

**ENHANCING ANTIRETROVIRAL THERAPY ADHERENCE AMONG  
THE YOUTH AT MBAGATHI DISTRICT HOSPITAL**

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MANAGEMENT) OF THE UNIVERSITY OF NAIROBI**

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**DECLARATION**

This report is my original work and has not been presented for a degree in any other University.

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**SUPERVISOR APPROVAL**

This report has been submitted for examination with my approval as University supervisor.

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## **LIST OF ABBREVIATIONS**

AIDS	Acquired Immunodeficiency Syndrome
ART	Anti-retroviral Therapy
CCC	Comprehensive Care Centre
CME	Continuous Medical Education
HIV	Human Immunodeficiency Virus
HAART	Highly Active Antiretroviral Therapy
KNH	Kenyatta National Hospital
MDH	Mbagathi District Hospital
OCA	Organizational Capacity Assessment
OTZ	Operation Triple Zero
PMTCT	Prevention of Mother to Child Transmission
VL	Viral Load
UoN	University of Nairobi
UHIV	University of Nairobi HIV Capacity Building Fellowship

## **DEFINITION OF TERMS**

**Anti-retroviral therapy:** This is the use of medicines (Antiretroviral drugs) to treat HIV infection. ART is recommended for everyone who has HIV. ART helps people living with HIV live longer, healthier lives and reduces the risk of HIV transmission.

**Treatment adherence:** This is the degree to which an individual's behavior corresponds with the agreed recommendations from a health care provider. Poor adherence to prescribed regimens can result in serious health consequences.

**Youth:** Youth is best understood as a period of transition from the dependence of childhood to adulthood's independence. The United Nations, for statistical purposes, defines 'youth' as those persons between the ages of 15 and 24 years.

**Comprehensive Care Centre:** This is a site where people living with HIV/AIDS go for holistic care and management. It has a team of workers that lead to success of the services provided in the centre. This team includes; doctors, nurses, nutritionists, pharmacist, physiotherapist, counsellors, laboratory technicians, public health officers and occupational therapists.

**Viral suppression:** This is a situation whereby ART reduces a person's viral load (HIV RNA) to an undetectable level (less than 1000 copies per mL of blood). Viral suppression does not mean HIV is cured. If ART is stopped, the person's viral load will return to a detectable level.

## **PROJECT SUMMARY**

Mbagathi District Hospital is one of three hospitals in Nairobi County. It provides several preventive and curative services. The comprehensive care centre provides antiretroviral therapy to several clients who include approximately three hundred youth. Youth is a challenging period whereby high-risk sexual behaviour is common and this can lead to lack of engagement with healthcare services leading to poor adherence to antiretroviral therapy. The issue of non-adherence among the youth was raised during the organizational capacity assessment and this was evident by the high viral load results among the youth. The objective of the project was to improve adherence to HIV treatment among youth at the hospital. This was imperative because viral suppression is key in the reduction of new HIV infections and it also contributes to the achievement of the second and third UNAIDS targets. The project adopted HIV services that were youth friendly in a bid to increase adherence. Similarly, selected youth undertook capacity building in peer counseling/mentorship. Treatment literacy was employed in the form of a standard training manual which was converted into an App. As expected, the youth were more open to discuss their health issues with their peers and the adoption of the best practices was more acceptable to the youth. Clinicians were encouraged to take up UoN online short courses and embrace CMEs to increase their knowledge on HIV care and service delivery. The project employed verbal and written communication strategies. Baseline and summative viral load statistics were used to monitor the successful implementation of the project. Progress reports were generated and shared with all stakeholders.



## 1.0 INTRODUCTION AND BACKGROUND

Mbagathi District Hospital (MDH) was built in the 1950's. The aim was to offer health services for infectious diseases that required isolation such as Tuberculosis and Leprosy. The initial name was "Infectious Diseases Hospital" (IDH) under the then "King George VI Hospital," which is presently Kenyatta National Hospital (KNH). The hospital was under KNH until 1995 when it curved and transformed into an autonomous District Hospital in Nairobi. Currently, it serves a population of more than 1 million people and has a 364 bed capacity. It offers the following services: New Born Unit, Surgical Unit, Growth Monitoring and Promotion, Maternity Ward and Outpatient Services which include: Antenatal, Dental Clinic, Physiotherapy, Eye Clinic, Antiretroviral Therapy, Family Planning, HIV Counselling and Testing, Tuberculosis diagnosis, Laboratory and Radiology Services (e.g. X-ray, Ultra Scan, MRI, etc.).

