



Rapid Assessment

of Training Needs and Mentorship
Approaches for Children and
Adolescent HIV Services in South Sudan

South Sudan Rapid Training Needs Assessment Report

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Abbreviations

3TC	Lamivudine
ABC	Abacavir
ALHIV	Adolescents living with HIV
ANECA	African Network for the Care of Children Affected by HIV/AIDS
ARI	Acute Respiratory Infections
ART	Anti-retroviral Therapy
ARV	Antiretroviral
ATV/r	Atazanavir/ritonavir
AZT	Zidovudine (AZT same as ZDV)
AZT/3TC/NVP	Zidovudine/Lamivudine/Nevirapine
CHW	community health worker
CLHIV	Children Living with HIV
CPD	Continuous Professional Development
CPT	Cotrimoxazole prophylactic therapy
D4T	Stavudine
D4T/3TC/NVP	Stavudine/Lamivudine/Nevirapine
DOTs	Directly Observed Therapy, Short Course
DTG	Dolutegravir
EFV	Efavirenz
EPI	Expanded Program of Immunization
GARPR	Global AIDS Response Progress Reporting
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
HCT	HIV counselling and testing
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
INH	Isoniazid
KII	Key Informant Interview

LIP	Lymphocytic Interstitial Pneumonia
LPV/r	Lopinavir/ritonavir
MCH	Maternal and Child Health
MTCT	Mother to child transmission
NGO	Non-governmental organization
NNRTI	Non-nucleoside reverse transcriptase inhibitor
NVP	Nevirapine
OPD	Outpatient department
OVC	Orphans and Vulnerable Children
PEPFAR	US President's Emergency Plan for AIDS Relief
PITC	Provider initiated testing and counselling
PLHIV	People living with HIV
PMTCT	Prevention of mother-to-child transmission of HIV
RAL	Raltegravir
SPLA	Sudan People's Liberation Army
TB	Tuberculosis
TDF	Tenofovir disoproxil fumarate
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organization
YPLHIV	Young People Living with HIV
ZDV	Zidovudine

Executive Summary

HIV is a global public health threat and a major burden nations. The Republic of South Sudan is part of global task force to fight HIV and AIDS. South Sudan has witnessed the effects and impact of the disease on her people. Two of these effects are stigma and discrimination, both self and enacted stigma, among all communities and social classes.

Children and adolescents are among the affected and are at high risk. Health workers have limited knowledge of paediatric HIV, tuberculosis and other sexually transmitted infections. Access to treatment is poor and many clients lack information on care and treatment. Although strides have been made in adult HIV care, healthcare providers still lack the required competencies to offer quality care to children and adolescents. This situation therefore leaves glaring gaps in South Sudan to attain the UNAIDS global strategy of 90–90–90 by 2020.

ANECCA received a grant from the Global Fund to fight AIDS, Tuberculosis and Malaria to implement a regional project “Catalysing access to quality services for children and adolescents living with HIV.” This regional project provides a unique opportunity to capitalise on paediatric and adolescent expertise across the continent to address disparities in access to care and treatment for children and adolescents.

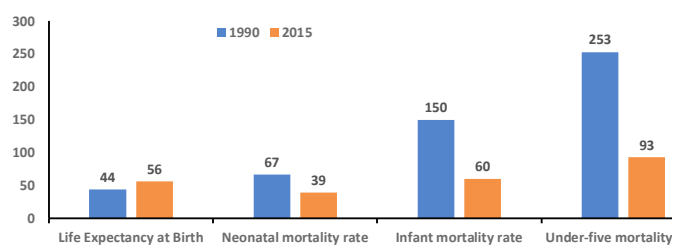
ANECCA is the first NGO to carry out a broad study looking for gaps in children and adolescents accessing HIV management in South Sudan. The study was carried out in 10 facilities that provide comprehensive HIV care and treatment in 10 states.

1 Introduction

1.1 The Status of the Healthcare System in South Sudan

The Republic of South Sudan got its independence in 2011 after decades of a civil war that left over 2 million people dead. It has a population of about 12,339,812 (2015 Est.),¹ with high levels of poverty and limited infrastructure and capacity for service provision in all sectors. There have been remarkable improvements in South Sudan's key health indicators: an average life expectancy at birth for both sexes of 56 years, and maternal mortality rate of about 789 deaths per 100,000 live births in 2015,^{2,3} (Figure 1). More than 80% of deliveries occur at home, mostly at the hands of traditional birth attendants. Infant and under-five mortality rates were 60.3⁴ and 92.6⁵ deaths per 1,000 live births respectively in 2015. Major causes of infant and under-five morbidity and mortality include malaria, pneumonia, diarrhea diseases, and malnutrition.

Figure 1: Key health indicators for South Sudan (1990 and 2015). (Source: World Bank <http://wdi.worldbank.org/table/2.21#> Accessed 07/01/2017)



- 1 World Bank. Extract from World Development Indicators (2015 estimates, available at <http://databank.worldbank.org/data/reports.aspx?source=2&country=SSD#>. Accessed 07/01/2017
- 2 World Bank. World Development Indicators. <http://wdi.worldbank.org/table/2.21#>. Accessed 07/01/2017
- 3 UNICEF. Trends in Maternal Mortality: 1990 – 2015, Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Available at http://data.unicef.org/wp-content/uploads/2015/12/Trends-in-MMR-1990-2015_Full-report_243.pdf Accessed 07/01/2017
- 4 World Bank. <http://data.worldbank.org/indicator/SP.DYN.IMRT.IN> (file: API_SP.DYN.IMRT.IN_DS2_en_excel_v2). Accessed 07/01/2017
- 5 World Bank. <http://data.worldbank.org/indicator/SH.DYN.MORT> (file: API_SH.DYN.MORT_DS2_en_excel_v2). Accessed 07/01/2017

South Sudan's dire health outcomes are closely linked to limited access to healthcare. There are 1,147 functioning health facilities in the country, with over half of the population having to walk more than three miles to the nearest primary healthcare unit, the most basic health facility.⁶ The per capita number of outpatient visits to health facilities is just 0.2 each year. The doctor to population and nurse to population ratios are 1.5 and 2 per 100,000 citizens, respectively.⁷ The personnel gap is partially filled by other allied staff including community health workers and home health promoters, whose competencies allow them to treat only minor cases. In addition, about half of the people working in South Sudan's health service are either employed by international NGOs or have their salaries topped up by the NGOs as incentives to keep them in service.

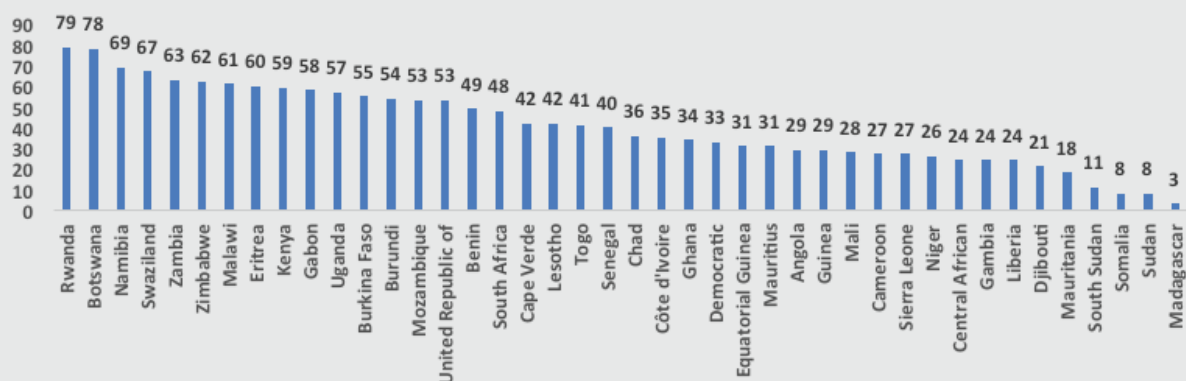
South Sudanese communities generally live in semi-independent homesteads forming villages inhabited by close and extended relatives. Their societies are structured into kinships, clans and villages administered by a king or chief, depending on the ethnic community. The major religious groups are Christianity, Islam and indigenous religions. The men are generally responsible for providing for the family's upkeep while the females are homemakers.⁸ All communities have some form of initiation rite into adulthood such as the removal of lower teeth, facial markings, wearing of special beads and male circumcision. Wife inheritance is a common practice among several South Sudanese communities.⁹

1.2 Status of HIV Epidemic in South Sudan

South Sudan has a low level generalized HIV epidemic with concentrated epidemic among specific populations.¹⁰ The estimated national prevalence among adults was 2.7% in

- 6 South Sudan Health Sector Development Plan (2012-2016)
- 7 ibid
- 8 (Government of the Republic of South Sudan, 2016)
- 9 ibid
- 10 Government of South Sudan, Country Progress Report, Global AIDS Response Progress Report (GARPR), April 2016. Available http://www.unaids.org/sites/default/files/country/documents/SSD_narrative_report_2016.pdf Accessed 07/01/2017

Figure 2: Antiretroviral treatment coverage in sub-Saharan African countries, 2015 (Source: UNAIDS, <http://aidsinfo.unaids.org/>. Accessed 12 December 2016.)



