STRENGTHENING DISEASE SURVEILLANCE TO ENHANCE RETENTION AMONG PATIENTS ATTENDING COMPREHENSIVE CARE CENTRE AT COAST GENERAL HOSPITAL, KENYA

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REGISTRATION NO W82/89461/2016

A Dissertation Submitted In Partial Fulfilment for the Award of Fellowship in Capacity Building for Sustainable Development (Epidemiology and Biostatistics) of the University of Nairobi

DECLARATION

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

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DEDICATION

This project is dedicated to my wife Doris Kithiira and my children Hope Nkatha and Victor Kiriinya for their support and understanding.

ACKNOWLEDGEMENT

First, I sincerely thank my supervisors Dr Rose Jepchumba Kosgei and Dr Levi Nganga Mbugua and my mentor Dr Francis Otieno for their invaluable cooperation, supervision and assistance throughout the project. Second, I sincerely thank Prof.James Machoki UHIV Director/ Principal College of Health Science, Dr.Dufton Mwaengo Director Unitid, UHIV secretariat, UON programme staff for their administrative support and continuous support during the project period. Third, I appreciate Kenyatta National Hospital for full support during the study period. I appreciate NASCOP and CDC for their support. I sincerely thank Coast General Hospital administrators Dr Khadawala and Dr Ochola, Clients, Partner: Afya Pwani, Medium term fellows (Mwangemia and Saada) and all HIV staff for their support during the project. Finally I thank all UHIV cohort II fellows and Dr Gathara for continued support and encouragement.

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LIST OF ABBREVIATIONS AND DEFINITION OF TERMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
CCC	Comprehensive Care Centre
CDC	Centre of Disease Control
CD4	Cluster of differentiation 4
CGH	Coast General Hospital
HIV	Human Immuno Deficiency Virus
HIV/AIDS	Human Immuno deficiency Virus Acquired Immunodeficiency Syndrome
KNBS	Kenya National Bureau of Statistics
KASF	Kenya AIDS Strategic Framework
LTFU	Loss to follow-up
NACC	National AIDS Control Council
NASCOP	National AIDS and STD Control Programme
OCA	Organization Capacity Assessment
PhD	Degree of Doctor of Philosophy
UHIV	University of Nairobi HIV Capacity Building Program
UNITID	University of Nairobi Institute of Tropical and Infectious Disease
UNAIDS	United Nations Program on AIDS

HIV care:	This refers to appointments for drug refills, medical review, Nutritional counseling, psychosocial support and Diagnostic/laboratory work-up provided to HIV infected person
Retention in care:	Continuous engagement in appropriate medical care
Psychosocial support:	It is non- therapeutic intervention that help an individual to cope with stressors

PROJECT SUMMARY

Background: Having all human immunodeficiency virus (HIV) infected patient retained in medical care at regular interval is linked to positive health outcome. To achieve unmet gaps in UNAIDS 95:95:95 all HIV infected patient must be maintained in care with regular medical clinic attendance. Surveillance systems have shown to be an effective way of tracking progress and identifying gaps in the care provision process. From an Organization capacity baseline assessment report in Coast General Hospital (CGH). The following were identified as challenges in monitoring and tracking patients in care were identified: absence of a multidisciplinary team on HIV surveillance, surveillance system not optimally used lack of awareness by staff at service delivery points on their role in surveillance and lack of budget for surveillance. The Coast General Hospital reports have shown that patients are missing their clinic appointment attendance. Thus patients retention on HIV care is a problem with many lost to follow up.

Objective: To strengthen the HIV surveillance to enhance retention among patients attending Comprehensive Care Centre at Coast General Hospital. Significance: The project implementation and utilization of recommended practices has contributed in improvement in HIV care cascade to achieve the unmet gaps in UNAIDS 95;95; 95 strategy. Methods: The project involved studying the strategies which was in use, identifying the gaps in the strategies, taking action to enhance retention and coming up with recommendation of suitable strategies of enhancing retention of patients on HIV care. Outcomes: Functional multidisciplinary HIV surveillance team was established and staff participation on HIV care resulting to 99% retention of HIV patients on care as result of improved adherence of HIV patients on scheduled medical appointments. Coast General Hospital had High identification of newly tested positive with 96% Linkage to care and treatment among newly tested positive .Viral suppression improved from 84% in 2017 to 93% 2018. Project activities and recommendation has been included in day to day programme of HIV patient care at CCC for sustainability, where the mentor and two UHIV medium term fellows are key champion. Summary: HIV patient attendance of clinic regularly for care is very important for successful clinical outcome

1.0. INTRODUCTION AND BACKGROUND

1.1: DISTRIBUTION OF HIV AND AIDS

Kenya Uganda and Mozambique is among the countries with high HIV epidemic in the world in terms of the number of people with HIV. In Kenya approximately 1.5 million people were living with HIV in 2015. In the same year, HIV prevalence in Mombasa County has HIV prevalence of 7.5% which is approximately 1.2 times higher than the Kenya HIV prevalence (5.9%) as indicated in (Kenya HIV Estimates 2015). Mombasa County is ranked the seventh nationally with 3.6% contribution to the total number of people living with HIV in Kenya. According to Kenya HIV Estimate (2015) a total of a 54,310 people were living with HIV in Mombasa County, with 19% of people aged 15-24 years and 7% children aged of 15 years and below. In Kenya Mombasa County children contributed 5% and adult 3% of new HIV infection in Kenya. Kenya HIV County Profile (2016) adolescents aged 10-19 years contributed 25% while young people aged 15-24 contributed to 47% of all the new HIV infections in the County. There was increase in number of new HIV infections among children aged 15 years and below in the year 2015 as Compared to 2013.