There are 36 million people living with HIV in the world three decades into the HIV/AIDS epidemic with five million of them aged between 15 and 24 years. Adolescents and youth (12–24 years) account for over 40% of HIV incidence globally. Kenya comes in third in the highest HIV incidence among the youth in the East and Central African region. (NACC, 2015). It also has the second highest number of young people living with HIV/AIDS. In order to attain viral suppression, thwart the development of resistant strains, and decrease disease transmission, progression and death, high levels of adherence are necessary. The frequently used indicator for adherence is viral load (VL). VL results of  $\geq 1000$  copies/ml is a strong indicator of non-adherence to ART although this could be due to drug failure as a result of prolonged use of ART.

An Organizational Capacity Assessment (OCA) for MDH was conducted using a participatory approach where the staff and other stakeholders took part. The Organizational Capacity

Assessment Tool was employed for purposes of data collection. Several organizational domains were assessed including Programme Management. According to the OCA Report, viral suppression targets at the Comprehensive Care Centre (CCC) were not met. This was especially low among the youth and was evident by their high viral load results. There were no peer counselors/mentors in place and as a result there were no peer advocacy campaigns. Similarly, HIV program interventions were not always informed by data from the CCC. The linking of clients from Outpatient or HIV Testing & Counselling service points was not efficient and this resulted in delayed treatment plans. The Ministry of Health staff at the CCC were most of the times not involved in the planning of HIV/AIDS activities and this caused some friction with the staff employed by the partner. There were only a few health workers who had received capacity building on HIV care. Standard Operating Procedures at the HIV clinic were not regularly monitored and this impacted on service delivery. There were limited resources to sustain new programs introduced to address emerging needs for example teens and youth activities. In view of these, there was need for strategies to be put in place to address these gaps and bring the youth on board with regard to ART adherence.

## **1.1 STATEMENT OF THE PROBLEM**

According to statistics from the National Aids Control Council (NACC), there are 238,987 young people between the ages of 15 to 24 years living with HIV. By the end of 2015, a total of 171,510 people were living with HIV in the Nairobi County, with 14% being young people aged 15-24 years. The Nairobi City County HIV & AIDS Strategic plan notes that the viral suppression among the youth stands at 59%. Youth is at times characterized by high-risk sexual behaviour and a lack of engagement with healthcare services that can affect adherence to antiretroviral therapy (ART).

MDH has approximately 300 youth (15-24yrs) on ART. Viral load suppression for this group was 63% for the year 2016. Between 2016 and 2017, 40% of the youth initiated on care were lost to follow up. The youth do not feel free to share their issues with clinicians and counselors who are much older than them for fear of being condemned. Similarly, the counseling approach used is ‘old school’ and fails to attract the youth who would prefer interactive modern sessions that are appealing to them. Those in schools also do not adhere to the treatment regime for fear of stigmatization from their peers. The youth also lack peer mentors/counselors and exposure to peer advocacy campaigns to encourage them in their journey towards viral suppression.

The CCC operates from 8am to 4pm on weekdays only. For the youth who go to work or are in colleges, the operating hours are not friendly to them as most would prefer to come to the clinic in the evenings or over the weekends. As a result, some tend to miss their appointments due to their work schedules. Ignorance and poor attitude to ART also contributes to non-adherence as well as lack of disclosure of their HIV status to their families and friends. On the other hand, there are only a few clinicians who have received capacity building on HIV care, service delivery and youth friendly HIV services.

## **1.2 PROJECT OBJECTIVES**

### **1.2.1 Goal**

- Contribute to achieving the 2<sup>nd</sup> and 3<sup>rd</sup> UNAIDS targets whereby 95% of people who know their HIV status will be on treatment and 95% of all people receiving antiretroviral therapy will have achieved viral suppression by 2030.
- Contribute to the Kenyan led operation triple zero program (OTZ) meaning zero missed appointments, zero missed drugs and zero viral load. It targets adolescents and young people living with HIV.

### **1.2.2 Purpose**

To improve antiretroviral therapy adherence among the youth living with HIV at Mbagathi District Hospital CCC.

### **1.2.3 Research questions**

1. How can be the retention in HIV care and treatment among the youth be increased?
2. What can be done to increase the viral load suppression among the youth?
3. What can be done to increase the uptake of the treatment literacy program among the youth?

### **1.2.4 Specific objectives**

1. To increase retention in HIV care and treatment from 60% to over 70%.
2. To increase viral load suppression among the youth from 63% to over 70%.
3. To increase the uptake of treatment literacy program among the youth.

### **1.2.5 Deliverables**

- Treatment literacy toolkit (treatment literacy App and training manual).
- Peer counselors/mentors.
- Youth friendly programs initiated.
- Youth peer advocacy campaigns launched.
- Informed youth on the importance of adherence to ART.
- Clinicians completing the University of Nairobi (UoN) online short courses.
- Clinicians with increased knowledge on HIV services that were appealing to the youth.