December 2015.¹¹ The prevalence however varies across the country, ranging from 0.3% in Northern Bahr el Ghazal to 6.8% in Western Equatoria. It is estimated that about 180,000 people including 14,000 children under 15 years of age (or 7.7% of all people living with HIV and AIDS) were living with HIV in 2015¹² with 13,000 new infections every year. Most of the HIV infection is acquired through heterosexual intercourse.

The prevalence is higher in women than in men and among the 20–24 and 25–29-year age groups. Prevalence within the military is 5%,¹³ and about 13% among sex workers. Sex workers and their clients, including the military, account for at least 63% of new adult infections.¹⁴ Approximately 12,000 people died from AIDS-related causes in 2015 including about 1400 children below 15 years.¹⁵ The protracted crisis, in addition to increasing the risk of spread of HIV, also makes it extremely difficult for those infected to access services, and where the services are available, the quality of such services risks being compromised. It is therefore no surprise that South Sudan has one of the lowest ART coverage in Sub-Saharan Africa. Only 19,553 people were on ART in South Sudan by December 2015

By June 2016, 27 sites across the country were offering comprehensive HIV treatment care and support to people living with HIV. The estimated percentage of people living with HIV on ART of all ages is 11.3% for people aged 15 years and above, and 5% of children below 15 years.¹⁶ The estimated PMTCT coverage in the country is 41%.

Besides being one of the most HIV-burdened countries in Africa, South Sudan is also one of the countries with the lowest coverage of paediatric and adolescent HIV treatment, care and support services in sub-Saharan Africa (Figure 2).¹⁷

1.3 Problem Statement and Rationale for the Training Needs Assessment

Recently, the global community adopted an ambitious goal to end AIDS by 2030. It adopted three targets that must be achieved by 2020: 90% of all those infected with HIV should know their status, and of these that know their status at least 90% should be placed on potent antiretroviral treatment that would result in at least 90% of all those on treatment achieving viral suppression. As has been seen in many parts of sub-Saharan Africa, including South Sudan, ART coverage for children and adolescents is unacceptably low. One of the reasons for this low coverage could be the limited capacity to provide services for children and adolescents living with HIV, including initiation of ART in this population. While it is possible to achieve 90–90–90 in a country without achieving 90–90–90 among children and adolescents, such achievement would not be sustainable as the HIV-positive children and adolescents will grow to become adults, thus maintaining a huge circulation of the virus in the population.

To ensure that children and adolescents are not left behind, it is important to identify the factors responsible for the performance gaps, especially those challenges that can be addressed through training and mentorship. To address this issue, ANECCA commissioned a team of international and national consultants to conduct rapid assessments of the performance gaps among healthcare workers in the provision of HIV services to children and adolescents in seven

11 Ibid

12 UNAIDS, Spectrum estimates, 2016

13 SPLA Behavioral Surveillance survey, 2012

14 Government of South Sudan, Mode of transmission study, 2013

15 UNAIDS, 2016 Spectrum estimates

16 South Sudan Ministry of Health spectrum estimates report, June 2016

17 ANECCA Regional Concept Note to the Global Fund for Tuberculosis, AIDS and Malaria, 2014.

countries, including South Sudan, that could be addressed through appropriate training and mentorship. The results of these rapid needs assessments are expected to inform the development of regional training materials and mentorship frameworks for healthcare and psychosocial workers in the provision of paediatric and adolescent HIV care, support and treatment services. The assessment was divided into two parts: a desk review and primary data collection.

1.4 Objectives of the Assessment

The general objective of the study was to assess the training needs and mentorship approaches of healthcare workers related to paediatric and adolescent HIV services in South Sudan.

Specific Objectives

The specific objectives were

- To identify performance gaps among healthcare workers who provide treatment, care and support services to children and adolescents living with HIV in the seven countries that can be addressed through appropriate training and/or mentorship programmes.
- To determine the types of trainings and mentorship approaches required to address identified performance gaps.

2 Methodology

2.1 Study design

This study was a non-hypothesis driven, cross-sectional descriptive study with both qualitative and quantitative components. The qualitative component employed key informant interviews while the quantitative component used supervised structured self-administered questionnaires to collect data.

Key informant interviews (KII) were conducted with the heads of participating healthcare facilities to assess their perception of performance issues within their healthcare facilities, the training needs and environmental factors affecting performance. Semi-structured open-ended questionnaires were used for the KII. KII sessions were also conducted with the leadership of the national AIDS control agency, the HIV/AIDS Division of the National Ministry of Health, selected policy makers, relevant community-based and civil society organisations, international development agencies working on HIV, and other key stakeholders and opinion leaders to determine their perception of existing performance gaps in treatment, care and support for children and adolescents living with HIV, training needs and structural and other factors that might be affecting performance in South Sudan. The country team selected organisations for the KIIs, based on their local contexts. All KII were recorded using an audio recorder, and manual note taking.

Structured questionnaire-based interviews were conducted to establish the adequacy and depth of knowledge and skills of selected service providers, and attitudes and opinions of healthcare workers directly responsible for the treatment, care and support of people living with HIV. The questionnaires were self-administered under the supervision of the field staff.

2.2 Study Area

The assessment was conducted in all the 10 regions (former states) of South Sudan

Sample size and sampling procedures

Quantitative component: As the study was a rapid needs assessment, with time and funding constraints, no sample size estimation was done. Because few facilities offer comprehensive HIV services, the entire country was used as the sampling unit. A comprehensive HIV facility was defined as a facility offering a complete package of HIV services: anti-retroviral treatment, PMTCT, HIV testing services, and other care and support services. One facility was selected from each state in the country. In each of the selected facilities, all the clinicians, nurses and midwives, counsellors, community health extension workers and social workers working at the HIV clinic were invited to participate in the assessment.

Qualitative component: Purposive sampling was used to select participants for the qualitative component based on the individual's professional role and their ability to provide good insight into the HIV programme in the country or in the participating facility. In collaboration with the Ministry of Health and ANECCA national project officer, the national consultant carried out a stakeholder analysis and identified the various stakeholders in children and adolescent HIV care. These included UN bodies, professional associations, civil society organisations and relevant government programmes, departments or unit. Thereafter, purposive targeted sampling was carried out to identify two or three respondents per organization who are directly involved in paediatric and adolescent training and mentorship for key informant interviews. KII participants were selected from Ministry of Health; South Sudan AIDS Commission, Ministry of Health Reproductive and Child Health departments, UNICEF, UNFPA, WHO and UNAIDS, USAID/PEFPA, civil society organisations, Global Fund-HIV/AIDS. At the facility level, the heads of the facility as well as the head of the HIV programme were selected to participate in the KII.

Table 1: Participating health facilities

State	Facility
Jubek	Juba Military Hospital
Imatong	Nimule Hospital
Gbudwe	Yambio State Hospital
Jonglei	Bor Hospital
Eastern Lakes	Mapuordit Hospital
Eastern Lakes	Yirol Hospital
Yei River	Yei Hospital
Aweil	Aweil State Hospital
Gogrial	Kuajok Hospital
Eastern Nile	Renk Hospital

2.3 Data collection methods

A key informant interview (KII) guide and structured questionnaire were developed by the lead consultant and validated during the regional workshop in Uganda in April 2016. The KII guide consisted of one main question and 10 probes. In addition, the demographic details of the respondents were collected (Appendix 1). The structured quantitative questionnaire consisted of 75 questions divided into four main components: demographic data; data on HIV-related training and mentorship experience; questions exploring respondents' attitudes to treatment, care and support of children and adolescents living with HIV; and

a section exploring the knowledge base and skills of the healthcare workers on treatment, care and support of children and adolescents living with HIV. For the section exploring attitudes, statements were made related to children and adolescents living with HIV to which respondents were required to either agree or disagree. The knowledge and skills questions were segregated into two—one for clinicians only and the second for non-clinicians because of the expected differences in knowledge and skills between clinicians and non-clinicians (Appendix 2). These tools were pre-tested using facilities that were not among those selected for the study, and based on the outcome of the pre-testing, the tools were adjusted.

2.5 Data management and analysis

Data collection

To assist with data collection, a field team was constituted made up of 15 persons with relevant skills in field research and data entry. The team was trained for 3 days in the study tools, protocol, quantitative and qualitative research techniques, ethical issues in research and interviewing techniques, using role plays, didactic lectures and interactive sessions. Data were collected over two weeks in September 2016.

Qualitative data. Recorded interviews were transcribed and compared with the manual notes for concurrence. Each transcript was read and re-read by a team of qualitative analysts who immediately noted evident points and developed codes and short comments using a code matrix. Thereafter, the objectives of the study and the interview guides were used to cross-check codes developed to decide whether the codes conformed to the study objectives and to the questions in the interview guides. After primary coding using the developed codebook, all quotes within the codes were reviewed in an auxiliary coding process. Here, redundant codes were cleaned out, split, merged and re-named. Network diagrams were drawn to show relationships between codes and quotations. Further analyses were conducted using the Nvivo qualitative data analysis software. The qualitative analysis was conducted by professional qualitative data analysts.