Table 1.1 New HIV Infections in County of Mombasa in 2015

Annual Indicators of new HIV infection	Mombasa 2015 Annual estimate	Kenya 2015 annual estimate	County ranking in 2015 out of 47
Among children aged (0-14)	319	6613	43
Among Adult aged >15 years	2426	71034	41
Among Youth (15-24years)	1283	35776	42
Among adolescent (10-19years)	681	18004	42
Total New HIV infection	2745	77647	41

Source (Kenya HIVestimate2015)

1.2: HIV Mortality in Mombasa County

In 2015 HIV Mortality in Mombasa County was very high as it was ranked number 41 during county ranking with child AIDS related death (0-14 years) 253, AIDS related death >15 years 1199, and total number of AIDS related death was 1452 (Kenya HIVestimate2015). Reference Table 1.2

Table 1. 2. HIV Mortality in Mombasa County

HIV Mortality Indicators	Mombasa 2015 Annual estimates	Kenya 2015 annual estimates	County ranking in 2015 out of 47
Child AIDS related death (0-14 years)	253	5004	40
AIDS related death >15 years	1199	30817	40
AIDS related death among youth (15-24years)	159	3853	42
AIDS related death among adolescent (10-19years)	120	2793	40
Total number of AIDS related death	1452	35821	41

Source (Kenya HIVestimate2015)

** Totals are for children and adult since adolescent and youth are included in the categories

1.3: Retention in care and viral load suppression among HIV patients

According to Kenya HIV County profile (2016)**,** In Mombasa County, out of 3642 children on HIV care, 2,771 (76%) are on ART and of this 902 (33%) are virally suppressed in 2015 among the 36,805 adults on care, 34,210 (93%) are on ART and of this 11,147 (33%) are virally suppressed. Number of patients ever tested and put on HIV care in Coast General hospital is approximate 19367. By November 2017 the grand total number of patients who were on HIV care was 4305. Specifically, the total of patients aged 24 years and below who had enrolled in HIV care at the facility were 1618 and 644 patients were on ARVS.

Table 1.3 Result of HIV Viral load among patient tested from June 2017 to November 2017 CGH

Months	Vl done	Vl suppression	Non suppression
JUNE	314	77.70%	22.3% (70)
JULY	358	83.80%	16.2% (58)
AUG	181	69.10%	30.9% (56)
SEPT	387	82.20%	17.8% (69)
OCT	491	84.90%	15.1% (74)
NOV	327	78.60%	21.4% (70)
Total/ average %	2455	83.82%	16.2% (397)

Source : CGH Record Register 2017

1.4 Factors associated with poor retention of HIV patient on care

It is important to identify which patients are at greatest risk for not being retained to a HIV care to help target interventions efforts to these groups. Literature on HIV has shown the demographic characteristics associated with missed appointment are: younger age (Brainstein et al 2010), less education, lack of health insurance cover and lower household income (Horstman et al, 2010, Israelski, 2001). Clinical characteristics associated with missed appointments are higher CD4 cell counts and high viral load (Horstman et al, 2010). Patients may not attend their clinic appointments because they do not feel sick or because they feel sick (Kerr etal,2012).

Factors associated with missed appointments include a history of or current injection drug use, and patients with psychiatric illness (Rumptz et al, 2007) who are reported to visit the clinic less regularly for care, have low perceived social support with less engagement with the health care

provider (Brainstein et al, 2011).Patients may also not attend clinic appointments because of conflicts with work schedules, lack of child care or transportation, family illness, and hospitalization (Wachira et al, 2012). A study of HIV-infected women found the main reasons for missing appointments were forgetting appointments, feeling too sick to attend (Kunutsor, 2010). HIV-infected patients missed appointments for no specific reasons, because they forgot, or for unexpected social reasons (Wachira et al 2012). Perceived stigma, afraid to disclosure of HIV status has been reported as factors hindering adherence to HIV clinic appointments (Brainstein et al 2011). Structural barriers within the clinical care setting include, scheduling of appointment time interval to the next scheduled appointment with the longer the time period to the next appointment, the higher the failure rate of keeping appointments (Kerr et al., 2012; Horwood et al.,2010). Kenya's HIV epidemic affects most of its general population, but groups of men who have sex with men, women who are commercial sex workers and people who inject drugs are still most vulnerable to infection and form part of the Most at Risk Populations (MARPS) for HIV sub-group and are generally reported to be in high numbers in the coast region.

1.5: HIV surveillance systems

The collection of information to identify persons diagnosed with HIV/AIDS (HIV surveillance) began in the early 1980s to characterize the spread of HIV among people in the United States. (Sweeney et al , 2013). There were no effective treatment for HIV in early days but HIV-related stigma and discrimination were rampant, many states enacted laws that narrowly defined acceptable uses of HIV surveillance data, thus, in contrast to other sexually transmitted diseases and tuberculosis. HIV surveillance data have historically not been widely used for disease control (Sweeney et al, 2013). HIV surveillance studies have been utilized to optimize when to

start treatment, monitor progress of HIV patients and outcomes for different disease regimens (Deeks et al, 2013). Data to Care (DTC), represent a new public health strategy that aims to use HIV surveillance data to identify HIV diagnosed individuals not in care, link them to care, and supports them in HIV Care Continuum. (CDC, 2015).