### **1.3 JUSTIFICATION/SIGNIFICANCE**

For us to achieve the 2<sup>nd</sup> and 3<sup>rd</sup> UNAIDS targets as well as the OTZ goals, strategies need to be put in place to ensure that all eligible youth not only receive ART, but are retained in HIV care and treatment and adhere to their medication. Viral suppression is essential for improving the health outcomes and wellness of people living with HIV.

In order for us to achieve Kenya Vision 2030 target of having zero new HIV infections in the year 2030, it is imperative that viral suppression be attained especially among the youth who are sexually active. According to the Kenya AIDS Strategic Framework (KASF) strategic direction 1, there is need to reduce new HIV infections especially among key populations like the youth. The HIV epidemic can only be broken down if there is viral suppression which is achieved by adherence to ART.

Based on the OCA report, the hospital is facing the challenge of the non-adherence to HIV treatment among the youth which is evident by the low viral suppression rate. It was recommended that evidence based programs be developed targeting the youth including initiating peer advocacy campaigns so as to achieve treatment adherence and as a result high viral suppression among the youth. Similarly, there is need to build capacity of peer counselors and design youth friendly programs. It is imperative to conduct Continuous Medical Education (CMEs) and capacity building for the clinicians so as to increase knowledge on HIV care and service delivery. Likewise, benchmarking with other facilities that are running successful youth programs was recommended for purposes of learning ways of improving adherence.

This project is therefore necessary so to address this issue. The project will put in place various strategies like treatment literacy toolkit, encourage peer mentorship and integrate youth friendly health services at the CCC so as to encourage more youth to adhere to their ART treatment. Successful implementation of this project will result in increased uptake of ART

among the youth and thus enhanced viral suppression. This will in turn reduce the number of new HIV infections. Adherence to ART will also reduce the cases of treatment failure and drug resistance among the youth leading to saving treatment costs and improving health outcomes. Reduction in new HIV infections will save the dwindling healthcare resources and ensure that there are enough resources for those in need of ART. MDH will in the long run have a model youth friendly CCC which will serve as a benchmark for other hospitals.

## **2.0 LITERATURE REVIEW**

The HIV/AIDS pandemic is one of the major health problems witnessed globally. There is disproportionate distribution of the disease though with the highest prevalence being seen in sub-Saharan Africa. HIV stands for Human Immunodeficiency Virus. It is a retrovirus belonging to the lentivirus group. If HIV is not treated, it leads to acquired immunodeficiency syndrome (AIDS). AIDS results in a gradual and persistent decline and failure of the immune system resulting in heightened risk of life threatening infections and cancers. The introduction of highly active antiretroviral therapy (HAART) for treating HIV offered a glimmer of hope to patients infected with the virus.

There are approximately 36.7 million people worldwide who are currently living with HIV, of which 52% reside in sub-Saharan Africa. Decreasing the impact of the HIV epidemic necessitates the prevention of further transmission as well as treatment for those already living with HIV. Antiretroviral therapy is highly effective in suppressing viral replication, reducing the amount of virus in the blood to undetectable levels and slowing the progress of HIV. (Roser & Ritchie, 2019).

The global roll-out efforts has resulted in an increase in the number of people living with HIV who are receiving ART by a third since 2013. In the year 2015 about 17 million people received ART globally. (Heestermans, Browne, Aitken, Vervoort & Klipstein-Grobusch, 2016). However, the use of HAART has led to progressively complex drug regimens which causes noteworthy challenges to both patients and clinicians with respect to adherence.

Patients with chronic diseases generally tend to have low adherence to medication. As opposed to other chronic diseases, HIV warrants a high degree of adherence (more than or equal to 95%) due to the capability of the virus to rapidly replicate and effortlessly mutate. Therefore, adherence is crucial to the success of ART in upholding viral suppression, diminishing the

threat of drug resistance and decreasing the risk of HIV transmission. This in turn leads to a reduction in HIV related morbidity and mortality. ("Challenges to Adherence | Help Stop The Virus Pro", 2019). The high degree of adherence required presents a distinctive treatment challenge for patients with HIV. The drug regimens in HIV treatment usually remain ineffective after a treatment interruption unlike in other chronic diseases.

Health behaviors like retention in HIV treatment and adherence to ART, pose major challenges when it comes to reducing new HIV infections and improving health outcomes. The term “retention in care” refers to the process of continuous participation in HIV treatment, while medication adherence refers to the degree to which an individual's behavior (taking medications) corresponds with the recommendations from the clinician. Poor adherence is the major reason behind treatment failure.

