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ACHIEVEMENT OF THE UNAIDS 90-90-90 PROGRAMME IN NYAMIRA COUNTY REFERRAL HOSPITAL

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**ACHIEVEMENT OF THE UNAIDS 90-90-90 PROGRAMME IN NYAMIRA COUNTY REFERRAL HOSPITAL**

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**ABSTRACT**

***Introduction:*** The HIV epidemic can only be ended with the certainty that all people living with HIV/AIDS (PLHIV) have access to sustained Anti-Retroviral Therapy (ART).

***Objectives:*** The broad objective was to evaluate the achievement of the UNAIDS 90-90-90 programme in Nyamira County Referral Hospital (NCRH). Specific objectives were to find out how many clients had been tested, how many PLHIV were on sustained ART and how many PLHIV on ART had achieved viral suppression.

***Study Design and Setting:***

Quantitative, retrospective design at Nyamira County Referral Hospital, Nyamira County, Kenya. Secondary data from 2014- 2018 at the Ante-Natal Clinic and Outpatient and Inpatient departments was used.

***Results:*** Analysis of the separate elements of the treatment goals revealed that an average of 31% know their HIV status, 98% of the PLHIV between 2016-2018 are linked to CCC for sustained ART and 80% of PLHIV on ART are virally suppressed.

***Conclusion:*** Data collected revealed that NCRH has not yet achieved the 90-90-90 UNAIDS treatment goals as a whole.

***Recommendations:*** More patient testing is required to achieve HIV eradication and use of task shifting to increase access of ART to PLHIV.

## INTRODUCTION

### *Background Information*

Many strategies have been created and implemented in the hope of realizing the end of HIV. The realization of the long-term goal of ending the HIV epidemic can be achieved with approaches which are solidly grounded in the principles of human rights, mutual respect and inclusion.<sup>1</sup> The Kenya ARV guidelines 2018 states that the goal of ART is to suppress viral replication with the aim of reducing the patient's viral load to undetectable levels.<sup>2</sup> One thing is certain, the HIV epidemic can only be brought to an end with the surety of access of ART to all PLHIV. Furthermore, HIV treatment has been shown to avert AIDS-related deaths. As the accessibility of ART has increased in the last decade, the devastating effects of HIV have been altered.

In December 2013, the UNAIDS Programme Coordinating Board initiated new HIV treatment goals. The program, dubbed 90-90-90, is a three-part target aimed at ambitiously achieving viral load suppression among PLHIV. The program aims to achieve its target by 2020, preceding the targeted end of the AIDS epidemic by 2030.<sup>1</sup> The program is based on the principle that HIV treatment is critical in ending the HIV epidemic. This requires sustainable and undeterred access to ART for the millions of PLHIV, necessitating strong efficient health, political, social administrative and financial systems.

First, by 2020, 90% of all PLHIV will know their status. Second, by 2020, 90% of all people with diagnosed HIV infection will receive sustained ART. Third, by 2020, 90% of all people receiving ART will have viral suppression. With the achievement of this target, 73% of all PLHIV will be virally suppressed. This would translate to a two to

three-fold increase over the current estimated numbers of virally suppressed PLHIV.<sup>1</sup>

Several studies have indicated the importance of ART amongst PLHIV, and its effectiveness in Sub-Saharan Africa. However, according to Selke<sup>3</sup> more than 5 million of the 9.5 million PLHIV in Sub-Sahara Africa do not have access to ART. This has been attributed to the financial constraints, combined with the shortage of human resource. Sub-Sahara Africa contains two-thirds of the total global HIV population but only 3% of the world's health care workers.