1. 6: Outcomes / benefits of patient retained on regular HIV clinic attendance

With increased access and use of highly active antiretroviral therapy has been shown to improve HIV treatment outcomes. Sustained retention to care provides additional benefits of improved treatment adherence, viral load suppression, improved immune function, less drug resistant , reduced health care costs associated with reductions in hospitalization, reduction in risky sexual behavior and improved population survival rates (NACC and NASCOP 2014). The main contributing factor to loss to follow up among HIV patient in the hospital clinics are not well understood and documented. Specific interventions are needed to identify those who are at risk of getting lost to care and for those who are lost, strategies for engagement in HIV care. The disease (HIV) surveillance system is vital for collecting, analyzing, interpreting and dissemination of the findings, however, in the CGH the system was not functional by 2018. For purposes of sustainability there is urgent need to address this shortcoming. The Coast General Hospital is the main public hospital providing HIV services in the coast region and as such acts as a benchmark to lower level facilities. Coast General Hospital is a training centre for pre-service training of nurses and clinical officers who form part of the largest workforce in HIV service provision but also an internship Centre for doctors. Therefore, practices learnt in this setting are likely to be replicated in other settings and hence a project on improving retention to care of HIV patients will provide both local and wider impact. The UHIV fellow, Mentor and the hospital administration implemented a project aimed on strengthening HIV surveillance that

aims at enhancing retention of HIV patients to HIV care among patients seeking HIV services in Coast General Hospital

1.7: Statement of the problem

HIV among population remains a major public health problem of concern. Retention of patients on regular medical appointment on HIV care is critical on maximizing patient outcome and the success of HIV care treatment programme. Hospital HIV Surveillance team and systems need to be operational and empowered to collect accurate HIV data, analyze, interpret and use these data for decision making to improve care provision. The gaps identified during Organization capacity assessment (OCA) report done by University of Nairobi in collaboration with management science for Health done in 2016 found out the following gaps: Hospital surveillance system not optimally used, multidisciplinary team on surveillance not functional, there was no budget for disease (HIV) surveillance and Lack of awareness by staffs at service delivery points on their role in disease surveillance. The hospital data has shown many patients miss their scheduled HIV clinic appointment and are subsequently lost to follow up. Number of patient ever tested and put on HIV treatment in Coast General hospital was approximately 19367. By November 2017 the total number of patient were on HIV treatment was 4305 (CGH data). However, this problem is not unique to CGH as retention of patients on HIV care is a very big problem and has been pointed out in the strategic guidelines for intervention to meet KASF strategic direction 2, which is Improving Health Outcomes and Wellness of all People Living with HIV which is the key in meeting UNAIDS 95:95:95. This is evidenced in Mombasa County AIDS Strategic Plan 2016 – 2020, Kenya AIDS Strategic Framework (KASF) 2014/2015- 2018/2019, Monitoring and Evaluation Framework 2014/2015-2018/2019, Kenya HIV and AIDS Research agenda 2014/2015- 2018/ 2019. While the main reasons for HIV patients missing HIV clinic

appointments have been identified in literature and include: forgetting appointment, conflicting appointment, feeling too sick to attend (high viral load) or not feeling sick, no specific reason, young age, history of or current injection drug use, patient with psychiatric illness, less engagement with the health care provider. These factors are more generic and there is need to identify additional context specific factors that might help target interventions better.

Goal: The main goal of this project is to strengthen HIV surveillance and enhancing retention of HIV patients on HIV care among patients seeking HIV services in Coast General Hospital with the aim of achieving UNAIDS 95; 95; 95 target which contributes to improving Health outcomes and wellness of people living with HIV.

Purpose: To improve and maintain regular medical clinic appointments attendance among HIV patient with the aim of increasing viral load suppression among HIV patients hence improve individual and population health.

1.8: Project Objectives

1.8.1: To identify the gaps for retention of patients on HIV care at CCC, CGH

1.8.2: To determine the risk factors of patients who are lost to follow up and those who are likely to miss the scheduled HIV clinic appointments

1.8 3: To strengthen the capacity of staff in disease surveillance at Coast General Hospital with HIV as a tracer disease

1.8.4: To enhance retention of HIV patients on scheduled medical appointments among patients attending Coast General Hospital HIV clinic

1.8.5: To recommend the best strategies to enhance retention of patients on HIV care

Deliverables or outputs:

(I) Gaps identified for retention of patients on HIV care (ii) identified risk factors for patients who are lost to follow up and the people who are likely to miss scheduled HIV clinic appointment (iii) HIV surveillance committee formed, Meetings held by functional committee, staff trained on HIV surveillance, Staff training schedule and reports on sensitization, availed roles and responsibilities of surveillance team. Report of staff participation in use of strategies to enhance retention of patient on HIV care and reports on patients on care. Suitable strategies recommended for enhancing retention of patients on HIV care.

1.9: Justification/ Significance:

In Mombasa county viral suppression stand at 33% (Kenya HIV County profile 2016). Number of patient ever tested and put on HIV care in Coast provincial hospital was approximate 19367. By November 2017 the grand total number of patient who was on HIV care was 4305. (CGH, CCC register 2017). While we acknowledge that some of the patients may have undergone natural attrition (death) or referred for follow up in other health facilities, unfortunately, due to the dysfunctional HIV surveillance system, it was not possible to ascertain the proportion of these patients who were lost to follow-up. The project aimed at re-activating and strengthening the HIV Surveillance at Coast General Hospital and as a consequence contributes in improvement in HIV care cascade to achieve the unmet gaps in UNAIDS 95; 95; 95.

2.0: PROJECT IMPLEMENTATION METHODOLOGY

2.1: Key institutional issues to be addressed

The key institutional known to be addressed were: Re-activate and improve the HIV Surveillance system, facilitate the development of a multidisciplinary team on surveillance, advocate for a budget for surveillance, promote awareness by staff at service delivery points on their role in surveillance, enhance retention of HIV patients on regular scheduled medical appointments geared in improving viral load suppression among HIV patients.

2.2: Project activities indicating how objectives was accomplished

2.2.1: To identify the gaps for retention of patients on HIV care at CCC, CGH

The staff at CCC participated in identifying of the gaps for retention of HIV patients on care. Meeting of medical staff was held to discuss the reasons that makes, patient not adhere to scheduled clinic appointment and review the gaps at the clinic. The patients or contact person was contacted to give the reasons for non-adhering to scheduled clinic appointment.

