OPTIMIZED RETENTION IN CARE MODEL FOR NEWLY DIAGNOSED HIV CLIENTS IN KISUMU COUNTY REFERRAL HOSPITAL.

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DECLARATION

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

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

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Name: Dr. Anne Ndiritu, Phd

DEDICATION

To the Almighty God for making everything possible, my family for moral support and for giving me a reason of keeping on with the efforts to complete this project.

ACKNOWLEDGEMENT

I want to thank the Kisumu County Health Management Team, project participants and the entire Kisumu County Referral Hospital for allowing me to implement my project and their willingness and readiness to participate. I also thank my University supervisor, Dr. Anne Ndiritu for her guidance, continuous encouragement and motivation to complete the project. My special gratitude goes to my project mentor Mr. Mohammed Otemi for his support, encouragement and timely review of my project related work. I extend my gratitude to the University of Nairobi Institute of Infectious and Tropical Diseases for facilitating the whole project implementation process. I sincerely thank my employer the County Government of Homabay for granting me an opportunity to undertake this project. I also thank my uncle Zablon, sisters Charity and Knight, brothers Dennis and Gilham, Dad and Mum, James Omwoyo and Mary Kwamboka for having instilled in me the spirit of hard work and given me a good foundation. I can't forget to thank Kisumu County HIV and AIDS Coordinator, County Health Records Officer, KCRH Medical superintendent, CCC in Charge, Medium term fellows, CCC clinicians, peer educators, linkage officers, health record officers, HTS providers, CCC clients and Community Health Volunteers for the support to make the project implementation smooth and successful.

May God bless you all!

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LIST OF ABBREVIATIONS

CCC	Comprehensive Care Centre
CHMT	County Health Management Team
eMTCT	Elimination of Mother-to-Child Transmission of HIV
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HTC	HIV Testing and Counseling
KASF	Kenya AIDS Strategic Framework
KCRH	Kisumu County Referral Hospital
KP	Key Population
LTF	Lost to follow up
MSH	Management Sciences for Health
NACC	National AIDS Control Council
NASCOP	National AIDS and STIs Control Program
OCA	Organization Capacity Assessment
OPD	Out Patient Department
PLHIV	People Living with HIV
PLP	Participating Local Partner
PP	Priority Population
PrEP	Pre Exposure Prophylaxis
PSSG	Psycho Social Support Group
PWIDs	People Who Inject Drugs
RIC	Retention In Care
UHIV	University of Nairobi HIV capacity building program
UNITID	University of Nairobi Institute of Tropical and Infectious Diseases
VMMC	Voluntary Medical Male Circumcision

DEFINITION OF KEY TERMS

Epidemic	An outbreak of a disease that affects many people
Incidence rate	A measure of the occurrence of new cases of a disease in a population.
Prevalence rate	A measure of the existing cases of a disease in a population.
Retention in care	Continuous engagement in appropriate medical care.
Psychosocial support	A non-therapeutic intervention that helps a person to cope with stressors.

PROJECT SUMMARY

Kisumu County is one of the 47 counties in Kenya. The county has an urban and rural background with a rich ethnic, racial and cultural diversity. The County has seven sub counties with fishing, farming and trade as the major economic mainstay. In 2015 The Kenya National HIV prevalence among people aged 15-49 years was estimated to be 5.9% with Kisumu having a prevalence rate of 19.9%, the county ranked third among the 9 counties that accounted for the highest number of new HIV infections in the Kenya. Kisumu County Referral Hospital is one of the high volume health facilities which offers HIV services in Kisumu city. KCRH has 17600 clients ever enrolled in HIV care with 5400 active HIV clients. This number could be higher were it not for clients who drop out right after HIV diagnosis. The metropolitan environment with mass transit of people makes it hard to track and retain the newly HIV diagnosed clients in HIV care and treatment posing a challenge in the achievement of 959595 UNAIDS targets for Kisumu County.

The project sought to use HIV clinic data to design and implement a retention in care model that aimed at retaining newly diagnosed HIV clients in care and treatment. The optimized RIC model was designed and piloted in KCRH for 6 months. Over that period, cases of newly diagnosed HIV positive clients who were lost to HIV care and treatment follow up reduced significantly, proving that program data can help to inform designing of innovative interventions that can significantly help to improve RIC among newly identified HIV positive clients without much strain on existing health system infrastructure.