In order to come up with strategies to improve retention and adherence, it is necessary to first of all understand the barriers and facilitators to these behaviors. The Andersen's Behavioral Model of Health Service Use offers a conceptual framework for grasping how patient and environmental factors contribute to health behaviors and outcomes, which in turn can inform the design of intervention approaches. (Holtzman, Brady & Yehia, 2015).

A number of factors influence retention in care and treatment adherence among persons with HIV. They comprise of patient predisposing factors (e.g. mental illness, substance abuse, age, number of pills, side effects, food restrictions), patient enabling factors (e.g. social support, reminder strategies, medication characteristics, transportation, housing, insurance), and health care environment factors (e.g. pharmacy services, clinic experiences, provider characteristics).

According to Ankrah et al., 2016, 83% of the total number of adolescents (people aged between 10 and 19 years) living with HIV reside in sub-Saharan Africa. Adolescents and young people generally face a number of challenges as they transition to adulthood. The additional burden of



having a chronic disease like HIV further puts a strain on the already burdened adolescents and youth.

In a study carried out by MacCarthy et al., 2018, four obstacles to ART adherence among adolescents and youth emerged i.e. poverty, school attendance, family support and pill burden. Poverty hinders the capacity to purchase food and weakened their attempts towards achieving economic independent in their transition from adolescence to adulthood. Similarly, several multi-country studies have documented that despite free provision of ART, other related costs (e.g., transport, lost wages due to time spent seeking healthcare) posed a significant barrier to ART adherence.

On the other hand, school attendance limited their privacy. It was difficult to take the antiretroviral drugs without raising the suspicion of the other students. Therefore, this further disrupted adherence to ART. Majority of the study participants cited that family support was erratic. Most of the times they grappled with an endless change in guardianship because they had lost their biological parents to HIV. On the contrary, peer support, especially among HIV-positive youth, was effective and produced a significant network in supporting adherence to ART. The burden of having to take multiple medications daily irritated the youth, often resulting in the so-called 'drug holidays'. The issue of disclosure played a significant role in three of the four barriers.

Similar studies by Ankrah et al., 2016 noted that in general, adherence among adolescents to chronic medication was lower in comparison with younger children or adults mainly due to the transition process of this group. Age was reported as a determinant for adherence, with better adherence seen in older patients (above 35 years) compared with the younger ones. (Heestermans, Browne, Aitken, Vervoort & Klipstein-Grobusch, 2016)

### **3.0 PROJECT IMPLEMENTATION METHODOLOGY AND MANAGEMENT PLAN**

#### **3.1 Key institutional issues addressed**

The project mainly addressed non-adherence to ART among the youth clients at the CCC. The purpose of the project was to identify and address the factors that may be causing non-adherence to ART among the youth.

Peer counselors/mentors were selected by the youth together with the clinicians at the CCC. They went through capacity building so as to reach more of their peers in a way that only they can. They were tasked with identifying peers who are non-adherent to ART and mobilizing them through peer advocacy campaigns to come to the clinic for ART.

The capacity of clinicians at the CCC was built with regard to HIV services that were youth friendly so that they can offer acceptable services to this particular group of patients. This was achieved through CMEs conducted partly through the UoN online short courses and via other means.

A treatment literacy toolkit was developed which was used to strengthen youth programs at the CCC. It included a treatment literacy App (Kuwa Smart) which was developed so as to provide current information concerning treatment regimens. A training manual was also included in the toolkit and this was used to build capacity of the youth during their monthly meetings. The contents of the manual include self-acceptance, disclosure, treatment adherence, drug resistance, safer sexual practices etc.

#### **3.2 Project activities**

During the monthly youth meetings which take place on the last Saturday of the month, the youth were introduced to the mission of the UoN HIV Capacity Building Programme (UHIV)

at MDH CCC. The youth were then asked to select members from amongst themselves whose capacity was built to be peer counselors/mentors and who were tasked with spearheading the peer advocacy campaigns.

A treatment literacy toolkit was developed and it included an App and a training manual. Input was sought from the stakeholders who included the clinicians and the youth. Capacity building was conducted on a monthly basis by the peer counselors/mentors together with the clinicians.

Clinicians were also be encouraged to take up UoN online short courses and embrace CMEs to increase their knowledge on HIV care and service delivery.

### **3.3 Roles and responsibilities**

The CCC team (Clinicians, UHIV fellow and peer counselors/mentors) were tasked with sending reminders to the youth of the monthly meetings through SMS. Similarly, it was their responsibility to find a venue for the meetings and prepare the equipment needed e.g. projectors etc.

The youth with assistance from the CCC team selected their peers who went through capacity building as peer counselors/mentors. Peer counselors/mentors spearheaded the peer advocacy campaigns targeting their fellow youth and especially the ones that were lost to follow-up and those with high viral loads.