2.2.2: To determine the risk factors of patients who are lost to follow up and those who are likely to miss the scheduled HIV clinic appointments

This project aimed at finding out the risk factors of missing HIV clinic appointments and lost to follow up among HIV patients by reviewing the patients data and contacting the patient and support person. Assessing how HIV patient keep their regular scheduled medical appointment by comparing the booked patients on the register with those who attended the clinic the booked day.

2.2.3: To strengthen the capacity of staff in disease surveillance at Coast General Hospital with HIV as a tracer disease

Identifying the reason for disease surveillance system not optimally used and non-functional multidisciplinary team on surveillance at Coast General Referral Hospital. This was done by discussing and interviewing key informants, participate in reactivating and formation of multidisciplinary HIV surveillance team consist of clinician, nurses, health record officer, laboratory technologist, public health officers, HIV counselors, hospital administrator and other relevant groups. Having monthly meeting/ workshop of disease surveillance team, participate in planning for disease surveillance budget and sensitization and training of staffs at service delivery points on their roles in disease (HIV) surveillance. Participated in developing specific roles of HIV surveillance team and made them available for them. Promoted enrollment of staff on UHIV online short courses to improve their knowledge on surveillance activities. Obtain relevant resources: Staffs, money for tea and snacks and lunch allowances and materials for example stationaries for project.

2.2.4: To enhance retention of HIV patients on scheduled medical appointments among patients attending Coast General Hospital HIV clinic

This project, Orientate/ sensitize two HIV retention staff by letting them learn from other hospitals for two days on retention of HIV patients on care. Carry out intervention to reduce the loss to follow up by scaling up early recognizing those at risk of getting lost to care follow up for example those who miss to attend scheduled HIV clinic are tracked, offered intensive adherence counseling, psychosocial support and involved four staff/ community members to assist in tracking, by calling or visiting them and re engagement them to HIV care. Assessment and identifying patients who were at risk of failing to adhere to treatment guidelines before initiation

of treatment for example drug users and psychiatric patient need intensive adherence counseling and care giver education. Equipment needed were one laptop, mobile phones with camera to take photos, stationery, and monthly airtime for project implementation.

2.2.5: To recommend the best strategies to enhance retention of patients on HIV care

The project team made recommendation on the best strategies to enhance retention of patients on HIV care after completion of the project.

2.3: Roles and responsibilities (Who will do what?)

The HIV fellow, two UHIV medium term fellows, HIV mentor and Deputy Chief Administrator participated in the reactivation of the disease surveillance team (HIV), monthly meeting of disease surveillance team and formation of multidisciplinary team on HIV surveillance. The disease surveillance team formulated a proposed disease surveillance budget which was approved by the Hospital The fellow and disease surveillance team organized and participated in capacity building of staff at service delivery points on their roles in disease surveillance. The Fellow and project team participated in assessing how: HIV patients kept their regular scheduled medical appointment, the gaps on retention of patients on HIV care, the risk factors for loss to follow up, missing clinic appointments and intervention to reduce the loss to follow which is geared to improving viral load suppression.

2.4: Project implementers, partners and beneficiaries

Implementers

The key implementers of this project were: The UHIV Fellow as the Principal Investigator, the Participating Local Partner (PLP), mentor, Dr Francis Peter Otieno), the University Supervisors Dr Levi Mbugua and Dr Rose Kosgei and two mid-term fellows working at CGH Ann Mwagemia and Saada Mohammed.

Partners

The partners in this project include: Centre for Disease Control (CDC) as the funding agency of the project, University of Nairobi Institute of Tropical and Infectious Diseases (UNITID) NASCOP, Mombasa County Department of Health, CGH, CCC Department and surveillance team and development partners supporting CGH, CCC i.e. AFYA Pwani.

Beneficiaries

The primary beneficiaries of this project are the clients and residents of Mombasa County through improved HIV/AIDS service delivery, CGH staff having functional disease surveillance teams and application of innovative strategies to improve their operations and performance within the facility and the County. Secondary beneficiaries are NASCOP, HIV/AIDS actors and partners, Mombasa County Department of Health and policy makers at various levels.

2.5: Communication strategies/plans/processes

Communication through meeting/workshop among staffs dealing with Disease surveillance was held. There is creation of awareness to the relevant authorities about the project together with our partners through written reports and advocacy. Campaign engagements to ensure our points of concern are heard by relevant authorities for intervention.

2.6: Documentation process

The reports were generated and stored safely for use as the project continued.

2.7: Risks and assumptions

The staffs and Hospital administrators participated and supported the project fully. Data was available for review. No risk involved in the implementation of the project.

2.8: Sustainability plan

The organization has started implementation of the recommended practices. From beginning of the project the hospital staffs were fully involved and Hospital administrators were on support on recommended practice. The project activities and recommendation was integrated in HIV care at CGH. Currently there is daily identification of patient who misses scheduled medical clinic appointment and calling to trace, reschedule them and regular follow up of HIV patient who are lost to care. There is active participation and reporting about the findings of the HIV disease surveillance. The trained and sensitized staffs are acting as trainer of trainers to facilitate continuity of the project. The Coast General Hospital PLP Mentor/ advisor and two medium term fellows are participating in promoting continuity of project recommended practice.

2.9: Data sources

Data sources were from patient records, patient on care and patient relatives, interviewing key informants in the hospital as a routine process.

Analysis plan

Analysis of the project was done as per the objectives. Findings from analysis of data collected was disseminated at the hospital level and more widely to help design interventions to promote retention of patients to HIV care.

2.10: Expected Outcomes

Expected outcomes of this project was having functional multidisciplinary HIV surveillance team and staff participation on care resulting to 95% retention of HIV patients on care as result of adherence of HIV patients on scheduled medical appointments.

3.0: PROJECT MONITORING AND EVALUATION:

Description of monitoring and evaluation of the project during implementation period:

Reactivating the disease surveillance team (HIV)

The HIV fellow, public health officer, HIV mentor and Deputy Chief Administrator had championed the Reactivating of the disease surveillance team (HIV). The project team evaluated whether the disease surveillance team had been reactivated/ formed and when.