Quantitative data. Responses to the structured questionnaires were entered into a web-based database by trained data entry clerks, and analysed using descriptive statistics. There were four distinct sets of data and the analysis also followed the same four blocks:

- Demographic information
- Training and mentorship experience

- Attitude towards provision of various services to children and adolescents
- Knowledge of paediatric and adolescent HIV

Categorical data were described using proportions and percentages while continuous variables were described using means and standard deviations for normally distributed data, and median and inter-quartile ranges for non-normally distributed data. The results of the analysis were used to generate a list of performance gaps, and to determine the gaps caused by limited knowledge and skills and those caused by environmental factors. Quantitative data analysis was conducted using Stata version 22 by a professional quantitative data analyst and epidemiologist.

Quality Assurance

To promote the rigor and quality of the research, the study team endeavoured to ensure that data is authentic and methods of data analysis are trustworthy. The lead consultant and the ANECCA secretariat supported the national consultant and ANECCA in-country team to carry out this review and assessment.

For the field assessment, a team of competent field assistants with experience in qualitative research was selected. The study team were trained in qualitative research techniques, ethical issues pertaining to confidentiality, and informed consent.

The research team was also trained in qualitative research methods, specifically key informant interviews and data

collection tools to ensure standardization of understanding. The research team also used a standard research guide; data were triangulated to enhance understanding of the theme. Key informant interviews were carried out by the national consultant, ANECCA national project officer and study assistants.

2.6 Study Limitations

Children and adolescents living with HIV and their caregivers who would have provided useful insights into the quality of services being provided by the healthcare workers, were not included in the study. However, the study was designed to determine the knowledge and skills gap of the healthcare workers. To this end, the study achieved its desired goals.

2.7 Ethical Considerations

The South Sudan Research Ethics Committee granted ethical approval and the Ministry of Health including national and state HIV departments granted institutional clearance. Written informed consent was obtained from each study participant before participation in the study. Efforts were made to protect participant privacy and confidentiality. All research staff received training in confidentiality as part of the field workers' training. Study-related information, including forms, recordings and manual notes, were stored securely at the offices of the respective principal investigators. All information that would identify each participant was removed prior to data analysis, leaving only the participant ID.

13,000
 new HIV infections every year.
 Prevalence is higher in women
 than in men and among the 20–29
 year age groups



3 Results of the Desk Review of Training Materials

Recognising the critical state of the HIV epidemic in South Sudan, the government enacted several policies and commissioned several guidance documents aimed at strengthening and fast-tracking the response. The establishment with clear roles and responsibilities of the South Sudan AIDS Commission in 2006 and the Directorate of HIV and AIDS in the Ministry of Health in 2008, are two key policy decisions that have had great impact on the HIV and AIDS response in the country. Some of the policies enacted so far include the *Government of Southern Sudan 2007 HIV/AIDS policy*, which reviewed and updated the SPLM's 2001 *HIV/AIDS policy and control strategies for the New Sudan*. The *South Sudan national HIV/AIDS strategic plan (NSP) 2013–2017* focuses on universal coverage, with the overall aim of increasing access to ART across the country. Some guidelines include the *Consolidated clinical guidelines on use of antiretroviral drugs for HIV treatment and prevention of 2014*.

3.1 Healthcare system structure

The prolonged civil unrest in South Sudan no doubt took a heavy toll on healthcare delivery in the country, resulting in the near collapse of the healthcare delivery system. It is estimated that about 80% of the healthcare during the war was provided by non-governmental and faith-based organisations, with only about a quarter of the population having access to some form of healthcare. With the attainment of independence from Sudan in 2011, the nascent Ministry of Health has taken steps towards rebuilding and transforming the public health system.

Healthcare delivery in South Sudan is structured into four levels, following the continuum of care principle: community, primary, secondary, and specialised care levels. These four levels are linked by a referral system. Currently, the primary, secondary and specialised care services are fully operational. The primary healthcare services operate at the county levels, supervised by the county health department; the secondary healthcare services operate at the State level supervised by the State ministries of health; while the tertiary

healthcare delivery services, though located at the State level, are managed by the Federal Ministry of Health, and include all the tertiary healthcare institutions, principally the teaching hospitals.

When fully operational, community healthcare will be provided by the community health workers, maternal and child health workers, and home health promoters. Other plans for the healthcare delivery system as captured in the *Health sector development plan (2011–2015)* are: "Primary healthcare units (PHCUs) provide the first level of interaction between the formal health system and the communities, and they are expected to provide basic preventive, promotive and curative care for a catchment population of 15,000. PHCCs are expected to provide services to about 50,000 people and, in addition provide basic diagnostic laboratory services and maternity care. Secondary care including comprehensive obstetric care, in-patient care and surgery is to be provided by county and state hospitals for 300,000 people. State hospitals are earmarked to serve a catchment area of about 500,000 people. However, there are numerous gaps and challenges in strengthening all these levels to reach minimum optimal standards.¹⁸

3.2 Recommendations for treatment, care and support of children and adolescents living with HIV

At the time of preparing this report, the global recommendation for the treatment, care and support for children and adolescents living with HIV is as presented in the 2016 edition of the "*Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations*"¹⁹ and the "*Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: Recommendations for a public health approach, 2nd edition*"²⁰ June 2016.²⁰ According to these documents, the

18 (Government of South Sudan Ministry of Health, 2011)

19 Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations – 2016 update. Available at <http://www.who.int/hiv/pub/guidelines/keypopulations-2016/en/>. Accessed 14/10/2016

20 Consolidated guidelines on the use of antiretroviral drugs for treating and

global recommendations were for ART to be initiated in all adolescents and children living with HIV regardless of the WHO clinical stage or CD4 cell count.

South Sudan has guidelines on the treatment, care and support of children and adolescents living with HIV, based on the 2013 WHO guidelines on treatment of children and adolescents,²¹ which recommended the initiation of ART for all children below 5 years diagnosed with HIV regardless of the clinical stage or CD4 count, initiation of ART for all children above 5 years and adolescents with a CD4 count of 500 cells/mm³ or above, and in all children and adolescents infected with HIV with severe or advanced symptomatic disease (WHO clinical stage 3 or 4) regardless of age and CD4 cell count. However, the government has adopted in principle the test-and-treat recommendation based on the 2016 guidelines, and is in the process of domesticating that recommendation.

While the importance of clinical and counselling mentoring in the training of healthcare workers providing HIV services is well recognised, especially at the periphery of the healthcare system,^{22,23} there is no document in South Sudan relating to mentorship, or any evidence of a structured mentorship programme in the country.

3.3 Existence of training and mentorship programs for healthcare workers looking after HIV+ children and adolescents

Before independence, much of the healthcare provision in South Sudan was in the hands of international NGOs, and donor funded. There is no evidence that any of these organisations developed any structured in-service paediatric and adolescent HIV training programmes, or any forms of in-service training programmes. It is likely that any in-service training provided by the organisations providing healthcare services in South Sudan during this time might have been ad hoc, which would make it difficult to determine the coverage, quality and intensity of such training.

On mentorship, there were no manuals for the training of healthcare workers and nor a national guideline on clinical mentorship.

3.4 'Ideal' skills required to provide quality HIV counselling, testing, treatment, care and support to children and adolescents

There are no records suggesting what should be the 'ideal' skills required to provide quality HIV counselling, testing, treatment, care and support to children and adolescents. However, these skills could be deduced from the various guidelines on the management of people living with HIV. The ideal skills would be skills required to effectively execute the instructions in the guidelines.

4 Results of the qualitative component of the primary research

4.1 Special arrangements for conducting HIV counselling and testing for children

All the key informants interviewed reported that no special arrangements had been made for conducting HIV counselling and testing (HCT) for children in any of their State or health facilities. HCT for children is conducted within designated locations where everybody else is receiving the service. Counsellors are mandated to seek and obtain consent from the guardians of the children to test them. It was felt that the requirement for the guardian's consent before counselling and testing might have been a major factor in the low uptake of counselling and testing among children and adolescents, and by extension, low uptake of treatment.

"Usually we have the HIV program in the hospital ... they are usually doing the counselling and testing for the adults, it is not there for paediatrics ... we need to have a link between HIV adults and paediatrics."

