, age and practices of communities
- Factors that influence individuals' and communities' practices that are relevant for HIV/AIDS
- Beneficial and harmful traditional practices of communities that affect HIV/AIDS prevention and care
- BCC theories and models that are relevant for HIV/AIDS
- Principles of effective communication and IEC/BCC
- Strategies/approaches used in HIV counseling and testing services in Tanzania (voluntary counseling and testing, provider-initiated testing and counseling, opt-in, opt-out, etc.)
- Communication channels that are appropriate for clinical and community settings and different target groups
- The role of youth, People Living with HIV/AIDS (PLWHA), community leaders, spiritual groups and others in IEC/BCC related to HIV/AIDS
- Principles of group education on HIV/AIDS
- Clients' rights

Skills
- Apply effective communication skills to enable clients to express their health concerns and make informed decisions about their clinical care
- Apply effective communication skills while providing HIV/AIDS clinical care and IEC/BCC for individual clients, couples, families and communities in clinical and community settings
- Provide counseling on HIV testing, adherence to treatment and infant feeding options according to the national guidelines
- Apply health education and BCC theories and models in the design and implementation of IEC/BCC related to HIV/AIDS
- Design IEC/BCC messages and materials for clinical and community settings
- Select communication media for various target groups and settings

- Create a conducive environment for HIV IEC/BCC and counseling of individuals and couples
- Apply clients rights in counseling

Attitude
- Demonstrate sensitivity for local socio-cultural context, and clients' and communities' values while providing IEC/BCC and counseling for HIV/AIDS
- Demonstrate respect for clients' rights while educating and counseling individuals and couples

3. Management of HIV/AIDS Programs and Community Interventions

Desired competency: Plan, organize, coordinate and manage implementation of priority community and clinical HIV/AIDS services and programs or projects in line with national policies, guidelines and regulations.

To achieve this competency, students are expected to have:

Knowledge
- National epidemiology of HIV/AIDS and its socio-economic and demographic effect on individuals, families and communities
- Behavioral, socio-economic, cultural, gender-related, demographic and other determinants of HIV infection
- Essential clinical and community-based HIV/AIDS prevention, care and treatment strategies
- Basic principles of planning, organizing and coordinating HIV/AIDS services and programs or projects
- Basic principles of policy formulation and revision
- National HIV/AIDS prevention, care and treatment policy, strategies and organizational framework
- Principles of equity and equality in the access of HIV/AIDS services
- Gender mainstreaming and gender equity in planning and implementation of services
- Principles of integrated and comprehensive HIV/AIDS services as well as networking and referral linkage (TB/HIV, STIs/HIV, HIV/family planning collaboration)
- Basic principles of human and financial resources management
- Basic principles of ARV and other supplies management
- Community participation, partnership and intersectoral collaboration in HIV/AIDS prevention and control programs
- Principles of facilitative and supportive supervision in HIV/AIDS services and programs

Skills
- Demonstrate basic skills to plan, organize, coordinate and manage implementation of clinical and community HIV/AIDS services and projects based on local epidemiologic data and national policies and guidelines
- Demonstrate the ability to organize and mobilize community (PLWHA, women and youths) for HIV/AIDS prevention, care and treatment
- Demonstrate basic skills on how to mobilize and manage human and financial resources effectively
- Demonstrate the ability to follow up/understand the formulation and review of policy and strategies
- Demonstrate the ability to use principles of equity, intersectoral collaboration, partnership and networking in the design and management of HIV/AIDS prevention, care and treatment interventions
- Identify community-based HIV/AIDS care and support groups and link patients with them
- Demonstrate basic skills in managing procurement, storage and utilization of ARV drugs and other supplies
- Provide supportive and facilitative supervision

Attitude
- Demonstrate the ability to apply ethical principles in implementing HIV/AIDS interventions
- Demonstrate respect and sensitivity for community's socio-cultural values and norms while implementing public health interventions
- Demonstrate ability to work in partnerships with multidisciplinary team while implementing public health interventions

4. Monitoring, Evaluation and Operational Research

Desired competency: Collect, compile, analyze, interpret, communicate and use HIV/AIDS-related data for clinical and community programs in line with the national monitoring and evaluation (M&E) framework; and conduct clinical and community-based HIV/AIDS research.

To achieve this competency, students are expected to have:

Knowledge
- Principles of M&E of clinical and community HIV/AIDS programs
- Principles and methods of undertaking operational research on HIV/AIDS
- Principles of record-keeping, establishing and maintaining records system and database for HIV/AIDS-related data
- National Health Management Information System (HMIS) and HIV/AIDS M&E framework (organizational structure, information flow, HIV/AIDS indicators and formats/tools)
- Program-related communication and reporting to and from facilities and districts and other relevant authorities, e.g., development partners

Skills
- Demonstrate the basic ability to monitor and evaluate clinical and community HIV/AIDS programs
- Demonstrate proper recording, record-keeping and utilization of health information for program management
- Demonstrate the ability to collect, organize, communicate and utilize clinical and community data related to HIV/AIDS programs according to the national M&E framework
- Conduct clinical and community-based HIV/AIDS operational research

Attitude
- Demonstrate the ability to apply ethical principles in undertaking HIV/AIDS research
- Demonstrate respect and sensitivity for community socio-cultural values and norms while undertaking HIV/AIDS research

5. Professionalism and Ethics

Desired competency: Be able to be a lifelong learner, work in a multidisciplinary team and apply the professional code of conduct that includes ethical and legal principles.

To achieve this competency, students are expected to have:

Knowledge
- Professional code of conduct for doctors that includes ethical and legal principles
- Principles of team work
- The scope of HIV/AIDS care practice, the regulatory framework and standards of HIV/AIDS care practice

Skills
- Apply the principles of the code of conduct in all areas of professional practice
- Work effectively with a multidisciplinary team
- Apply ethical principles in all areas of professional practice
- Utilize all professional development opportunities
- Apply ethical principles to provide end-of-life care, including palliation of symptoms

Attitude
- Demonstrate respect, compassion and integrity in performing all professional activities
- Demonstrate commitment for professional development
- Advocate for professionalism
- Practice self-regulation and recognize the need for continuous self-improvement with an awareness of rapidly changing approaches and protocols of treatment of HIV/AIDS
- Show respect for colleagues and other health care professionals and the ability to foster a positive collaborative relationship with them
- Demonstrate ethical principles in HIV data documentation, sensitivity to plagiarism, confidentiality and ownership of intellectual property