Regular meeting of disease surveillance team

The monthly meeting of disease surveillance team were evaluated and monitored, whether it took place or not, and key report documented in the disease surveillance meeting register.

Formation of multidisciplinary team on disease surveillance

The project team monitored and evaluated to ascertain that the disease surveillance team formed consisted of a multidisciplinary team.

Participate in planning for disease surveillance budget

The project team participated in formulation of proposed disease surveillance budget and it was approved by the hospital.

Capacity building of staffs at service delivery points on their roles in disease surveillance

The fellow, disease surveillance team organized and participated in capacity building of staffs at service delivery points and their roles in disease surveillance were clearly outlined. The monitoring and evaluation involved checking reports of the number of training/sensitization

session of staffs held, the number of staffs trained/sensitization and participation of staffs in (HIV) disease surveillance

Assessing whether HIV positive patient keep their regular scheduled medical appointment and intervention to reduce the loss to follow up.

Monitoring, involved finding out the number of patients who missed the appointments. This was done by tracing them through cell phone or visiting them and reminding them of the clinic visit, rescheduling them on agreed near date and checking whether all these activities were implemented and documented.

3.1: Ethical Issues

The project team ensured that data security privacy and confidentiality were observed, restricted access to the information collected and coding of data were observed. Project reports were kept under key and lock to ensure high level of confidentiality and privacy. The fellow got approval from the University of Nairobi and Centre of disease control and Coast General Hospital. Codes identification were used and personal information from the records were kept safely for authorized users only. The data collected was used in promoting HIV care.

4.0: RESULT OF PROJECT

Figure 4.1UHIV fellow Mr Peter Mwiti and Dr Otieno Francis Mentor with HIV team at CGH

Figure 4.1 shows a UHIV fellow Mr Peter Mwiti standing having a meeting with HIV staff at CGH discussing the projects achievements.

4.1: To identify the gaps for retention of patients on HIV care at CCC, CGH

Gaps were identified for retention of patients on HIV care which influence achievement of HIV UNAIDS 95:95:95 targets. The project team, staffs and partners at CGH identified the gaps for retention of HIV patients on care. The gaps were identified through holding meetings with stakeholders to discuss the reasons that make patient not adhere to scheduled clinic appointment and review the gaps at the clinic. The patients or contact person were contacted to give the

reasons for non-adhering to scheduled clinic appointment. The following were reasons identified for non-adhering to scheduled clinic appointment; Patients claims they had travelled outside Mombasa County, They forgot clinic appointment date and some had given wrong contact,Most of the time they were on job working they were not released by employer. They had extra ART drugs, Perceived stigma I do not what to come to clinic people known to me will see me, Perceived doing well I am doing well viral load zero, I had no fare /transport, Emergency occurred, Went to another clinic had collected drugs earlier and others admitted in wards.

Gaps were identified for retention of patients on HIV care which influence achievement of HIV UNAIDS 95:95:95 targets. At CGH CCC there was improvement in adhering to scheduled clinic appointment from 31.2% in June 2018 to 40% in September 2018 (Table 4.1).

Table 4.1 Client who kept the HIV clinic appointment from June 2018 to September 2018 report at CCC/ CGH

Months	**Total client with booked appointment**	**Client who kept appointment**	**% of client who kept appointment**
June	1750	546	31.2%
July	1750	513	29.3%
August	1893	543	28.7%
September	1456	583	40%

Source: CGH Appointment register 2018

Figure 4.2 A Fellow having a Meeting with HIV staff at Coast General Hospital

Figure 4.2 shows a UHIV fellow Mr Peter Mwiti standing having a meeting with CCC staffs CGH discussing about improving HIV care and treatment to achieve UNAIDS, 95; 95; 95 targets.

4.1.1: Client with unscheduled HIV Clinic Visit appointment from June to September 2018

The data in Table 4.2 shows improvement in HIV Client with unscheduled clinic visit from 68.8% in June 2018 to 59.9% in September 2018. The multidisciplinary approach of involving all staff resulted to improvement on HIV patients adhering to scheduled clinic appointment. Client has resulted to congestion of patients at CCC clinic and increased workload of staff every day.

Table 4.2 Client with unscheduled HIV Clinic Visit appointment from June to September 2018

Months	Client with unscheduled clinic visit	Total client who attended clinic	% of client with unscheduled clinic visit
June	**1204**	**1750**	**68.8%**
July	**1237**	**1750**	**70.6%**
August	**1350**	**1893**	**71.3%**
September	**873**	**1456**	**59.9%**

4.2: To determine the risk factors of patients who are lost to follow up and those who are likely to miss the scheduled HIV clinic appointments

The project team, staff and partners at CGH worked together and found out the risk factors of missing to attend HIV clinic appointments and lost to follow up among HIV patients through reviewing the patient's data and contacting the patient and support person. Assessing how HIV patient kept their regular scheduled medical appointment by comparing the booked patients on the register with those who attended the clinic by the booked day. The risk factors of patients who are lost to follow up and those who are likely to miss the scheduled HIV clinic appointments were identified as follows; Patients who claims regularly they had travelled, Patients who claims that they forgot clinic appointment date and non-disclosure, No time they were on job working, they were not released by employer, They had extra ART drugs, Perceived stigma, I do not what to come to clinic people known to me will see me, Perceived doing well I am doing well viral load zero, I had no fare /transport, Emergency occurred, Went to another clinic had collected drugs earlier, those who gave wrong contact, those who attend clinic on unscheduled date

Figure 4.3 Shows UHIV fellow reviewing HIV registers at CGH

Figure 4.3 shows UHIV fellow reviewing HIV registers at CGH HIV with aim of reviewing how patients attend scheduled medical appointments and management.