DG State Ministry of Health

"Well, we don't have any special arrangements but we have the HIV counselling and testing guideline which clearly indicates that for any underage child, who is probably either willing or has been required to take the HIV test, consent must be sought. Consent must be obtained from the parents or the guardians. You see that is also probably one of the challenges on how we may also have low HIV counselling and testing uptake among these category, the children and adolescents, because of

preventing HIV infection: recommendations for a public health approach, 2nd edition, June 2016. Available at <http://www.who.int/hiv/pub/arv/arv-2016/en/>. Accessed 14/10/2016

21 Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach June 2013. Available at <http://www.who.int/hiv/pub/guidelines/arv2013/download/en/>. Accessed 14/10/2016

22 Antiretroviral (ARV) toolkit: Referral care and clinical mentoring (http://www.who.int/hiv/topics/vct/arv_toolkit/en/index4.html). Accessed 14/10/2016

23 World Health Organization. WHO Recommendations for Clinical Mentoring to Support Scale-Up of HIV Care, Antiretroviral Therapy and Prevention in Resource-Constrained Settings. Geneva, Switzerland:2006 (available at <http://www.who.int/hiv/pub/guidelines/clinicalmentoring.pdf>). Accessed on 14/10/2016

the issue of consent you see that because most parents are either busy to sign the consent form for their children to be tested or they may not be there because you know people are living in broken families now.”

County South Sudan AIDS Commission (SSAC) HIV/AIDS coordinator

Another major challenge identified with HCT uptake among children and adolescents is the lack of test kits and other consumables required for an effective testing and treatment programme. This was aptly captured by a director general of one of the State Ministries of Health:

“... since the crisis of 2013, HIV services have stopped. The government no longer provides the necessities – the drugs and the kits for the testing they are not available. ... You know that we have two VCTs in the state: one in the Malakal, which is now completely not working, the other one in Renk, and it is also not working because it lacks all these necessities”

4.2 Special clinic for managing children and adolescents with HIV

All key informants interviewed for this survey reported that there were no special clinics for managing children and adolescents with HIV in their facilities. Children, adolescents and adults are all catered for at the same ART centre, as captured by one of the DGs from one of the State Ministry of Health:

“...We don't have specific part of paediatrics to be managed in the hospital because we may have a child with HIV admitted in the paediatric department but taking his drugs from the ART facility.”

DG State Ministry of Health

It appears there are practices that are particularly troubling in some centres in South Sudan, such as giving ARV prophylaxis to children who are found to be HIV positive so that they can continue breastfeeding, as reported by an HIV/AIDS director at one of the State ministry of health:

“Yes... In fact ... we don't have the special clinic for children. What we have is the general ART center for children and everybody, but we don't have a special center for children with HIV/AIDS. This is what we have in the state. So those children that we have found specially

are HIV positive, we give them ARV prophylaxis so that they can take these drugs and then they continue breastfeeding . That is the simple thing we do in Bor Hospital and other places where people are HIV positive.”

HIV/AIDS director, State ministry of health

4.3 Areas of the children and adolescent HIV care in the health facility that may require improvements

Most of the respondents believed their facilities could benefit from improvements to ensure that children and adolescents receive better HIV care and treatment services. Some of the areas mentioned include:

- HIV testing at expanded programme of immunization
- Increase the number of health workers providing HIV care services to children and adolescents
- Establish in all facilities at county and state levels a unit that will coordinate HIV services response for children and adolescents.

“Well, taking into account that elimination of MTCT is possible and is one of the cheapest ways of mitigating HIV in any country, taking into account that we have many children and adolescents who are missed out in HCT service because of concerns of consent and age, bearing in mind that we have this current issue of many of the children who may test positive after delivery from an infected mother being lost in the community I think it is important that we develop a particular unit for catering for such cases if not a unit then there should be some kind of an office and response mechanism in place to pay particular attention to this age group”

County South Sudan AIDS Commission (SSAC) HIV/AIDS coordinator

4.4 Challenges in managing children and adolescents living with HIV

Most of the key informants interviewed reported a host of challenges they face as they offer HIV care and treatment services to children and adolescents. These include:

- Lack of awareness by parents and the community about HIV infection among children
- Side effects of drugs on children; sometimes parents stop giving the drugs to children for this reason

- Few staff specialized in paediatric HIV care and treatment
- Lack of knowledge on ART dosage for children
- Parents not bringing children for testing for HIV
- Mothers delivering at home and thereby compromising the prevention of mother-to-child transmission programme.

“Lack of awareness by parents is one of the biggest challenges. If we talk more about HIV in paediatrics, I am sure the parents will accept because they think that this child is sick mostly because of anaemia, malaria... they don't think of any other disease. So, we need to create more awareness...in the community and among parents. So the challenge is like the linkage between paediatric and HIV, there is a gap. So mostly when you see a child is sick you just think of about other diseases you don't think of HIV. The other challenge is the side effects of the drugs. Parents need to be educated on how to administer the drugs to the children to minimize the side effects of the drugs ...”

“.. There are very few staff who are specialized or trained in HIV paediatric care, and we have very few doctors who are paediatricians or have a paediatric HIV care background. There is also limited skilled personnel to handle such cases.”

SSAC County HIV Coordinator

4.5 Availability of paediatricians

None of the key informants interviewed reported being aware of a paediatrician either at state or facility level. Key informants reported that there are only physicians trained in general medicine.

“All over the state there is no skilled health worker or human resources available. There is need for training health workers in this area”

HIV coordinator for greater Western Equatoria State

“... Well, we don't have paediatrics specialists, we only have general doctors who are trained in a paediatrics course when they were studying medicine. So usually we have the doctors who are senior seeing the paediatrics when there is situation they refer to the HIV program for testing and counselling. That's what I was saying, it's good if we implement it within the paediatric department and then send again to HIV department... ”

Director General, State Ministry of Health

4.6 Support required to improve management of children and adolescents living with HIV

The key informants interviewed in this survey mentioned some key support that they require to improve HIV services:

- Nutritional support to the clients
- Training health workers locally and internationally
- Regular mentorship
- Increase incentives and ensure they are paid on time
- Ensure health workers have the relevant guidelines

“Yes, the first is to train the few or existing human resources on the management of children and adolescent HIV care. We need to have people trained on that so that they could give adequate or better services and attention to these age groups...”

SSAC County HIV Coordinator

“Yes, the support we want to appeal to UNICEF, nutrition control program, because most of the cases we are facing the state hospital are malnourished... So UNICEF can support the nutrition control program at the state hospital especially in the paediatric department”

Director General, State Ministry of Health

“We do not have a special programme for children or adolescents with HIV... The programme here is supported by some NGOs, but that is not enough at all. Samples should be examined in that state rather than taking them South Africa... There is need for a laboratory in the country to manage children or adolescents with HIV, handled by specialist... We need to have in place a clinician or doctor and specialist on children”

ART In-charge, State Hospital

4.7 Skills and knowledge gaps observed among staff working with children and adolescents living with HIV

Responses from key informants on skills and knowledge gaps reveal several knowledge and skill gaps among healthcare workers that affect their ability to provide quality services to adolescents and children in the country. Some of

the skills and knowledge gaps include:

- Lack of expertise in an entire state to operate the CD4 machine
- General low level of skills and knowledge of most aspects of paediatric and adolescent HIV medicine including basic clinical care of children and adolescents living with HIV, which was attributed to lack of training and high staff turnover.

“...Skills, inadequate knowledge and skills in managing paediatric HIV care are lacking, only PMTCT in general. Staff are also limited; Once people are trained in how to manage such cases, there would be an increase in the number of clients seeking such services... We don't have people who are trained specifically on paediatrics, we don't have paediatricians or clinicians.”

SSAC County HIV Coordinator

“We lost some children and adolescents living with HIV due to wrong dose, while often children or adolescents refuse to take their drugs. Some parents do not seriously follow up on the dosage or are not taught how to care or administer drugs to children or adolescents living with HIV.”

ART In-charge State Hospital

“Yes we have a knowledge gap because most of our staff do not have even senior school certificate or even primary school certificate. In addition, most are not well trained in caring for children and adolescents living with HIV...especially those working in PMTCT.”

Ministry of Health State HIV Coordinator

We had nurses working in the paediatric department, who are trained only in testing, okay. So the problem is the HIV part, they have training in this every three months. So I would like the HIV department to involve paediatric nurses, in the paediatric department so that they can gain knowledge about what is going on in HIV control.

Director General State Ministry of Health

4.8 Training staff in HIV care and treatment for children living with HIV

Most of the key informants interviewed reported that training

for health workers in HIV care and treatment is organized at the national level by the MoH, UN agencies and international NGOs. Key informants reported that the main role of the States and counties is to select participants. Key informants further reported that in the states where there is insecurity training has not occurred in the last couple of years.

“We do not have the capacity to train. Most times training is organized by the MOH, or SSAC in collaboration with partner organizations such as UNAIDS, UNDP, WHO, ICAP (International Centre for AIDS Care Treatment Programs), Intra Health. These are the people who mostly conduct such training. We only identify the necessary or the people who are right to attend such training. But we do not conduct any training, we don't have the capacity here. What we do train is the PLHIV support groups on orphans with HIV: how do you identify them in the community, how do you put them on your educational program and also nutritional support, the supplementary food aid that comes from World Food Programme (WFP)... that's the only minimal effort that we are doing.”

SSAC country HIV Coordinator

“The training is at national ministry of health. They have a training officer who requests training for clinical officers or nurses or whoever is working with HIV control programme in counties. He may say maybe I need four from Ronyi, Morobo or Lainya, then we select. We are the ones to select the people who are going for the training but the training is actually organized by the national ministry of health not the state ministry of health. That's the aspect of the training.”