1.0. INTRODUCTION AND BACKGROUND

1.1. The Burden of HIV/AIDS in Kisumu County and the role of KCRH

In 2015 the Kenya National HIV prevalence among people aged 15-49 was estimated to be 5.9%. Kenya's HIV epidemic was geographically diverse, ranging from a prevalence of 26.0% in Homa Bay County to approximately 0.4% in Wajir County. Prevalence remained higher among women at 6.5% compared to men at 4.7%. Counties with the highest adult HIV prevalence included Homa Bay 26.0%; Siaya 24.8%; Kisumu 19.9%; Migori 14.3%; Mombasa 7.5%; Busia 6.7%; Nyamira 6.4%; Taita Taveta 6.3%; and Nairobi 6.1%.

Kisumu County was 3rd in the burden of HIV/AIDS in Kenya with 144,303 PLHIVs after Nairobi (171,570) and Homabay (158,077). Kisumu County was also ranked second in the number of new HIV infections with 9699 new infections. Kisumu county was found to be among the 9 counties which contributed more than half of adult (2518) and children (501) AIDS related deaths in Kenya. Kisumu County ART coverage among adults stood at 68% while children at 71%. (Kenya HIV estimates 2015). This was a clear indication that a significant number of HIV infected clients were not on treatment compounding efforts to reduce the incidence rate in the County.

Despite the efforts to scale up ANC and skilled deliveries PMTCT services were still sub optimal with the need for PMTCT standing at 8957 in 2015.

The programmatic dynamics and challenges observed in the HIV epidemic in Kisumu County therefore required multi sectoral efforts and approaches to help halt the HIV trends that were observed in the County.

Table 1.1: Kisumu County HIV Profile

INDICATOR	CHILDREN	ADULTS	TOTALS
Estimated HIV prevalence		19.9%	
PLHIV	8,600	135,703	144,303
New Infections	909	8,790	9,699
Deaths due to HIV	501	2,518	3,019
Need for PMTCT		8,957	8,957
Health Facilities (Active)			199
ART Sites	122	122	122
PMTCT Sites			127
TB Treatment sites			126

Source: Kenya HIV Estimates, 2015; DHIS, 2016.

1.2. HIV/AIDS Programs in Kisumu County, KCRH

HIV/AIDS programs in Kisumu County, like in other counties in Kenya, are guided by the 2014 Kenya AIDS Strategic Framework (KASF) (NACC and NASCOP, 2014b). In general, the programs are categorized into 5 broad themes: 1) HIV Testing and Counseling (HTC); 2) Elimination of Mother-to-Child Transmission (eMTCT); 3) Care and Treatment; 4) Voluntary Medical Male Circumcision (VMMC); 5) Special prevention programs e.g. Key population (KP) , Priority Population (PP) , People who inject drugs (PWIDs), Condom advocacy, Pre exposure prophylaxis (PrEP) etc. The interventions within these programs can be biomedical, structural and behavioral singly or in combination.

There are numerous HIV-related activities and programs in Kisumu County, majority of which are supported by development partners. The National and County Government also plays a key role in terms of human resource, HIV related supplies and service delivery related infrastructure.

KCRH was established in 1920 as an army barrack and later evolved into old Nyanza hospital. KCRH is one of the main county referral hospital sponsored by MOH and development partners with a bed capacity of 180 patients. It offers a wide range of health services including HIV care and treatment through CCC which has 5400 active clients. As one of the main actor in the provision of health services in Kisumu County, Kisumu county referral hospital offers HIV services right at the heart of Kisumu city. Due to its strategic position it has a significant number of clients who turn up for HIV services including registered HIV clients. The high workload observed in KCRH has a potential of increasing three fold if it were not for clients who drop out right after HIV diagnosis. The hospital diagnoses averagely 20 clients per week in as much as it experiences challenges associated with the metropolitan environment with mass transit of people making it hard to track and retain the newly HIV diagnosed clients in care and treatment. The nature of KCRH catchment often makes it impossible to optimize the existing linkage and retention in care strategies like the psychosocial support group mechanisms and client buddy models which works well in non-metropolitan set ups. This therefore calls for innovations and strategies that revolves around an optimized personalized client approach to close the tap of the leaking newly diagnosed HIV clients.