Table 4.3 HIV patients on scheduled medical appointments and management

DEFAULTER TRACING DATA CHART 2018		COUNTY: MOMBASA			SUBCOUNTY: MVITA		HEALTH FACILITY: CPGH				
APPOINTMENT ADHERENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
Total client with clinic appointment	2027	1907	1834	2044	1895	1750	1750	1893	1456	1908	
Client who kept their appointment	750	701	648	729	663	546	513	543	583	692	
Client who defaulter in the month	54	101	119	45	38	59	115	84	81	152	
Total unscheled visit	1277	1206	1186	1315	1232	1204	1237	1350	873	1116	
DISFAUTER TRACING											
Total client traced	15	104	81	101	73	66	65	63	61	66	
Number returned to care	15	104	81	101	73	66	65	63	61	66	
Number transferred out	9	11	16	25	15	14	15	18	20	18	
Number died	2	2	2	4	4	1	2	6	3	6	
Number last to follow up	4	5	1	2	17	0	0	0	0	0	

4.2.1. HIV patients on scheduled medical appointments and management

Table 4.3 shows the number of patients tracked back to HIV care, with Zero lost to follow during the months of July to October 2018. The table shows few patients are transferred out to other HIV clinic.

4.3 To strengthen the capacity of staff in disease surveillance at Coast General Hospital with HIV as a tracer disease

Figure 4.4 UON /UHIV fellow having a meeting at Coast General Hospital

Figure 4.4 shows UON /UHIV fellow on a meeting aimed at strengthening the capacity of staff in HIV surveillance at Coast General Hospital.

The HIV surveillance gaps were identified during Organization capacity assessment (OCA) report done by University of Nairobi in collaboration with management science for Health done in 2016. The project involved identifying the reason for HIV surveillance system not optimally used and non-functional multidisciplinary team on surveillance. The reasons shared include: lack of quorum during planned meeting, Medical Staff were not motivated, members were tired of many meeting regularly and delayed implementation of resolution of the previous meeting and some members were transferred to other department.

The project team, staff and partners at CGH participated in re activating multidisciplinary quality HIV surveillance team which consisted of clinician, nurses, health record officer, laboratory technologist, public health officers, HIV counsellors, hospital administrators. Five monthly meetings on Quality HIV Surveillance were held and resulted in success in HIV care. Participated in planning for HIV surveillance activities, sensitization and training of staffs at service delivery points on their roles in Quality HIV surveillance. The team members Participated in developing of standard operating procedures on HIV surveillance, participated in training and enrollment of eight staff on UHIV online short courses and three had completed at least one course to improve their knowledge on HIV surveillance activities. Two CCC staff were selected visited KNH and trained on UHIV Medium term course at University of Nairobi. More than 50 staff were sensitized on UHIV courses. Resources were obtained for project Staff,which included funds for refreshment during training allowances and materials including stationaries for project.

4.4 To enhance retention of HIV patients on scheduled medical appointments among patients attending Coast General Hospital HIV clinic

The fellow participated in identifying and recruiting of two HIV staff who went through HIV care training at UON on HIV care. Intervention to reduce the loss to follow up was implemented by scaling up early recognizing those at risk of getting lost to care follow up for example those who missed to attend scheduled HIV clinic were tracked, offered intensive adherence counseling, psychosocial support and involved staffs/ community members to assist in tracking, by calling or visiting them and re engagement them to HIV care and having complete records of the patients (Check table three). Assessment and identifying patients who were at risk of failing to adhere to treatment guidelines before initiation of treatment for example drug users and psychiatric patient

were given intensive adherence counseling and car education. Equipment bought was one laptop and one printer by the mentor using UON UHIV facilitation money. Stationery and monthly airtime for project implementation was availed. Three mobile phones and three computers were procured by Afya Pwani.

Figure 4.5 Equipment bought by UON UHIV Funding

Figure 4.5 shown equipment bought for facilitation of UHIV fellow in meeting his objectives were: one laptop and one printer using UON UHIV fellows' facilitation money.

Figure 4.6 Dr Otieno HIV/ TB expert, appreciating fellow experiential learning and project outcome

4.5 Outcome of the Multidisciplinary management of HIV

The data in table 4.4 shows clearly the level of performance in relation to attendance of clinic appointment. There was multidisciplinary involvement by administrators, staff and partners in management of HIV services. The data shows the improvement in outcome of HIV care at CGH.

Table 4.4 HIV Testing and enrolment in care data for 3 months of the (2018) at CGH

HIV Testing data for 3 specified months of the current quarter (2018) at CPGH				
1.1 HIV Testing	July	August	September	Total
Tested for HIV	1177	1082	1034	3293
HIV Positive	64	40	48	152
Enrolled in Care; This Facility	45	29	37	111
Enrolled in Care; Other Facility	19	10	6	35
Total Enrolled in Care	64	39	43	146
% Enrolled in Care	100%	98%	90%	96%
Died	0	1	5	4%

4.5.1 HIV Testing and enrolment in care data for 3 months of the (2018) at CGH

The table 4.4 shows 96% of patient who tested HIV positive were enrolled to HIV care. Four percent were confirmed dead.