Director General, State Ministry of Health

“In fact, one, we have no training. Some years back, WHO supporting training before the current crisis in South Sudan. So there was training especially on ART, which is a package dealing with the adolescents and also how to deal with the children. But there is no training now, the one person who was trained left, and we have a big gap. The staff which are there so there is a need in order to train and the guideline also.”

Director General, State Ministry of Health

4.9 Conclusion

Most of the health workers in South Sudan involved in the care of people living with HIV, including children and adolescents living with HIV have not received any standalone formal training on Paediatric or Adolescent HIV/AIDS. Some of the healthcare workers have received some form of general training on paediatric HIV care through the Integrated Management of Adolescent and Adult Illness/

Integrated Management of Childhood Illness (IMAI/IMAC) training; but the key informants did not think this was adequate. Knowledge gaps were observed among the health workers across the continuum of care for children and adolescents. In addition, there is acute shortage of paediatricians in the country. There is therefore the need to address the shortage of healthcare personnel in the country, as well as provide appropriate training on different aspects of care and support of children living with HIV.

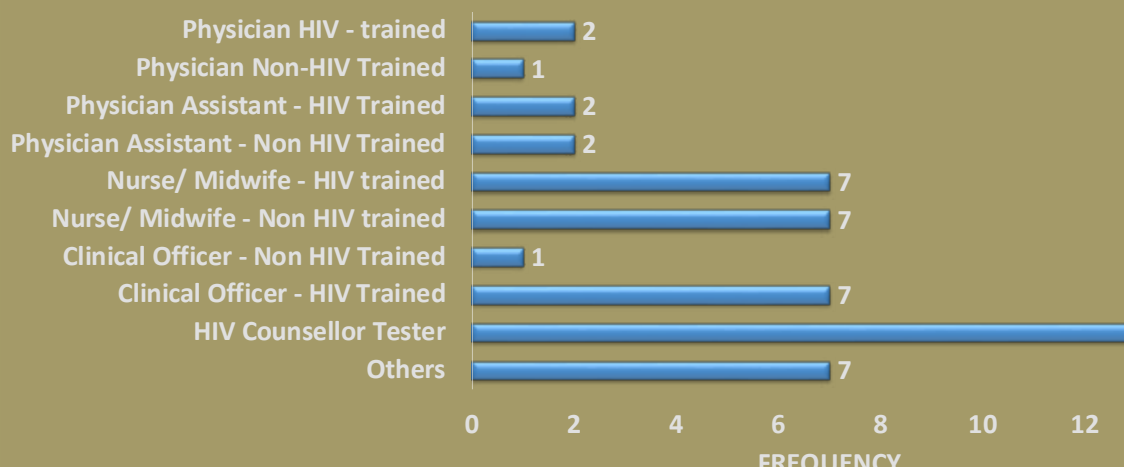
5 Results of the quantitative components of the training needs assessment

5.1 Demographic characteristics

A total of 49 respondents from 10 healthcare facilities participated in the study: 10% were from primary and 90% from secondary facilities. Fifteen respondents (31%) were

female; 25 participants (51%) were aged between 30 and 39 years; 16 (32.7%) were 40–49 years old; 7 were aged 20–29 years; 1 participant was > 49 years. Approximately 80% (39/49) of the participants were married; 14% (7/49) were single. The rest were either widowed or separated.

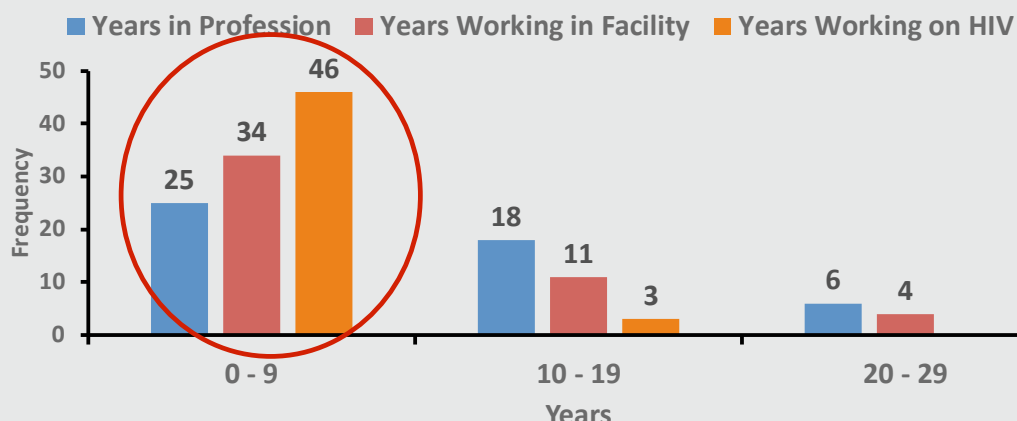
Figure 3 Distribution of the healthcare workers surveyed.



The median number of years that the healthcare workers have worked in their respective professions was 10 years, range (2–31); median number of years working in their current health facility was 7 years, range (1–25); while the

median number of years working in HIV was 5 years, range (0–13). Figure 4 provides the duration participants have spent working on the profession, at the facility and on HIV, at the time of the study.

Figure 4: Years of professional work, years working in facility, and years working on HIV



5.2 HIV training and mentorship experience

Thirty-five (71.4%) healthcare workers had received formal training in HIV medicine. Of these 51.4% (18/35) received between one and two training sessions on HIV medicine, and the rest (17/35) received three or more training sessions on HIV medicine. The cumulative duration of training on HIV medicine received by 83% was less than one month.

Of the 35 health workers trained in HIV medicine, only about 54% (19/35) had received any formal training in care and support of children living with HIV; of these 9 received only one training session, and 10 more than one training. All the 19 HCWs who received training in care of children living with HIV did so for a cumulative duration of less than one month. Twenty-five participants had received formal training on care and support of adolescents living with HIV, of these 11 had received one training session, and 24 participants received

the training for a cumulative duration of less than one month.

On HIV counselling, 71.4% (35/49) had received formal training and of these 60% (21/35) received more than one training, and 91.4% (32/35) received training for a cumulative duration of less than one month. Of the 35 participants trained in HIV counselling, 34% (12/35) and 63% (22/35) received training in HIV counselling in children and adolescents respectively; most were trained for less than one month. Twenty-one (42.9%) respondents had been mentored on treatment, care and support of PLHIV at some point in their career, but only 28.8% (14/49) had ever provided mentoring for other HCWs.

Table 3 describes the sources of HIV knowledge and skills for participants. It illustrates the poor utilization of readily available sources of information on HIV medicine.

Table 2: HIV knowledge and skills sources of the healthcare workers

	n (%)
Journals and other literature	
Did self-training on HIV medicine using journals and other literature	14 (28.6)
Did self-training on paediatric HIV using journals and other literature	5 (10.2)
Did self-training on adolescent HIV using journals and other literature	7 (14.3)
Conferences	
Got instructions on HIV medicine through conferences on HIV/AIDS	19 (38.8)
Got instructions on paediatric HIV through conferences on HIV/AIDS	11 (22.4)
Got instructions on adolescent HIV through conferences on HIV/AIDS	15 (30.6)
Pre-service training	
Took courses on HIV medicine during pre-service training	17 (34.7)
Took courses on paediatric HIV during pre-service training	7 (14.3)
Took courses on adolescent HIV during pre-service training	11 (22.4)
Continuous professional development (CPD)	
Took courses on HIV medicine as part of a CPD programme	23 (46.9)

Journals and other literature	n (%)
Took courses on paediatric HIV as part of a CPD programme	14 (28.6)
Took courses on adolescent HIV as part of a CPD programme	20 (40.8)
Formal training	
Attended formal training session on HIV medicine and received certificate	31 (63.3)
Attended formal training session on paediatric HIV and received certificate	17 (34.7)
Attended formal training session on adolescent HIV and received certificate	17 (34.7)
Web-based learning	
Used web-based learning to get instructions on HIV medicine	10 (20.4)

5.3 Attitudes and opinions of healthcare workers on paediatric and adolescent HIV

Fifty-seven percent (28/49) of the respondents believe that a child living with HIV can be effectively managed by HIV clinician whether or not that clinician has specific training on management of HIV positive children, while 53% (26/49) share the same opinion concerning adolescents living with HIV. Approximately 49% (24/49) of the healthcare workers believe that anti-HIV drugs are too strong for a child's young body; and 45% believe that children living with HIV should ideally be managed by an HIV trained paediatrician because children are too complicated. Thirty percent of the respondents believe that pregnant adolescents with HIV attending an antenatal clinic should be used to illustrate to the rest of the antenatal clinic attendees why pre-marital sex should be avoided, while 41% of the healthcare workers would notify the adolescents' parents of her HIV status without her consent.