The UHIV fellow was tasked with liaising with the Director, Mentoring for Life for capacity building of the selected youth and the overall smooth running of the project. The treatment literacy toolkit was also developed by the UHIV fellow with input from the CCC team and the youth for the purposes of capacity building during the monthly meetings.

### **3.4 Implementers, Partners and Beneficiaries (Stakeholders)**

The primary implementer of the program was the UHIV fellow who designed the program. Secondary implementers included the CCC team who were expected to implement HIV services that were youth friendly after undertaking UoN online short courses. The peer counselors/mentors implemented the peer advocacy campaigns after their capacity building sessions by Mentoring for Life. The CCC team and the youth were involved in the design and implementation of the treatment literacy toolkit through suggesting topics to be included in the training manual and the App.

The partners of this project were Mentoring for Life who were involved in the capacity building of the peer counselors and the UoN who offered the online short courses to all the staff at the facility who were interested.

The primary beneficiaries of the project were all the youth who attend MDH CCC because they were counseled and motivated by their peers. They also received treatment literacy through channels that were youth friendly like a user friendly App. They also received youth friendly HIV services from the clinicians.

MDH was a secondary beneficiary because it served as a model for benchmarking purposes once HIV services that were youth friendly were adopted. The community was also a secondary beneficiary because once the youth adhered to ART, they would achieve viral suppression and thus reduce the chances for new infections. Eventually, this will in turn lead to a diminished need for resources required for ART.

### **3.5 Communication strategies/plans/processes**

The project mostly used verbal communication strategies. During the monthly meetings, treatment literacy was done through verbal communication from the peer counselors/mentors

to the youth. The treatment literacy App served as a form of visual communication with the youth able to access information whenever they needed it. The training manual served as a form of written communication.

The youth got reminders of the monthly meeting through SMS. The partners (Mentoring for Life & UoN) received official communication from the project team through verbal communication in the form of phone calls as well as written communication through emails and reports.

Progress reports were generated after every meeting and the same was communicated to the stakeholders. Written communication channels were employed to give feedback concerning the project to the hospital administration.

### **3.6 Documentation process**

Minutes for each of the monthly meeting were generated and stored in both hard and soft copy. Attendance sheets were used to capture the details of the youth at the monthly meetings. Youth expectations with regard to the content of the treatment literacy App and the training manual were recorded in a note book. Monthly reports detailing the progress of the project were generated in soft and hard copies. These were shared with the concerned parties. Incurred expenses were documented with receipts.

### **3.7 Risks, assumptions and challenges**

The risk that the project faced involved funding whereby there were a number of delays. Similarly, there were budget cuts and this meant that the funds were not being sufficient to cater for all the project's activities. The project assumed that the youth who were taken through capacity building as peer counselors/mentors would be readily available to mentor their peers. The youth were also expected to embrace the treatment literacy programme and as a result,

adhere to their medication and achieve viral suppression. Only one of the two medium term fellows completed their training. The one who completed her training had to proceed to maternity leave during project implementation and thus missed quite a lot.

### **3.8 Sustainability plan**

A grant proposal seeking additional funding to support the program was completed and sent to potential donors. The youth whose capacity has been built as peer counselors/mentors continued to offer counseling/mentorship services to their peers. 14 out of the 15 peer counselors/mentors joined the CCC from the PMTCT program since they were born with the virus. Since they have been getting their ART from MDH from the time they were children, it is highly unlikely that they will change clinics any time soon. Peer advocacy campaigns were spearheaded by the peer counselors/mentors. The youth were able to open up more freely because they were dealing with their peers and because they were sailing in the same boat.

The treatment literacy manual was kept by the officer in charge at the CCC and the treatment literacy program continued during the monthly youth meetings to motivate the youth and encourage them in their journey towards adherence. Progress reports were generated and documented on a monthly basis and the same was communicated to all the stakeholders. The clinicians at the CCC having gone through the UoN online short courses offered HIV services that were youth friendly. They were able to cascade to other staff the lessons learnt.

#### **4.0 PROJECT MONITORING AND EVALUATION**

For purposes of proper evaluation, baseline statistics were collected from the CCC i.e. the percentage of youth that had suppressed viral loads (<1000copies/ml) at the start of the project and at the end of the project. Similarly, clinic attendance for the youth was monitored and missed appointments were noted. The percentage of youth attending the peer counseling and the treatment literacy sessions was monitored. Pharmacy refill logs for the youth were also monitored and this gave an indication as to whether the youth were actually collecting their drugs and moving towards achieving the OTZ goals.