Gaolathe<sup>4</sup> looked at the progress of the UNAIDS 90-90-90 program in Botswana. The survey found that of the 12, 610 participants, 3596 (29%) were infected with HIV. 2995 (83.3%) of the HIV infected already knew their HIV status. Among those who were aware of their HIV positive status, 2617 (73%) were on ART. Of those on ART and with viral load measurements, 2517 (96.5%) had 400 viral copies per mL or less. In total, 70.2% of the HIV infected individuals had virological suppression.<sup>4</sup>

The HIV prevalence of Nyamira County is 6.4%, with 23,493 PLHIV. This value is higher than the national HIV prevalence reported by UNAIDS in 2017 of 4.8%.<sup>5</sup> Based on the 2009 Population and Housing Census, the population of Nyamira County stands at 632,046.<sup>6</sup> The number of clients tested for their HIV status stands at 195,162. Of those found to be HIV positive, 6,315 have been put on ART. Data also reveals that mother to child transmission is at 14.8%.<sup>6</sup>

### *Study Justification*

The HIV prevalence in Nyamira County is higher than the national HIV prevalence, therefore, it is important to analyze the progress of the program in NCRH. Hence, data obtained will be used to focus efforts on specific areas of HIV eradication for example

in testing more patients to ensure adequate linkage.

#### *Broad Objective*

To analyze the progress of UNAIDS 90-90-90 in Nyamira County Referral Hospital.

#### *Specific Objectives*

- To find out the number of clients who have been tested.
- To assess the number of HIV positive patients who are on ART.
- To determine the number of PLHIV on care who are virally suppressed.

## **MATERIALS AND METHODS**

*Study Design:* A quantitative retrospective design was adopted for this study.

*Study Setting:* The study was conducted in Nyamira County Referral Hospital in the ANC, inpatient and outpatient departments.

*Study Population:* Secondary data from 2016-2018 was used from the entry points of NCRH. These are the ANC, outpatient department, Inpatient department and CCC. The data was obtained from both the registries and DHIS. However, due to missing data from several years, gaps were noticed. For viral suppression tests, only data from 2018 could be obtained.

*Sampling Techniques and Sampling Size:* All the data obtained from 2013 - 2018 was collected. The period was chosen in order to analyze progress of the program over time and to establish whether there has been any improvement over the years. For viral suppression tests, a viral load less than 1000

RNA copies per mL was taken to indicate viral suppression.

*Data Collection:* A data collection tool was created to insert the data. Data was collected with the aim of analyzing the separate components of the 90-90-90 program. Therefore, the total number of PLHIV with viral suppression may not be analyzed.

*Data Analysis:* Data was analyzed using Microsoft Excel.

*Ethical Considerations:* The study was approved by NCRH administration, the CCC department and Maseno University Ethics and Research Committee and confidentiality of data is maintained.

HIV data is sensitive data and is mostly handled by NGOs. Four months to the period when this research was being conducted, there was a transition from one NGO to the next. During the transition, a significant portion of the previous data was taken by the former NGO, therefore leaving the facility with minimal data for research. However, for the ANC department, most of the data was obtained from their registries.

*Assumptions:* An assumption made is that clients linked to CCC from the specific departments were tested positive within those departments, rather than being referred after being tested positive elsewhere.

## **FINDINGS**

The table shows the results which were obtained from the survey.

**Table 4.1***Antenatal Clinic (old and new) % - (tested/workload)*

Year	Workload	Tested	% tested	Positive	Linked to CCC	% Linked to CCC
2014	3094	1017	32.87%	52	--	--
2015	3576	1086	30.37%	59	--	--
2016	3870	1083	27.98%	57	56	98.25%
2017	2283	796	34.87%	30	27	90.00%
2018	3635	1086	29.88%	43	48	111.63%
<b>Total</b>	<b>16458</b>	<b>5068</b>	<b>30.79%</b>	<b>241</b>		

**Table 4.2***Outpatient and Inpatient Department (Grouped together because there is no separate outpatient and inpatient data from the facility) (tested/workload)*

Year	Workload	Tested	% tested	Positive	Linked to CCC	% Linked to CCC
2014	45122	8593	19.04%	353	--	--
2015	63173	18531	29.33%	408	--	--
2016	62687	24250	38.68%	309	--	--
2017	51533	14745	28.61%	199	--	--
2018	65236	24470	37.51%	212	--	--
<b>Total</b>	<b>287751</b>	<b>90589</b>	<b>31.48%</b>			