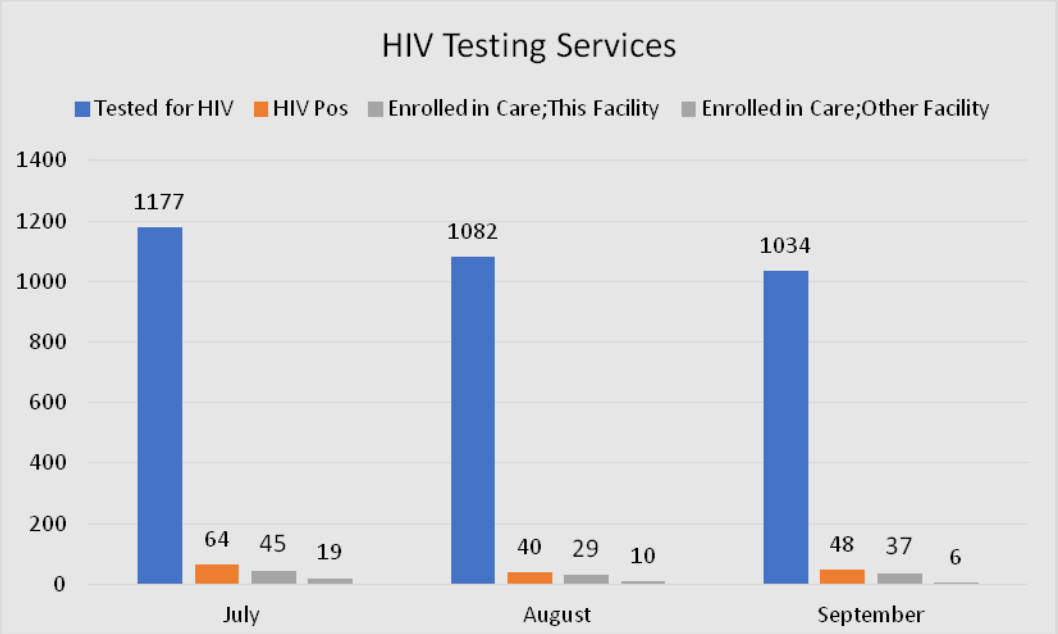

Figure 4.7 HIV testing services

Figure 4.7 shows high a number of clients is tested who HIV during the three months. Majority of HIV positive client are enrolled were enrolled in care at CGH

Table 4.5 Retention of patient on ART from July 2018 to September 2018

Retention On HIV care from July2018 To September 2018					
Month	Current on ART month before Reporting month	Started on ART in the Reporting month	Expected Current	Actual Current on ART	% on ART
July	4167	38	4205	4175	99.3%
August	4175	29	4204	4184	99.5%
September	4184	36	4220	4197	99.5%

4.5.2 Retention of patient on ART from July 2018 to September 2018

Table 4.5 Retention of patient on ART from July 2018 to September 2018 is high. More than 99% of our clients are on HIV drug at the facility.

Table 4.6 The PLHIV estimates for CGH and on ART as at end of the reporting period (Source: Sub county team for the PLHIV estimates and MOH 731 for Current on ART in 2018)

ART Coverage 2018	July	August	September	Average
PLHIV Coverage(Estimates)	5396	5396	5396	5396
Currently on ART	4175	4184	4197	4185
Gap	1221	1212	1199	1211
Percentage	77%	78%	78%	78%

(Source: Sub county team for the PLHIV estimates and MOH 731 for Current on ART in 2018)

4.5.3. The PLHIV estimates for CGH and the current on ART

Table 4.6 reports the average estimate of PLHIV was 5396 by the year 2018, of which the ART coverage was 78%. There was approximately 1211 people who are estimated to be missing ART drug.

Table 4.7 Proportion of clients on ART with a viral suppression after 12 months of follow up at CGH Sept2017-Sept 2018

Viral Suppression	**Male**	**Female**	**Total**
Patients Eligible for VL Testing	1478 **(100%)**	2681**(100%)**	4159**(100%)**
No. of Patients tested for VL (last one Year)	1066 **(72%)**	2006 **(75%)**	3072 **(74%)**
No. of Patients VL Suppressed (Last one year)	970 **(91%)**	1885 **(94%)**	2855 **(93%)**

4.5.4 Proportion of clients on ART with a viral suppression after 12 months of follow up at CGH Sept2017-Sept 2018

Table 4.7 reports that 4159 patients were eligible for viral load testing. Approximately 3072 (74%) patient were tested for viral load for the last one year. Viral load suppression were more in females than males.

Table 4.8 Viral Load Suppression among patients on ART at CGH

VIRAL LOAD SUPPRESSION AMONG PATIENTS ON ART AT CGH		
By September 2017	84% (2062)	Among tested (2455)
By September 2018	93% (2855)	Among tested (3072)

4.5.5 Viral Load Suppression among patients on ART at CGH

Table 4.8 reports that the Viral Load Suppression among patients on ART by September 2017 as 84% with 93% viral suppression by September 2018. The table also shows more patients were tested for Viral Load Suppression in year 2018 as compared to 2017.

4. 6 To recommend the best strategies to enhance retention of patients on HIV care

The following recommendation were proposed from this project

I. Conducting Health talk on positive way emphasize on importance of clinic appointment keeping

II. Having complete up to date patients contact/ care giver

III. Having regular telephone calls and reminders on scheduled date especially risk client to miss the appointment

IV. Discuss with patient and agree on the next clinic date

V. Home tracking through , good contacts maps

VI. CHWS empowered to conduct home visit

VII. Intensive adherence counselling

VIII. Update data on patients status

IX. Clinician to give extra drugs for two days and consider public holidays

Figure 4.8 Dissemination of project finding at CGH boardroom

5.0. PROJECTED IMPACT

Improved health outcomes and wellness of people living with HIV evidenced by viral load suppression**.**

6.0. LESSON LEARNT

I. Conducting Health talk on positive way emphasizing on importance of clinic appointment keeping

II. Having complete up to date patients contact or care giver and having regular telephone calls and reminders on scheduled date especially risk client to miss the appointments.

III. Discuss with patient and agree on the next clinic date

IV. Home tracking through , good contacts maps

V. CHWS empowered to conduct home visit

VI. Intensive adherence counselling and update data on patients status

VII. Combination of these will lead to retention of patient on HIV care and get benefits of HIV care

REFERENCES

Braitstein P., Songok J., Vreeman RC., Wools-Kaloustian KK., Koskei P., Walusuna L., et al. (2011). 'Wamepotea' (they have become lost): outcomes of HIV-positive and HIV-exposed children lost to follow-up from a large HIV treatment program in western Kenya. J Acquir Immune Defic Syndr.;57: 40–46.