The peer counselors/mentors were continuously monitored to ensure that they adhered to the training given. This was done with the assistance of the facilitators from Mentoring for Life. The percentage of youth who were counseled by the peer counselors/mentors and who demonstrated marked improvement in ART adherence served as a means of monitoring the effectiveness of the peer counselors/mentors. Positive feedback from the youth counseled by their peers served as an indication of the effectiveness of the peer counselors/mentors.

Before the monthly meetings, there was a recap session of the previous month's capacity building and this monitored whether the youth who had attended the treatment literacy sessions received and retained the information shared. Pre and post-training questionnaires were given to the youth before and after the treatment literacy sessions and this was able to assess new information acquired by the youth.

Clinicians' adherence to HIV services that were youth friendly was monitored. The clinicians had monthly meetings where they discussed the implementation of the lessons learnt as well as seeking clarification on issues which were not clear. Successful completion of the UoN short courses and other CMEs served as a means of monitoring the increased knowledge of the clinicians.

## 5.0 RESULTS

A total of 15 youth who were selected by their peers and the youth coordinator were trained and received certification as peer counselors. The training covered a range of topics which included:

- Roles and responsibilities of peer educators
- HIV and reproductive health basics
- Antiretroviral therapy
- Pediatric HIV
- Communication and counselling skills
- Healthy relationships, stigma, discrimination and disclosure
- Identifying and tracing people who do not return to the clinic
- Community outreach, home care, education and linkages
- Gender based violence
- Nutrition

After the capacity building, trained peer counselors/mentors spearheaded the peer advocacy campaigns where they reached out to fellow youth who were lost to follow up through phone calls and home visits. They also provided the much needed peer to peer counselling. It is hoped that eventually, the Kenyan led operation triple zero program (OTZ) will be achieved. The viral load suppression for the year 2018 increased to 70%. 15% of the youth who were lost to follow up resumed the ART treatment.

A treatment literacy toolkit was developed and it included an App and a training manual. The App “Kuwa Smart” is available on Google Play Store and can be freely downloaded on the mobile phone. The contents of the treatment literacy toolkit include:



- HIV Background
- Antiretroviral Therapy
- Sexually transmitted Infections and Opportunistic Infections
- Sexual and Reproductive Health
- HIV and Nutrition
- Exercises
- Counselling in HIV & AIDS

The App was launched in April, 2019 during the Youth Day at the facility and the youth were able to download the App on their phones. It was welcomed positively by the youth who are technophiles. The App eased access of information for close to 300 youth at the CCC. With Kenya leading the continent in terms of smartphone penetration and internet usage, m-health solutions are an important asset in curbing health challenges.

The training manual was given to the clinicians and they adopted it as the standard manual which was used to provide treatment literacy to the youth during their monthly meetings. Similarly, the clinicians, having completed the UoN online short courses were able to gain increased knowledge and thus offered HIV services that appealed to the youth friendly.

## 6.0 PROJECT IMPACT

The implemented project led to the development of a treatment literacy toolkit which included a treatment literacy App, and a training manual. The App was well received by the youth in this digital age. This meant that the youth could easily access various information including anti-retroviral therapy, sexual and reproductive health, relationships, positive living etc. The end result of this was that the youth were more informed on the importance of adherence. Similarly, 15 youth from the facility went through capacity building as peer counselors/mentors and thereafter they were tasked with championing the peer advocacy campaigns where they counselled and motivated their fellow youth on upholding ART in order to achieve viral suppression and thus reduce the number of new infections.

In the long run, the above project outputs are expected to lead to the following outcomes

- Increased uptake of ART among the youth.
- Increased retention in HIV care and treatment among the youth.
- Increased viral load suppression rates among the youth.
- Increased uptake of the treatment literacy program among the youth.

The overall project impact is as follows:

- To contribute to the 2<sup>nd</sup> and 3<sup>rd</sup> UNAIDS targets whereby 95% of people who know their HIV status will be on treatment and 95% of all people receiving antiretroviral therapy will have achieved viral suppression by 2030.
- Contribute to the OTZ goals whereby there will be zero missed appointments, zero missed drugs and zero viral load among the adolescents and young people living with HIV.
- Contribute to reduction in the number of new HIV infections.

## **7.0 ETHICAL ISSUES**

Informed consent was sought from all the youth who participated in the development of the treatment literacy toolkit. Participation in the other project activities was purely on voluntary basis and no form of coercion was employed. Trained peer counselors were taken through confidentiality protection training as part of their curriculum. Data collected was used for the sole purpose of the project.