1.3. Problem statement

The Organization Capacity Assessment (OCA) exercise that was carried out in 2016 in Kisumu County referral hospital by the project management team of University of Nairobi HIV Capacity Building Fellowship Program and Management sciences for health (MSH) identified key gaps and gave recommendations which included need to structure HIV programming to address the needs of special groups, strengthening retention of newly diagnosed HIV clients and addressing financial management in the facility among other recommendations.

In relation to RIC, the facility had been applying the conventional PSSGs mechanisms which didn't seem to provide optimum results in the busy urban set up and hardly addressed the newly HIV diagnosed client drop out issue.

KCRH is one of the key players in the achievement of the 959595 targets for Kisumu County, however leakage of HIV diagnosed clients seemed to compromise this effort as seen in Table 1.2 and Figure 1.

Table 1.2: Enrollment trend of HIV positive clients at KCRH CCC, 2016/17

	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
Tested +ve	118	117	46	51	54	134	133	114	57	53	30	35
Enrolled	106	98	30	47	47	98	85	100	46	49	21	32
Missed	12	19	16	4	7	36	48	14	11	4	9	3

Source: Kisumu County Health Information System 2017.

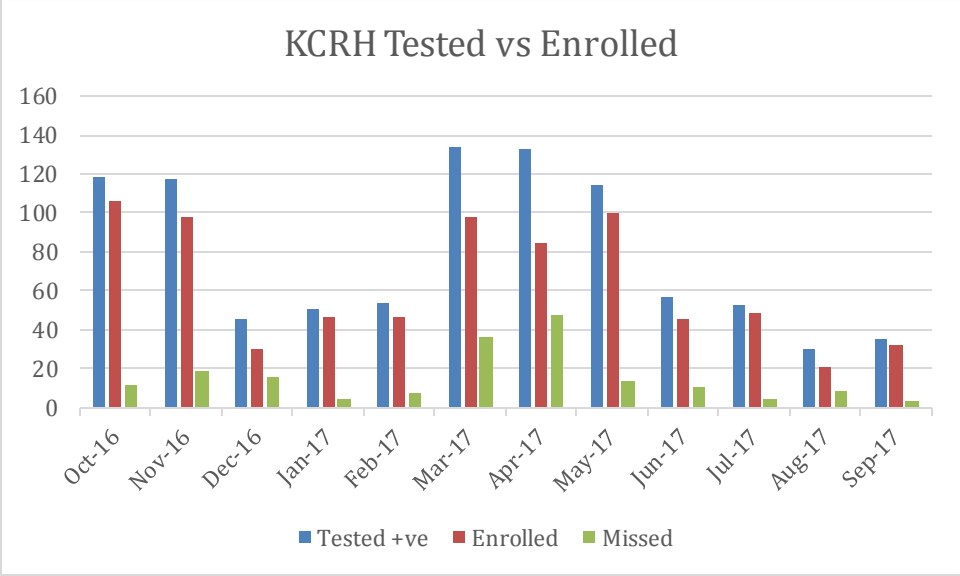


Figure 1: comparison of HIV positive and Enrollment in KCRH CCC, 2016/17

From 183 clients missed in 2016/17, most of the missed clients emanated from OPD as seen in Table 1.3.

Table 1.3: Clients Missed Vs entry point

	No. of clients missed	**Entry point (HTS)**	**%**
1.	144	OPD	78.6
2.	29	Clinics	15.8
3.	3	CCC	1.6
4.	7	No information	3.8%

Source: Kisumu County Health Information System 2017.

There was no significant difference between male and female clients missed i.e.

- 87 males i.e. 47.6 %.
- 96 females i.e. 52.4 %.

There was however a higher proportion of missed clients between 15 to 29 years old as seen in Table 1.4.

Table 1.4: Disaggregation of clients Missed by age

Age cohorts	**Clients missed**	**%**
15- 19	44	24
20-24	97	53
25-29	24	13
30-34	11	6
35-39	5	3
40-44	2	1

Source: Kisumu County Health Information System 2017.

All the missed clients were lost to follow up between the first and third scheduled visits.