5.4 Knowledge and Skills related to paediatric and adolescent HIV

The respondents were presented with scenarios related to paediatric and adolescent HIV, to assess their knowledge and skills. The questions were in two batches: the first batch for clinicians and the second batch for non-clinicians. The scores were calculated as a fraction of 100% and then divided into centiles as follows: 0–20%, 21–40%, 41–60%, 61–80%, and 81–100%. The results show that 80% (12/15) of the participating clinicians fell within the 3rd quintile, 14% below the 3rd quintile and 7% above the 3rd quintile. For the non-clinicians, 47% (16/34) fell within the 4th quintile, and 44% (15/34) fell within the 3rd quintile; the rest fell below the 3rd quintile.

5.5 Discussion

To the best of our knowledge, this is the first attempt to assess the performance gaps of healthcare workers caring for children and adolescents living with HIV in South Sudan. The assessment revealed several gaps in the provision of

services to children and adolescents living with HIV that must be addressed in order to improve the uptake of HIV services in the country.

The number of healthcare workers per facility is very low; and even among these few, most have no training on counselling treatment, care and support of children and adolescents living with HIV, and in counselling children and adolescents with HIV. Even healthcare workers with some form of training had received only one or two training sessions and for a cumulative period of less than a month over the two years before the study. And it is likely the training was conducted on an ad hoc basis by NGOs working in the country. In addition, there are extremely low numbers of paediatricians with HIV training. The finding that in an entire state there was no one who could operate a CD4 machine is disturbing.

It is likely that the limited training of healthcare workers would be responsible for low knowledge and skills scores recorded among all the healthcare workers, especially the clinicians who performed poorer than the non-clinicians. This may also have been responsible for the numerous negative attitudes and opinions expressed by healthcare workers.

Overall, the findings call for urgent measures to address the situation. Rapid actions are required to quickly mitigate the risks clients who are being seen by poorly qualified personnel are exposed to. This should then be followed by a longer-term strategy that will create a pool of personnel to provide sustainable quality HIV services, with universal coverage in line with the current test and treat strategy to which the government of South Sudan had signed. Current efforts by the Ministry of Health to restructure and reform the healthcare system present a window of opportunity for addressing the human resource issues highlighted by this report. It is also necessary to require all organisations and entities working on HIV in South Sudan to, as a prerequisite to operate, have a clear human resource capacity-building plan that addresses the specific needs of South Sudan. The government may also need to introduce incentives that would attract and retain qualified personnel in the HIV field.

Key informants reported adverse events such as suicide among patients, especially adolescents living with HIV. These suicide incidents were occurring mainly due to inadequate psychological support. There is urgent need for psychosocial support be provided to all children and particularly adolescents living with HIV. A peer support approach can be followed.

5.6 Conclusions

There are serious human resource challenges with the HIV response in South Sudan, especially in the provision of HIV services to children and adolescents. This paucity of

healthcare personnel caring for children and adolescents living with HIV is compounded by the very low knowledge and skill sets possible due to limited training at both the pre-service and in-service periods. There is also evidence that this has had serious adverse consequences on their clients, including suicide, deaths related to improper drug dosing, among others.

5.7 Recommendations

- The Ministry of Health should set minimum standards and a package for training healthcare workers providing HIV services to children and adolescents in South Sudan.
- The need is urgent to identify qualified health workers to offer HIV care and treatment services to adolescents and children in all facilities in the country.
- It is essential to urgently provide training for health workers involved in the care of children, and especially adolescents living with HIV.
- Effective delivery of HIV services for children and adolescents calls for the strengthening of all the components of a health system structure. The health system needs to have an effective logistics system by maintaining adequate stocks of HIV commodities (HIV test kits and other laboratory reagents, antiretrovirals and opportunistic infections drugs).



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Annexes

Annex 1: Informed consent form

KEY INFORMANTS AND HEALTH WORKERS

Good morning/ Good afternoon, my name is _____

About the study

This study involves conducting analysis of policies and guidelines on children and adolescents living with HIV; and the training needs assessment for service providers in South Sudan. The Ministry of Health (MoH) in partnership with African Network for the Care of Children Affected by HIV/AIDS (ANECCA) commissioned it. The information you will provide shall help them to understand the policy gaps in service delivery, access and utilization by children and adolescents, and training needs of health service providers to better plan health services for them.

You have been selected because you are involved in provision of HIV services to children and adolescents in South Sudan. Your participation is voluntary and will incur you no cost. It will also not affect your appointment at your present or future job.

The Principal Investigators are Dr. Dhuor Andrew Makur and Mr. Nkayivu Hannington who are in-charge of the study. The Co-investigators are Dr. Makeba Shiroya-Wandabwa, Dr. Chidi Victor Nweneka, Dr. Denis Tindyebwa and Dr. Robert Iriso.

This study was approved by the Ministry of Health's Ethical Oversight Committee under the chairperson f Dr. Richard Lako Lino.

The interview will take 30–45 minutes.

Risks

Although the study involves collection of data from you, the design of the study does not include procedures relating to taking any biological samples. Minimal risks are expected and these could be from distress arising from questions that may be considered sensitive.

Benefits

There are no direct benefits to participants themselves at the time of the study. However, there are indirect social benefits that include the fact that this data will help ANECCA and MoH to review relevant policies and guidelines as well as develop a training strategy for service providers with respect to pediatric and adolescent health and HIV services.

Voluntary participation

In case you are not interested in the study, you do not have to participate and no benefits will be lost. One of your rights to participate in this study is that you can withdraw from this study at any time.

Confidentiality

The answers you give us will only be known to us and will be kept confidential. For all study participants, names shall not be taken; instead, anonymous identifiers will be used, and referred to during the discussions, so that no names shall be tagged to particular responses. All answers provided shall only be known to the research team and will be kept confidential.

Authorization to use and disclosure of your information

Signature: Signing below indicates that; you have been informed about the study in which you volunteer to participate; that you have asked the questions about the study and that information given to you has permitted you to make a fully informed decision about the participation in the study. By signing this consent form, you, do not waive any legal rights. A copy of this consent form will be provided to you.

In case of any questions regarding the study, please contact the Principal Investigators, Dr. Dhuor Andrew Makur (0956266214) and Mr. Nkayivu Hannington.

In case of any questions regarding your rights, please contact Dr. Richard Lako Lino the chairperson of the Ministry of Health Ethical Oversight committee.

Respondent signature: _____ Date: _____

Interviewer's name: _____ Telephone Contact: _____

Signature: _____ Date: _____

Annex 2: Structured Questionnaire

Rapid Assessment of Training Needs for Children and Adolescent HIV Services and Mentorship Approaches for Children and Adolescent HIV Services in South Sudan

Structured Questionnaire

Name of the health provider _____

Name of the health facility _____

Sex _____

Age _____

Demographic information (For All Healthcare Worker Respondents)

1. Health facility: _____

2. Type of facility

- | | | |
|--------------|-----|---|
| a. Primary | [] | 1 |
| b. Secondary | [] | 2 |
| c. Tertiary | [] | 3 |

3. Respondent's job role

- | | | |
|---|-----|---|
| a. HIV-trained physician (in-service) | [] | 1 |
| b. Non-HIV-trained physician (in-service) | [] | 2 |
| c. Physician assistant – HIV trained | [] | 3 |
| d. Physician assistant – non-HIV trained | [] | 4 |
| e. Nurse/midwife – HIV trained | [] | 5 |
| f. Nurse/midwife – non-HIV trained | [] | 6 |
| g. Clinical officer – HIV trained | [] | 7 |

- h. Clinical officer – non-HIV trained [] 8
- i. Community health worker [] 9
- j. Social worker [] 10
- k. HIV counsellor-tester [] 11
- l. Others [] Please specify: _____ 99
4. Sex: Male [] (1) Female [] (2)
5. Age (years): _____
6. No of years in profession: _____
7. No of years working in HIV: _____
8. No of years working in this facility: _____
9. Marital status
- a. Single – never married [] 1
- b. Married [] 2
- c. Divorced [] 3
- d. Separated [] 4
- e. Co-habiting [] 5
- f. Widowed [] 6
10. Sexual orientation
- a. Heterosexual only [] 1
- b. Bisexual [] 2
- c. Homosexual [] 3
- d. Others [] Please specify: _____ 99

HIV Educational Background (For All Healthcare Worker Respondents)

11. Have you ever received any formal training on HIV medicine, excluding pre-service training? Yes [] (1) No [] (2)
(If No, go to question 14)
12. If yes to question 11, approximately how many training sessions have you received? _____
13. If yes to question 11, what is the cumulative duration of the training? _____
14. Have you ever received any formal training on care and support of children living with HIV? Yes [] (1)
No [] (2) (If No, go to question 17)
15. If yes to question 14, approximately how many training sessions have you received? _____
16. If yes to question 14 above, what is the cumulative duration of the training? _____
17. Have you ever received any formal training on care and support of adolescents living with HIV? Yes [] (1)
No [] (2) (If No, go to question 20)
18. If yes to question 14 above, approximately how many training sessions have you received? _____
19. If yes to question 14 above, what is the cumulative duration of the training? _____
20. Have you ever received any formal of training on HIV counselling? Yes [] (1) No [] (2) (If No, go to question 23)
21. If yes to question 17 above, approximately how many training sessions have you received?
22. If yes to question 17 above, what is the cumulative duration of the training?