## **8.0 LESSONS LEARNT**

The most important lesson learnt during the implementation of this project was the necessity of a bottom-up decision making approach as opposed to the top-down decision making approach. This project gap was identified during the Organizational Capacity Assessment which was conducted by Management Sciences for Health. All departmental heads at the institution took part in the process. All the stakeholders were involved in the identification of this project gap. Similarly, the project beneficiaries were involved in the development of the project tools. This approach is important because it facilitates the ownership of the project.

Another important lesson learnt is that there is a lot of power in Information Technology which can be tapped by other fields so as to come up with innovative digital solutions. This project embraced the power held by mobile technology to come up with an App. This greatly improved the access to the treatment literacy information. This was projected to lead to increased uptake of ART, increased retention in HIV care and treatment and as a result, increased viral suppression among the youth.

Dealing with the youth requires a lot of care and sensitivity. Youth, the transition from childhood to adulthood is a period that provides a number of challenges to an individual. Therefore, it is important to understand the youth and the challenges they face so as to be in a position to assist them. Majority of the youth at the facility were initiated on ART as children meaning that they were born with the virus. It is necessary for project implementers to avoid a judgmental attitude towards the youth as they could be suffering the consequences of other people's actions. Similarly, it is imperative to get the input of the youth when designing projects that are meant to benefit them for ownership purposes.

Another important lesson learnt is the importance of peer to peer support. When a group of individuals with similar characteristics face a challenging situation, they are best placed to

reach out to their fellow peers since they understand best the magnitude of the challenging issue at hand. For example for a youth living with HIV, peer support from another youth also living with the virus can be more helpful than the theoretical words of a counsellor who might not be living with HIV or who might be in a different age group and thus not quite understand the challenges faced by the youth.

Finally, working as a team achieves much more than running an individual race. When roles are shared among the project team, synergy is created leading to a smooth running of the project.

## **9.0 CONCLUSION**

- The project was able to build the capacity of fifteen youth who were trained as peer counselors/mentors.
- The trained peer counselors/mentors spearheaded the peer advocacy campaigns.
- Viral load suppression increased from 63% to 70%.
- 15% of the youth who were lost to follow up resumed ART.
- A treatment literacy kit was developed which included a training manual and a treatment literacy App.
- Clinicians, having completed the UoN online short courses were able to gain increased knowledge and thus offered HIV services that were youth friendly.

## **10.0 RECOMMENDATION**

In order to achieve the overall project impact, the following measures are recommended:

- It is imperative that the hospital management reaches out to potential donors or partners so as to sustain the project financially.
- The hospital management should have a clear hand over strategy so that new staff are brought to speed with the implementation status of the project for purposes of continuity.
- Newly enrolled youth should be made aware of the treatment literacy App and be encouraged to get as much information as they can from it. Similarly they should also participate in the monthly meeting so as to get the much needed support especially during the initial stages.
- The youth should engage in income generation activities so that they are able to fund their activities like the monthly meetings.

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## **APPENDIX I: YOUTH CAPACITY BUILDING PROGRAMME**

The youth were taken through a three day capacity building by Mentoring for Life. The team was led by Nancy Ngetha, a senior nursing officer and counsellor based at the Kenyatta National Hospital Youth Centre. The following concerns were raised by the youth prior to the training:

- Viral suppression among the youth
- Reduction in new HIV infections
- Stigma attached to people living with HIV
- Drug and substance abuse
- Relationships among the youth
- Treatment adherence among the youth

The training covered the following topics:

- Roles and responsibilities of peer educators
- HIV and reproductive health basics
- Antiretroviral therapy
- Communication and counselling skills
- Healthy relationships, stigma, discrimination and disclosure
- Pediatric HIV
- Identifying and tracing people who do not return to the clinic
- Community outreach, home care, education and linkages
- Gender based violence
- Nutrition

## APPENDIX II: TREATMENT LITERACY APP

The following is a snapshot of the treatment literacy App “Kuwa Smart” which is available on Google Play Store and can be downloaded to devices like mobile phones.

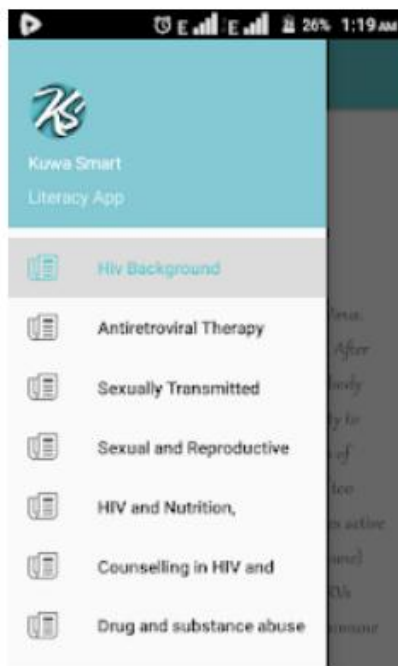


### Kuwa Smart

BuniHub Enterprises Education

3+

This app is compatible with all of your devices.