The above findings pointed out to the following assumptions:

1. Clients tested at OPD and clinics presented a higher risk of LTF
2. Clients aged between 15-29 years old had a proportionately higher risk of LTF.
3. Most clients seemed to be tested at OPD i.e. 144 clients (79%) were tested at OPD, therefore pointing to the need to focus the model in OPD for substantial impact.
4. Most clients were lost between 1st and 3rd scheduled visits.

The above factors therefore were key considerations that informed the project of the departments and clients to target.

RIC in KCRH therefore was a priority that had to be addressed as a way of helping to steer the county towards the 959595 targets.

The project endeavored to design an optimized retention in care model revolving around support to the newly HIV diagnosed client in terms of optimized enhanced adherence counseling, prompt structured follow up and patient education with eventual weaning off to the stable expert patient group for continued management among routine CCC clients.

The project outcomes were envisioned to be key in supporting policy making around restructuring HIV programs to respond to the challenges associated with RIC in urban set ups such as Kisumu City.

1.4. Project Goal, Objectives, Outputs and Outcomes

The overarching goal of this project was to support Kisumu County Government in meeting their 959595 targets by applying an optimized retention in care model that would help in retaining the newly diagnosed HIV clients in the continuum of care in the Kisumu County referral hospital.

The specific objectives:

1. To conduct a situation analysis regarding retention in care in Kisumu county and Kisumu county referral hospital.
2. To develop an optimized retention in care model for newly diagnosed HIV clients at KCRH.
3. To pilot an optimized retention in care model for newly diagnosed HIV clients at KCRH.

The project outputs:

1. A situation analysis report regarding RIC in Kisumu county and KCRH
2. A retention in care model for newly diagnosed HIV clients in KCRH.
3. An implementation methodology outlining institutional, human resource and capacity building necessary for realization of optimal RIC outcomes.

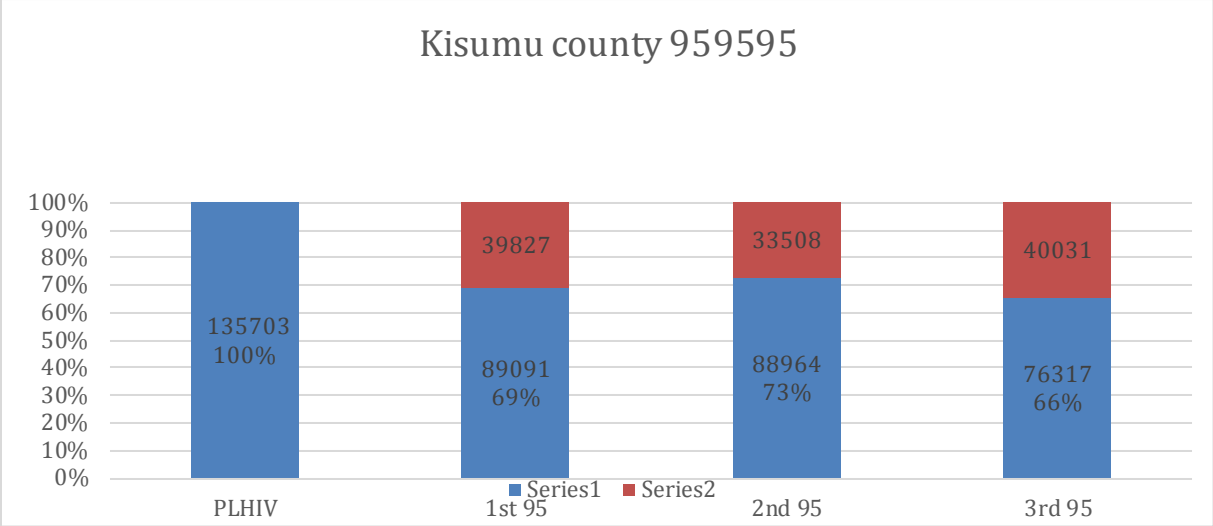
The project outcomes:

1. Increased number of newly diagnosed HIV clients retained in the continuum of care within KCRH.
2. Reduced number of clients lost to follow up.