23. Have you ever received any formal training on HIV counselling for children living with HIV
No [] (2) (If No, go to question 26) Yes [] (1)
24. If yes to question 20 above, approximately how many training sessions have you received?
25. If yes to question 20 above, what is the cumulative duration of the training?
26. Have you ever received any formal training on HIV counselling for adolescents living with HIV
No [] (2) (If No, go to question 30) Yes [] (1)
27. If yes to question 20 above, approximately how many trainings have you received?
28. If yes to question 20 above, what is the cumulative duration of the training?
29. Have you ever received any form of formal mentoring on treatment, care and support of people living with HIV?
Yes [] (1) No [] (1) (If No, go to question 31)
30. If yes to question 17 above, approximately how many times have you been mentored in the last 24 months?
31. Have you ever received any form of formal mentoring on treatment, care and support of people living with HIV?
Yes [] (1) No [] (2) (If No, go to question 33)
32. If yes to question 17 above, approximately how many people have you mentored in the last 24 months?
33. Which of the following scenarios applies to you? (Mark True or False as appropriate)
- I did self-training on HIV medicine using journals and other literature (1)
 - I did self-training on paediatric HIV using journals and other literature (2)
 - I did self-training on adolescent HIV using journals and other literature (3)
 - I got instructions on HIV medicine through conferences on HIV/AIDS (4)
 - I got instructions on paediatric HIV through conferences on HIV/AIDS (5)
 - I got instructions on adolescent HIV through conferences on HIV/AIDS (6)
 - I took courses on HIV medicine during pre-service training (7)
 - I took courses on paediatric HIV as pre-service student (8)
 - I took courses on adolescent HIV as a pre-service student (9)
 - I took courses on HIV medicine as part of a continuing professional development programme (10)
 - I took courses on paediatric HIV as part of a continuing professional development programme (11)
 - I took courses on adolescent HIV as part of a continuing professional development programme (12)
 - I attended a formal training session on HIV medicine and received certificate (13)
 - I attended a formal training session on paediatric HIV and received certificate (14)
 - I attended a formal training session on adolescent HIV and received certificate (15)
 - I used web-based learning to get instructions on HIV medicine (16)

HIV Educational Background (For Clinicians only)

34. Have you ever received any formal training in treatment of children living with HIV
(2) (If No, go to question 37) Yes [] (1) No []
35. If yes to question 14, approximately how many training sessions have you received?_____
36. If yes to question 14, what is the cumulative duration of the training?_____
37. Have you ever received any formal training in treatment of adolescents living with HIV?
(2) (If No, go to question 40) Yes [] (1) No []
38. If yes, go to question 37 above, approximately how many training sessions have you received?
39. If yes, go to question 37 above, what is the cumulative duration of the training?

Attitudes and opinions about paediatric and adolescent HIV (For All Healthcare Worker Respondents)

40. A child living with HIV can be effectively managed by HIV clinician whether or not that clinician has specific training on management of HIV-positive children
- a. Strongly agree 1
 - b. Agree 2
 - c. Disagree 3
 - d. Strongly disagree 4
 - e. No opinion 5
41. An adolescent living with HIV can be effectively managed by HIV clinician whether or not that clinician has specific training on management of HIV-positive adolescents
- a. Strongly agree 1
 - b. Agree 2
 - c. Disagree 3
 - d. Strongly disagree 4
 - e. No opinion 5
42. Children with HIV should ideally only be managed by an HIV-trained paediatrician because children are too complicated
- a. Strongly agree 1
 - b. Agree 2
 - c. Disagree 3
 - d. Strongly disagree 4
 - e. No opinion 5
43. Children/adolescents living with HIV deserve special treatment compared with adults
- a. Strongly agree 1
 - b. Agree 2
 - c. Disagree 3
 - d. Strongly disagree 4
 - e. No opinion 5
44. Anti-HIV drugs are too strong for a child's young body
- a. Strongly agree 1
 - b. Agree 2
 - c. Disagree 3
 - d. Strongly disagree 4
 - e. No opinion 5
45. The parents of an adolescent with HIV should be notified of the patient's status even without his/her consent
- a. Strongly agree 1
 - b. Agree 2
 - c. Disagree 3
 - d. Strongly disagree 4
 - e. No opinion 5
46. Pregnant adolescents with HIV attending an antenatal clinic should be used to illustrate to the rest of the antenatal clinic attendees why pre-marital sex should be avoided
- a. Strongly agree 1
 - b. Agree 2
 - c. Disagree 3
 - d. Strongly disagree 4

- e. No opinion 5
47. A sexually active 14-year-old female attending your clinic should be offered condoms
- a. Strongly agree 1
- b. Agree 2
- c. Disagree 3
- d. Strongly disagree 4
- e. No opinion 5
48. I will feel uncomfortable offering condoms to a sexually active 15-year-old female attending my clinic
- a. Strongly agree 1
- b. Agree 2
- c. Disagree 3
- d. Strongly disagree 4
- e. No opinion 5

Knowledge of paediatric and adolescent HIV (For clinicians only)

49. According to the 2013 WHO recommendations on management of children with HIV, HIV-positive children below 5 years of age should be commenced on ARVs once their CD4 count falls below 500 cells/mm³ True [](1) False [] (2)
50. According to the 2013 WHO recommendations on management of adolescents with HIV, HIV positive adolescents should be commenced on ARVs once their CD4 count falls below 500 cells/mm³ True [](1) False [] (2)

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For Questions 51–65, indicate whether the statement is true (1) or false (2)

51. Concerning HIV infections in children:
- a. When using CD4 estimation to monitor disease progression and treatment response in infants, it is better to use the absolute number rather than CD4 Cell percentage
- b. Virologic set-point occurs early in infection when CD4 cells are produced and the HIV virus is actively replicating
- c. The presence of HIV antibody in a child less than 12 months of age defines HIV infection
- d. Infection before 4 months of life increases HIV disease progression in infants
- e. Breastfeeding accounts for more than 50% of HIV transmission in children
52. Concerning paediatric HIV counselling and testing:
- a. For effective counselling all relevant information should be given at first contact or visit
- b. Counselling should not include nutritional support and growth monitoring
- c. It is right to test a critically ill child whose parent refuses to consent for HIV testing for the purpose of immediate clinical management
- d. Post-test counselling should be provided by the same care provider who conducted the pre-test counselling
- e. In provider initiated testing and counselling, HIV testing is offered to all in-patient and out-patients seen in health facilities
53. Regarding mother-to-child transmission (MTCT) of HIV
- a. More than 95% of paediatric HIV infections are due to MTCT of HIV
- b. All HIV infected women transmit HIV to their babies
- c. Sexually transmitted diseases increase risk of MTCT of HIV
- d. Babies are at risk of breast milk transmission of HIV only in the first 6 months of life
- e. Mixed feeding does not pose a higher risk for infants of HIV infected women
54. Ngozi was diagnosed with HIV during pregnancy and gave birth to a daughter 6 weeks ago. Today she brings her to the under-5 clinic for her first immunization visit. There is no access to virologic tests available at your clinic. In addition to giving her immunizations, what else should you do?
- a. Prescribe single-dose Nevirapine only

- b. Prescribe zidovudine for 6 weeks only
 - c. Prescribe Cotrimoxazole if her growth and development are appropriate
 - d. Prescribe Cotrimoxazole when the child is 3-month old
 - e. Developmental assessment should be performed at every visit
55. A 3-year-old HIV-infected child presents with lymphadenopathy, severe oral candidiasis and severe pneumonia. Her CD4 is 20%
- a. She has WHO stage II disease
 - b. She is severely immunosuppressed
 - c. Defer starting her on antiretroviral therapy
 - d. The priority here is to manage opportunistic infections first
 - e. Screen the child for tuberculosis
56. Regarding immunological and virological assessment
- a. A CD4 percentage of 12 in a 4-year-old girl is suggestive of severe immune-suppression
 - b. Advanced immunosuppression in a child less than 1 year is defined as CD4 percentage of 25–30
 - c. Severe immunosuppression in a child older than 5 years is defined as CD4 count < 200
 - d. At 1-year old with a CD4 count of 700 is not immunosuppressed
 - e. An HIV virologic test is necessary to make a diagnosis of HIV in children of all ages
57. In a TB/HIV co-infected child:
- a. There is an increased risk of developing primary progressive infection
 - b. Most diagnostic criteria would have high sensitivity and high specificity
 - c. It is possible to have a deteriorating clinical condition despite improving CD4+ count and suppression of viral load
 - d. If TB develops while a child is on AZT, NVP and 3TC a possible option is to substitute NVP with EFV or ABC
58. In management of opportunistic infections;
- a. Cotrimoxazole prophylaxis lowers the risk of *Pneumocystis jirovecii* pneumonia (PCP), toxoplasmosis, *Salmonella* species and malaria
 - b. LIP occurs in less than 5% of HIV-infected children
 - c. Prednisolone is useful in treating LIP
 - d. In a child with white patches in the mouth, retrosternal pain on swallowing, refusal of food and excessive salivation; oral nystatin should be the drug of choice
59. Aisha is a 3-year-old girl who was recently diagnosed with HIV infection in a private hospital. She has been having recurrent illness with pneumonia, oesophageal candidiasis and recurrent diarrhoea. Her weight is 10 kg with a CD4% of 15%. Aisha lives with her grandma as she lost her mother to HIV last year. The following statements are true:
- a. Aisha is in WHO clinical stage III
 - b. Prior to initiation of ART, identification of a secondary care giver is not desirable
 - c. The following regimen is best recommended as first line — AZT/3TC/NVP
 - d. The following regimen is best recommended as first line — D4T/3TC/NVP
60. Tayo is a 5-year-old boy with HIV infection and was started on ZDV/3TC/NVP about 6 weeks ago. The following statements are true:
- a. If his Hb is 7g/dL all his ARVs should be stopped
 - b. If his haemoglobin is 7g/dL, zidovudine should be substituted with an alternative drug
 - c. If he develops a severe rash all over his body, it should be treated with hydrocortisone and antifungals, and he should continue ART
 - d. If his mother reports that most of the time he vomits the ARV drugs, the ARVs should be withdrawn immediately
 - e. If after 6 months of ART with good adherence his CD4 has dropped, he should continue on the same ARV drugs
61. Supportive care for infected and affected children includes:
- a. Psychosocial support in homes and communities