**Table 4.3***ART Therapy at CCC (these are all the viral suppression tests which were done in 2018) (virally suppressed/ total viral suppression tests done)*

2018	Total viral Suppression Tests	Virally suppressed	% Virally Suppressed
January	114	84	73.68%
February	172	118	68.60%
March	173	137	79.19%
April	115	100	86.96%
May	104	94	90.38%
June	137	114	83.21%
July	194	159	81.96%
August	286	244	85.31%
September	374	340	90.91%
October	225	195	86.67%
November	217	202	93.09%
December	169	154	91.12%

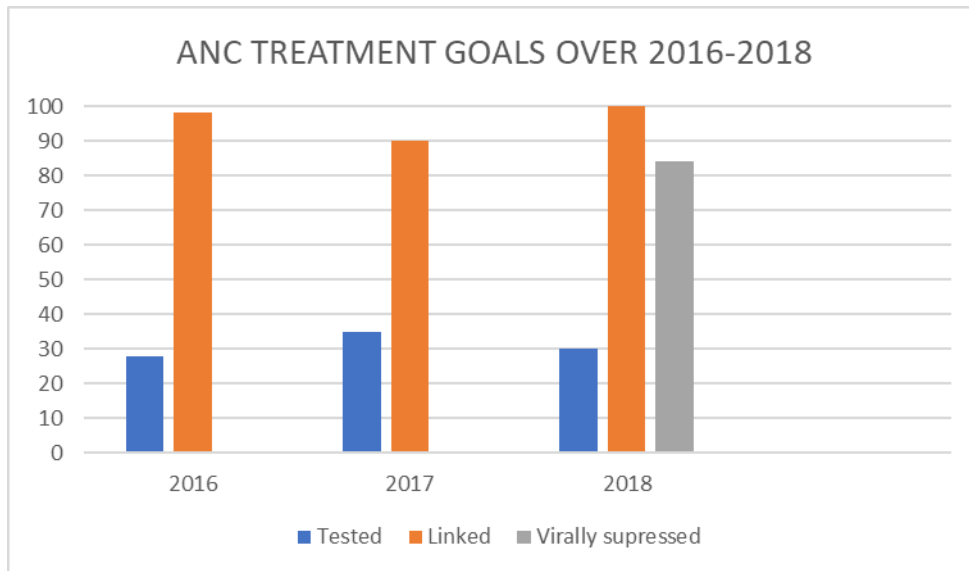


Figure 4.1

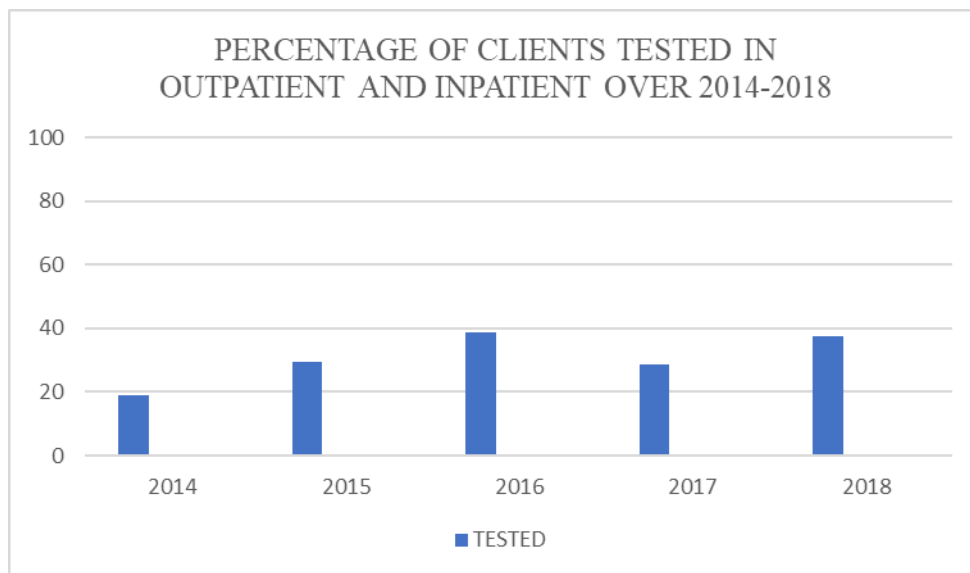


Figure 4.2

Overall results showed that for the 1st treatment goal, in the outpatient and inpatient departments, between 2014 and 2018, an average of 19% - 39% of the clients were tested for their HIV status. As depicted in the figure 4.2, there has been an increase in the