3. Enhanced capacity of the KCRH staff in management of sealing newly diagnosed HIV clients.

1.5. Project Justification

Kisumu County had a significant number of clients testing positive who were never linked to care. These numbers were majorly contributed by high volume facilities like KCRH. This in turn constrained the achievement of the 959595 targets as seen Figure 2:

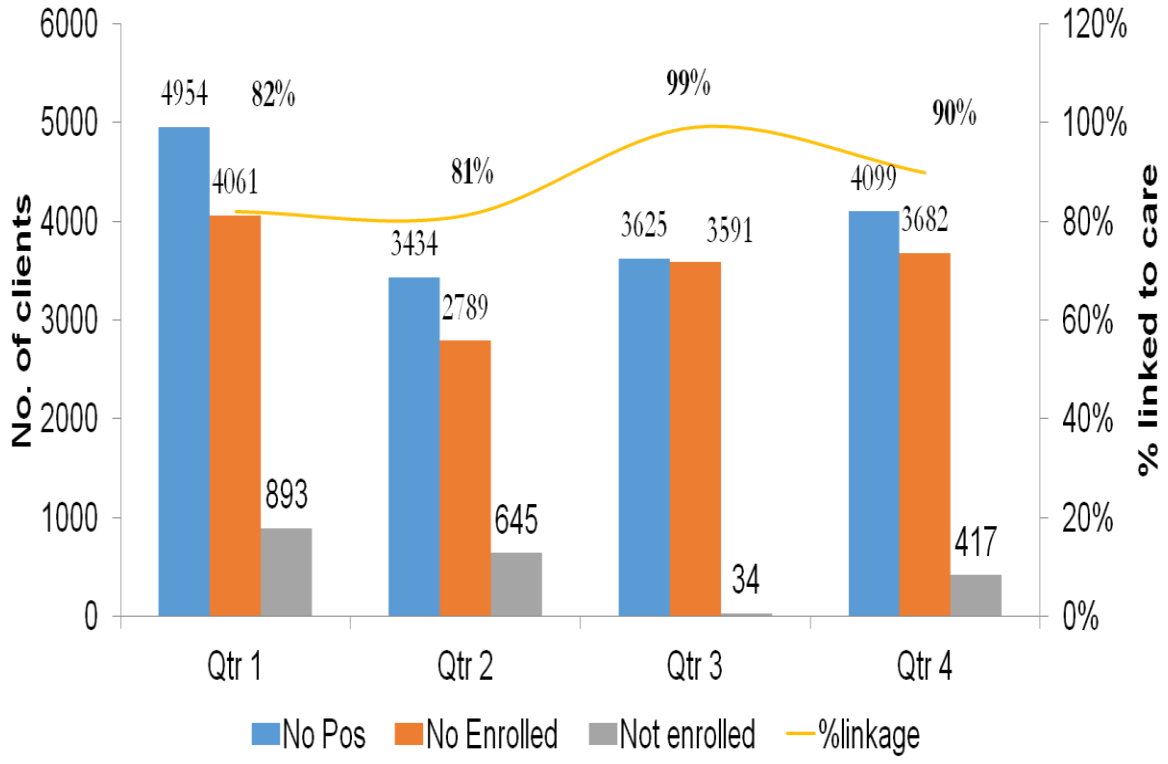


Source: Kenya HIV Estimates Report 2015.

Figure 2: Kisumu County 959595 cascade

With the 1st 95 standing at 69%, 2nd 95 at 73% and 3rd 95 at 66% it was clear that much needed to be done to close the gaps right from testing i.e. 1st 95.

Retention in care picture in Kisumu County similarly portrayed gaps arising from leakage of significant HIV positive clients quarterly to the tune of 1989 clients in 2017 as seen in Figure 3.