This is a Literacy Learning Application with a bias to Health Matters.

## **APPENDIX III: TREATMENT LITERACY MANUAL**

### **CONTENTS**

Glossary of terms

#### **HIV Background**

- Basic facts about HIV & AIDS
  - ❖ Meaning of HIV and AIDS
  - ❖ Life cycle of HIV
- Ways of transmission
  - ❖ Major and minor routes of HIV transmission
- Prevention of HIV
  - ❖ Abstinence
  - ❖ Delaying sexual debut
  - ❖ Prevention of Mother to Child Transmission
    - Before pregnancy
    - During pregnancy
    - During delivery
    - During breastfeeding
  - ❖ Living positively
  - ❖ Pre-exposure prophylaxis
  - ❖ Post-exposure prophylaxis
- Myths and misconceptions about HIV
  - ❖ Ways through which HIV cannot be transmitted
- Immune system
  - ❖ Function of the immune system

- ❖ Viral load test
- Stages of HIV Progression
  - ❖ Asymptomatic acute stage
  - ❖ Minor symptomatic stage
  - ❖ Major symptomatic stage
  - ❖ Severe symptomatic stage
- HIV risk in young people
  - ❖ Transactional sex
  - ❖ Intergenerational sex

### **Antiretroviral therapy**

- Background
  - ❖ Eligibility criteria
  - ❖ Goals of ART
    - Primary goal
    - Secondary goal
  - ❖ Correct way to take ARVs
  - ❖ Triple therapy
- Classification of ARVs
  - ❖ Nucleotide/nucleoside reverse transcriptase inhibitors
  - ❖ Non-nucleoside reverse transcriptase inhibitors
  - ❖ Protease inhibitors
  - ❖ Entry inhibitors
  - ❖ Preferred first line ART regimens currently in use for adolescents and adults
- ARVs side effects

- ❖ Minor side effects
- ❖ Major side effects
- Adherence
  - ❖ Importance of adherence
  - ❖ Consequences of non-adherence
  - ❖ Treatment as prevention
- Treatment failure
  - ❖ Causes
  - ❖ Substituting drugs in first line
  - ❖ Management of treatment failure after second line treatment

### **Sexually Transmitted Infections & Opportunistic Infections**

- Background
  - ❖ Relationship between HIV and STIs
- Common STIs and their symptoms
  - ❖ Bacterial STIs
  - ❖ Viral STIs
  - ❖ Protozoal STIs
- Opportunistic Infections
  - ❖ Bacterial diseases
  - ❖ Protozoal diseases
  - ❖ Fungal diseases
  - ❖ Viral diseases
  - ❖ HIV associated malignancies

## **Sexual and Reproductive Health**

- Background
  - ❖ Meaning of sexual and reproductive health
  - ❖ Comprehensive sexual and reproductive health education
- Family planning
  - ❖ Condoms, Injectables, Oral contraceptive pills, Implants, Intrauterine device
  - ❖ Unintended pregnancies
  - ❖ Post-abortion care
- Reproductive cancers
  - ❖ Cervical cancer
  - ❖ Breast cancer
  - ❖ Prostate cancer
- Relationships
  - ❖ Family relationships
  - ❖ Healthy relationships for young people
  - ❖ Date rape
  - ❖ Gender based violence

## **HIV & Nutrition / Exercises**

- Nutrition
  - ❖ Importance of balanced diet
  - ❖ Relationship between HIV/AIDS and nutrition
  - ❖ Food choices for people living with HIV/AIDS
  - ❖ Effects of alcohol consumption and smoking on nutrition
- Exercises

- ❖ Cardiovascular exercise
- ❖ Muscular endurance/strength exercises
- ❖ Flexibility exercises
- ❖ Benefits of exercises

## **Counselling in HIV & AIDS**

- Disclosure & Stigma
  - ❖ Advantages and disadvantages of disclosure
  - ❖ Disclosure to children
  - ❖ Guidelines for disclosure to children living with HIV
  - ❖ Meaning of stigma
  - ❖ Reasons behind stigma
- Behaviour Change & Positive Living
  - ❖ Behaviour change model
  - ❖ Meaning of positive living
  - ❖ How to manage emotions
- Life Skills
  - ❖ Purpose of communication
  - ❖ Keys to communication
  - ❖ Future planning
  - ❖ Goal setting
    - Short term goals
    - Long term goals
- Drug and Substance Abuse
  - ❖ Meaning of drugs
  - ❖ Classification of drugs

## **APPENDIX IV: ANTI-PLAGIARISM REPORT**