- b. Disclosure to all children at the age of 5 years
- c. Administration of BCG vaccine to all HIV-exposed infants
- d. Administration of measles vaccine twice at 6 and 9 months to all HIV infected/exposed children
- e. Basic essential services identified by the National Plan on Action on OVC focuses on health and psychosocial support only

62. About Nutrition and HIV

- a. Exclusive breastfeeding for the first 3 months of life is an option for babies of HIV-infected mothers
- b. Breast milk substitutes can be used if AFASS, which means affordable, feasible, adaptable, secure and safe
- c. Low birth weight is a common manifestation of HIV in the new born
- d. Nausea in HIV infected children may be managed with feeding small meals frequently and the avoidance of high fat and greasy diets
- e. A 3-year-old weighing 11 kg is well nourished

63. The following statements are true about the care of adolescents with HIV and AIDS

- a. Adherence to care and treatment can be a challenge
- b. Relationship with peers and family is developmental stage dependent
- c. Obtaining consent for medical treatment is easy
- d. Are unable to appreciate the long-term implications of diseases
- e. They often lack social skills

64. Concerning care of adolescents with HIV:

- a. Those in Tanner Stages 1 & 11 are managed using paediatric ARV guidelines, while those in stages 111 and above are managed using adult ARV guidelines
- b. Pill burden and lifestyle may be barriers to adherence
- c. Having treatment partners may not be useful to adolescents
- d. Life skills training should be part of any adolescent care program
- e. Developing self-awareness and managing emotions are components of life skills

65. The minimum health services package for paediatric HIV and AIDS care should include the following:

- a. Confirmation of HIV status as early as possible
- b. Advocacy to policy makers
- c. Monitoring growth and development
- d. Diagnosis and early treatment of other infectious (Malaria, TB and ARI)
- e. Appointment of a paediatrician for paediatric OPD care.

Knowledge of paediatric and adolescent HIV (For All Healthcare Workers except Clinicians)

66. According to the 2013 WHO recommendations on management of children with HIV, HIV-positive children below 5 years of age should be commenced on ARVs once their CD4 count falls below 500 cells/mm³ True [](1) False [](2)

67. According to the 2013 WHO recommendations on management of adolescents with HIV, HIV- positive adolescents should be commenced on ARVs once their CD4 count falls below 500 cells/mm³ True [](1) False [](2)

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For Questions 68–75, indicate whether the statement is true (1) or false (2)

68. Concerning paediatric HIV counselling and testing:

- a. For effective counselling all relevant information should be given at first contact or visit
- b. Counselling should not include nutritional support and growth monitoring
- c. It is right to test a critically ill child whose parent refuses to consent for HIV testing for the purpose of immediate clinical management
- d. Post-test counselling should be provided by the same care provider who conducted the pre-test counselling
- e. In provider initiated testing and counselling, HIV testing is offered to all in-patient and out-patients seen in health facilities

69. Regarding mother-to-child transmission (MTCT) of HIV
- More than 95% of paediatric HIV infections are due to MTCT of HIV
 - All HIV infected women transmit HIV to their babies
 - Sexually transmitted diseases increase risk of MTCT of HIV
 - Babies are at risk of breast milk transmission of HIV only in the first 6 months of life
 - Mixed feeding does not pose a higher risk for infants of HIV infected women
70. Ngozi was diagnosed with HIV during pregnancy and gave birth to a daughter 6 weeks ago. Today she brings her to the under-5 clinic for her first immunization visit. There is no access to virologic tests available at your clinic. In addition to giving her immunizations, what else should you do?
- Prescribe single-dose nevirapine only
 - Prescribe zidovudine for 6 weeks only
 - Prescribe Cotrimoxazole if her growth and development are appropriate
 - Prescribe Cotrimoxazole when the child is 3 months
 - Developmental assessment should be performed at every visit
71. Supportive care for infected and affected children includes:
- Psychosocial support in homes and communities
 - Disclosure to all children at the age of 5 years
 - Administration of BCG vaccine to all HIV-exposed infants
 - Administration of measles vaccine twice at 6 and 9 months to all HIV infected/exposed children
 - Basic essential services identified by the National Plan on Action on OVC focuses on health and psychosocial support only
72. About Nutrition and HIV
- Exclusive breastfeeding for the first 3 months of life is an option for babies of HIV-infected mothers
 - Breast milk substitutes can be used if AFASS, which means affordable, feasible, adaptable, secure and safe
 - Low birth weight is a common manifestation of HIV in the new born
 - Nausea in HIV-infected children may be managed with feeding small meals frequently and the avoidance of high fat and greasy diets
 - A 3-year-old weighing 11 kg is well nourished
73. The following statements are true about the care of adolescents with HIV and AIDS
- Adherence to care and treatment can be a challenge
 - Relationship with peers and family is developmental stage dependent
 - Obtaining consent for medical treatment is easy
 - Are unable to appreciate the long-term implications of diseases
 - They often lack social skills
74. Concerning care of adolescents with HIV:
- Those in Tanner Stages I & II are managed using paediatric ARV guidelines, while those in stages III and above are managed using adult ARV guidelines
 - Pill burden and lifestyle may be barriers to adherence
 - Having treatment partners may not be useful to adolescents
 - Life skills training should be part of any adolescent care program
 - Developing self-awareness and managing emotions are components of life skills
75. The minimum health services package for paediatric HIV and AIDS care should include the following:
- Confirmation of HIV status as early as possible
 - Advocacy to policy makers
 - Monitoring growth and development
 - Diagnosis and early treatment of other infectious diseases (malaria, TB and ARI)

- e. Appointment of a paediatrician for paediatric OPD care

Thank you for your time.

Annex 3: Key Informant Interview (KII) Training Guide for State Officials

Name of the State Official _____

Position _____

Qualification _____

Sex _____

Age _____

Tell us about how HIV+ children and adolescents are managed in this State

Probing questions:

- a. Do you have special arrangements for conducting HCT for children?
- b. In this facility do you have special clinic for managing children and adolescents with HIV
- c. In this facility are there areas of children and adolescents HIV care that may require improvements in your perception
- d. What are some of the challenges you have encountered with managing children and adolescents living with HIV?
- e. Are there paediatricians in this state?
- f. If yes have these paediatricians received additional training on managing children and adolescents with HIV
- g. Is there any particular support you may require to improve the management of children and adolescents living with HIV?
- h. Are there any skills gap that you have observed among your staff working with children and adolescents living with HIV?
- i. Are there any knowledge gap that you have observed among your staff working with children and adolescents living with HIV?
- j. How do you train your staff on children living with HIV and who does the training for you?

Annex 4: Key Informant Interview (KII) Training Guide for Facility ART Clinic In-charge

Name of the Health Provider _____

Name of the Health Facility _____

Position _____

Qualification_____

Sex_____

Age_____

Tell us about how HIV+ children and adolescents are managed in this facility

Probing questions:

- a) Do you have special arrangements for conducting HCT for children?
- b) In this facility do you have special clinic for managing children and adolescents with HIV
- c) In this facility are there areas of children and adolescents HIV care that may require improvements in your perception
- d) What are some of the challenges you have encountered with managing children and adolescents living with HIV?
- e) Are there paediatricians in this facility?
- f) If yes have these paediatricians received additional training on managing children and adolescents with HIV
- g) Is there any particular support you may require to improve the management of children and adolescents living with HIV?
- h) Are there any skills gap that you have observed among your staff working with children and adolescents living with HIV?
- i) Are there any knowledge gap that you have observed among your staff working with children and adolescents living with HIV?
- j) How do you train your staff on children living with HIV and who does the training for you?



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