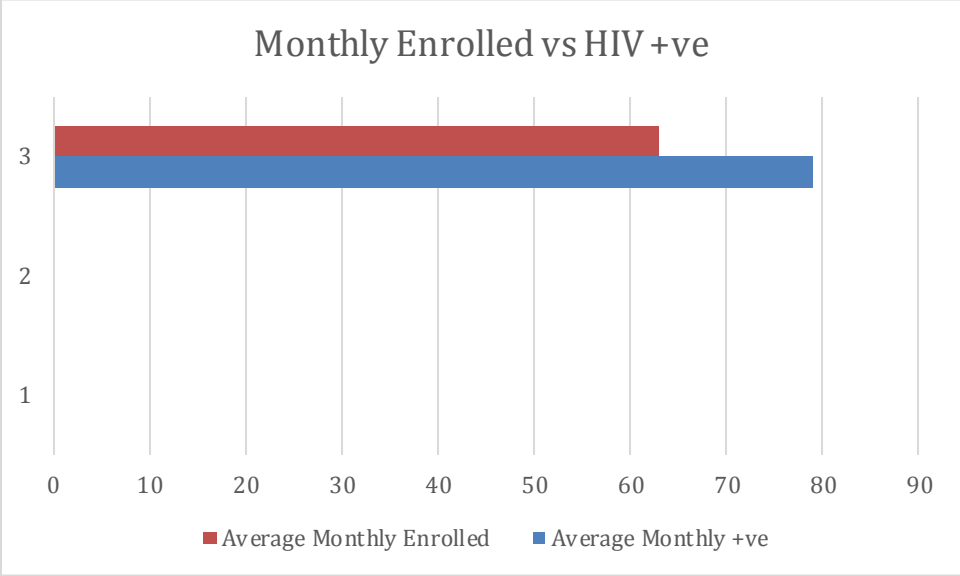
Source: Kisumu County Health Information System 2017.

Figure 3: RIC trend in Kisumu County 2017

KCRH hospital recorded 183 HIV positive clients who were never enrolled between October 2016 and March 2017. In average the facility diagnosed 79

HIV positive clients, enrolled 63 clients giving a leakage of 16 clients monthly (See Chart 1.4)

There was therefore a clear indication that efforts to fix KCRH RIC challenges would go a long way in improving RIC in Kisumu County and significantly amplify efforts to achieve 959595 targets (Kisumu County HMIS 2017).



Source: Kisumu County Health Information System 2017.

Figure 4: KCRH Average monthly enrollment 2017

2.0. PROJECT IMPLEMENTATION METHODS AND MANAGEMENT

2.1. Applied Model

Implementation of this project laid focus on the most vulnerable clients as per the situation analysis that was conducted. The key vulnerability issues considered included; clients who were tested at OPD and clinics, clients aged between 15-29 years old and those clients who were between the first and third scheduled visit follow up.

The model's package of services was offered in the following order:

- Identified peer educators/HTS providers escorted clients from OPD to CCC
- HTS providers/peer educators handed over client to identified clinician upon status confirmation.
- Provision of enhanced adherence counselling and routine services as appropriate by clinician/retention officer.
- Populating the personal details of the client in the project diary for further follow up.
- Telephone follow up by retention officer/peer educator on day 2, 7 and 13.
- One Home/workplace visit to enhance adherence after day 2 before day 14 as appropriate.
- At least 3 calls before client's 2nd visit.
- At least 2 calls before clients 3rd visit.
- Tailored calls and home/work place visits to enhance adherence as per need after 3rd visit.

- Graduation to routine clinic after 4th visit unless there exists adherence concerns.

2.2. Implementation

Implementers

The key implementers of this project included: 1) UHIV Fellow as the Principal Investigator; 2) Participating Local Partner (PLP) mentor, Mr. Mohammed Otemi; 3) University Supervisor, 4) Mid-term fellows working at KCRH; 5) KCRH staff – Nurses, Clinicians, Record officers, HTS providers, Peer educators, Retention officers, Linkage officers, Community health volunteers.

Implementation processes/activities

These included:

1. Situation analysis- This was done through existing reports and desk reviews, discussions and brainstorms with CCC/OPD/special clinics staff and program officers at various levels.
2. Designing the model- Upon accomplishing the situation analysis, few team members converged in a meeting to design the model based on the gaps identified. A draft was formulated and later refined and contextualized as appropriate.
3. Implementing team members were identified and sensitized at respective specific intervals.
4. Implementation then commenced as per the following algorithm