Braitstein, P., Katshcke, A., Shen, C., Sang, E., Nyandiko, W., Ochieng, V.O., et al. (2010). Retention of HIV-infected and HIV-exposed children in a comprehensive HIV clinical care programme in western Kenya. Tropical Medicine and International Health, 15(7), 833–841.

Brennan AT, Maskew M, Sanne I, Fox MP (2010). The importance of clinic attendance in the first six months on antiretroviral treatment: a retrospective analysis at a large public sector HIV clinic in South Africa. *J Int AIDS Soc.* 13:49.

Centers for Disease Control and Prevention (2015). Using HIV surveillance data to support HIV Care Continuum. https:// effective interventions.cdc.gov/en/HighImpactPrevention /PublicHealth Strategies/DatatoCare.aspx. Published 2015. Accessed November 12,2015.

Coast General Hospital, (2017). Comprehensive Care Centre HIV register, Mombasa County,Kenya.

Deeks SG, Lewin SR, Havlir DV (2013). The end of AIDS: HIV infection as a chronic disease. Lancet;382(9903):1525-1533.

Horwood C., Voce A., Vermaa k K., Rollins N., Qazi S., (2010). Routine checks for HIV in children attending primary healthcare facilities in South Africa: attitudes of nurses and child care-givers. Soc Sci Med.70:313–320.

Horstmann E., Brown J., Islam F., Buck J., Agins B.D., (2010). Retaining HIV-infected

patients in care: Where are we? Where do we go from here? Clin Infect Dis. 50 (5): 752-761.

Israelski D, Gore-Felton C, Power R, Wood MJ, Koopman C. (2001). Sociodemographic characteristics associated with medical appointment adherence among HIV-seropositive patients seeking treatment in a county outpatient facility. Prev Med 2; 33(5):470–475.

Kenya National AIDS county HIV Profile (2016). MOH, Nairobi, Kenya

Kerr JC., Stephens, TG., Gibson, JJ., Duffus, W.A. (2012). Risk Factors Associated With Inpatient Hospital Utilization in HIV-Positive Individuals and Relationship to HIV Care Engagement. J Acquir Immune Defic Syndr.60 (2):173-182.

Kunutsor S, Walley J, Katabira E, et al. (2010). Clinic Attendance for Medication Refills and Medication Adherence amongst an Antiretroviral Treatment Cohort in Uganda: A Prospective Study. *AIDS research and treatment.*;2010:872396

Mombasa County Government of Mombasa (2014). Mombasa County HIV and AIDS Strategic Plan: 2014/2015 – 2018/2019. Mombasa: County Government of Mombasa.

National AIDS Control Council and National AIDS and STI Control Programme. Kenya HIV Estimates Report 2015. Nairobi: Ministry of Health.

National AIDS Control Council and National AIDS and STI Control Programme, (2014a). Kenya AIDS Strategic Framework: 2014/2015-2018/2019. Nairobi: Ministry of Health.

National AIDS Control Council and National AIDS and STI Control Programme, (2014b) Monitoring and Evaluation Framework 2014/2015- 2018/2019,

National AIDS Control Council and National AIDS and STI Control Programme, (2014c)

Kenya HIV and AIDS Research agenda 2014/2015- 2018/ 2019.

Rumptz MH, Tobias C, Rajabiun S, et al.(2007). Factors associated with engaging socially marginalized HIV-positive persons in primary care. AIDS Patient Care STDS 2007; 21(1):30–39.

SL, McClure JB, Jones GN, Brantley P.J. (2010). Predictors of outpatient medical appointment attendance among persons with HIV. AIDS Care 11(3):361-373.

Sweeney P, Gardner LI, Buchacz K, et al, (2013). Shifting the paradigm: using HIV surveillance data as a foundation for improving HIV care and preventing HIV infection. Milbank Q. 91(3):558-603

APPENDICES

Fellow Mr Peter Kirimi Mwiti and my Mentor Dr Peter Francis Otieno during HIV Discussion section

CONCLUSION

Satisfactory report of staff participation in use of strategies to enhance the retention of patients on HIV Care and report showed improvement in retention of patients on care. Currently the hospital has functional surveillance team in place. There is evidence of improved HIV care. Project activities have been incorporated in day to day operation of HIV programme at CCC, CGH.

Recommendations

The recommendation is based on the discussed findings and the conclusion that have been drawn; Recommendations for consideration are as follows:

A) Recommendations to Coast General Hospital Management team/Staff

1) Conducting Health talk regularly to HIV patients and their caregivers and emphasizing on importance of clinic appointment keeping aimed at ensuring all HIV infected person attends all scheduled clinic appointment to achieve the UNAIDS 95;95;95 target indicators, hence health individual and population.

2) Having complete up to date patients contact/ or care giver on Hospital registers and having regular telephone calls and reminders on scheduled date especially risk client likely to miss the appointment.

3) Community Health workers to be empowered to conduct home visit to track patient who misses to attend clinic appointment.

4) The Hospital should continue strengthening HIV services through capacity building of the staff and management team in HIV surveillance.

B) The County HIV Management Team

I. The county HIV Management Team to increase HIV budget for sustainability of the programme as majority of staff are employed by partner (Afya Pwani).

II. The County to strengthen the partnership with other Health supporting partners in HIV management

C) Recommendations to University of Nairobi Institute of Tropical and Infectious Disease

University of Nairobi Institute of Tropical and Infectious Disease (UNITID) through University of Nairobi HIV Capacity Building Program to continue partnering with Coast General Hospital in supporting the HIV programme and HIV fellows during training.

D) Recommendations for policy making

The project recommendations may be utilized by other Counties in strengthening HIV surveillance to enhance retention among patients attending Comprehensive Care Centers in Kenya. The findings of this project may be utilized to form a basis for research on retention of patients on HIV care.