number of patients tested within the facility from 19% in 2014 to 37% in 2018. However, there was a decline in 2017, to 28.61%, largely due to the hospital faculty industrial action. For the ANC department, those tested range between 28% and 35%. Albeit rates being

high, there has not been an increase in tested patients over time. In 2014, 31% of the clients were tested, whereas in 2018, only 30% of clients were tested.

For the 2nd treatment goal of linking all PLHIV to ART, the ANC department, between 2016 and 2018, had linked 98% - 100% of patients tested to be positive. Data from the outpatient and inpatient departments was not available to be collected. For the 3rd treatment goal of maintaining all PLHIV on ART at viral suppression state, viral suppression load tests done in 2018 revealed that 69% - 93% of PLHIV were virally suppressed, averaging at 85%. As shown in the table, the lowest numbers of virally suppressed patients on ARV was reported on February 2018 at 69%, however, in November, this had risen to about 93%. Data from preceding years and the outpatient and inpatient departments was not available.

## DISCUSSION

The study set out to investigate the progress of the UNAIDS 90-90-90 program by analyzing each element of the three-target treatment goals. Data obtained between 2014 and 2018 showed that NCRH is yet to achieve the 90-90-90 treatment goals in entirety. However, it has been able to achieve the 2nd treatment goal, which is to link over 90% of all PLHIV to ART.

Results from the data analysis for the 1st treatment goal show that NCRH has not yet achieved 90% testing for all patients visiting the facility. A comparison between the ANC department and the inpatient and outpatient departments showed that ANC has been more aggressive towards achieving the 1st treatment goal for testing their patients. ANC testing ranged between 25% and 35%, being more consistent and averagely higher than the

outpatient and inpatient department rates. The outpatient and inpatient departments rates ranged between 19% - 39%. However, it is important to note that the outpatient and inpatient departments have reported an increase in the percentage of clients tested as opposed to ANC.

For the 2nd treatment goal of linking all patients to CCC, ANC department has been successful in achieving 90% linkage of all PLHIV within their department to ART. Between 2016- 2018, 98%-111% of their clients who tested positive were linked to CCC. However, it is important to note that the specific identities of patients linked to CCC from ANC could not be ascertained, therefore in 2018, more patients were linked to CCC than those who had tested positive within the facility, indicating that the number included referrals from beyond the hospital's ANC. Data from outpatient and inpatient departments was not available.

NCRH has not achieved the 3rd treatment goal of maintaining all PLHIV on ART at virally suppressed state, with values averaging at 85%. Viral suppression tests done in 2018 showed that 69% - 93% of PLHIV on ART are virally suppressed, averaging at 85%. The values fall slightly short of the UNAIDS target, necessitating more keenness on the adherence of PLHIV on ART.

## CONCLUSION

NCRH has not achieved the UNAIDS 90-90-90 treatment goals in entirety. Analysis of the goals separately reveals that, the first treatment goal of testing all clients stands at 31%. The 2nd treatment goal of linkage of PLHIV to CCC has been achieved with an average of 99% being linked. The 3rd treatment goal of maintaining the PLHIV on

ART at viral suppression has not been achieved. With an average of 85% in 2018.

### RECOMMENDATIONS

- Collaboration of HIV data collection and storage between the hospital and the NGOs.
- HIV testing of patients visiting the facility in line with the HIV testing guidelines to facilitate linkage.

### ACKNOWLEDGEMENTS

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