Optimized retention in care model implementation algorithm

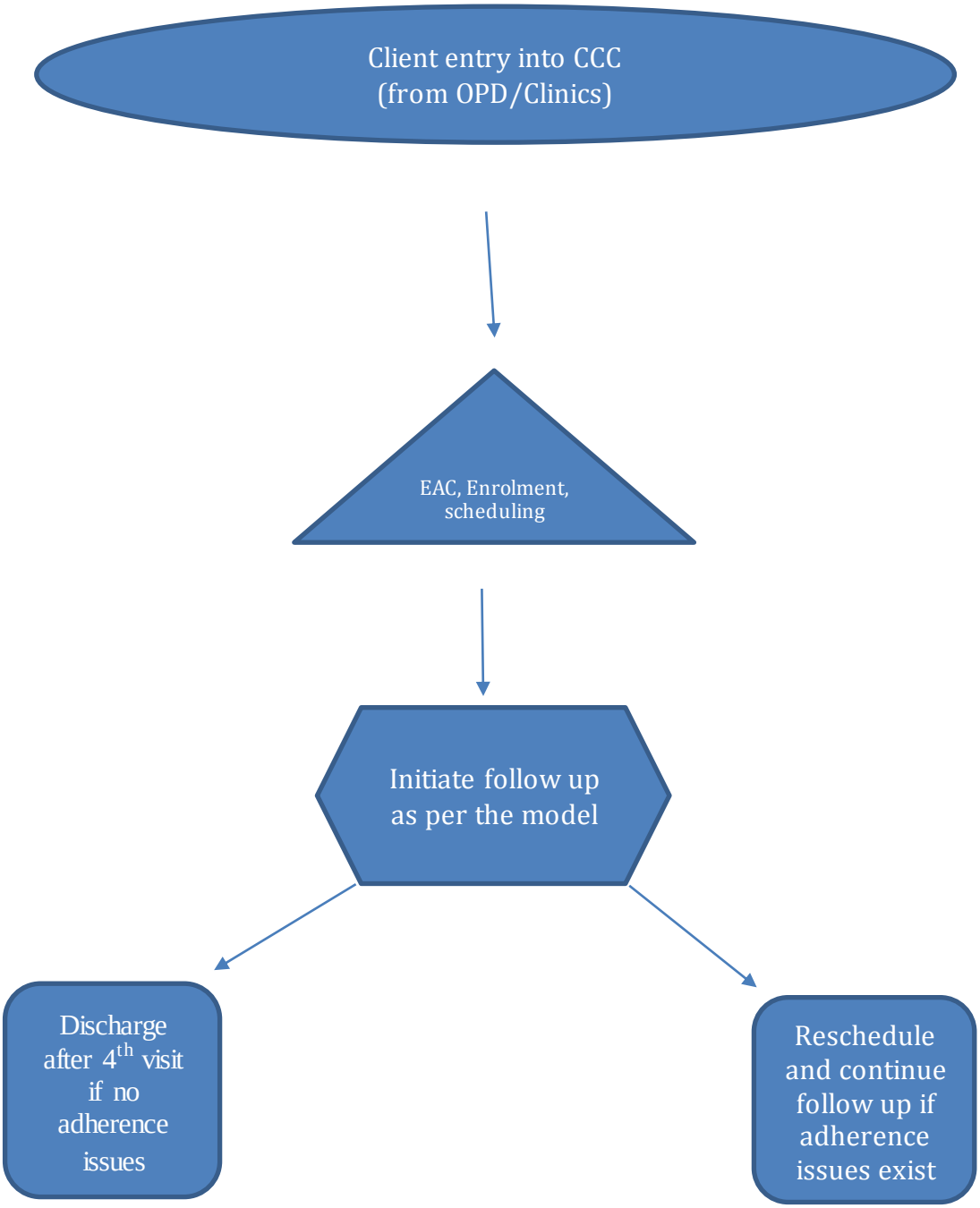


Figure 5: Optimized Retention In Care Model Implementation Algorithm.

3.0 RESULTS

The model was pre piloted in September 2018 with active implementation starting in October 2018 to February 2019 with results as shown in Table 1.5 and Figure 6:

Table 1.5: Monthly performance

	HIV positive	Enrolled	Missed
September 18	72	66	6
October 18	63	61	2
November 18	67	62	5
December 18	71	60	11
January 19	93	85	8
February 19	60	54	6

A comparison of missed opportunities at baseline vs post RIC model implementation indicated a considerable reduction in missed opportunities across all months apart from January due to healthcare worker strike that was observed in January 2019.

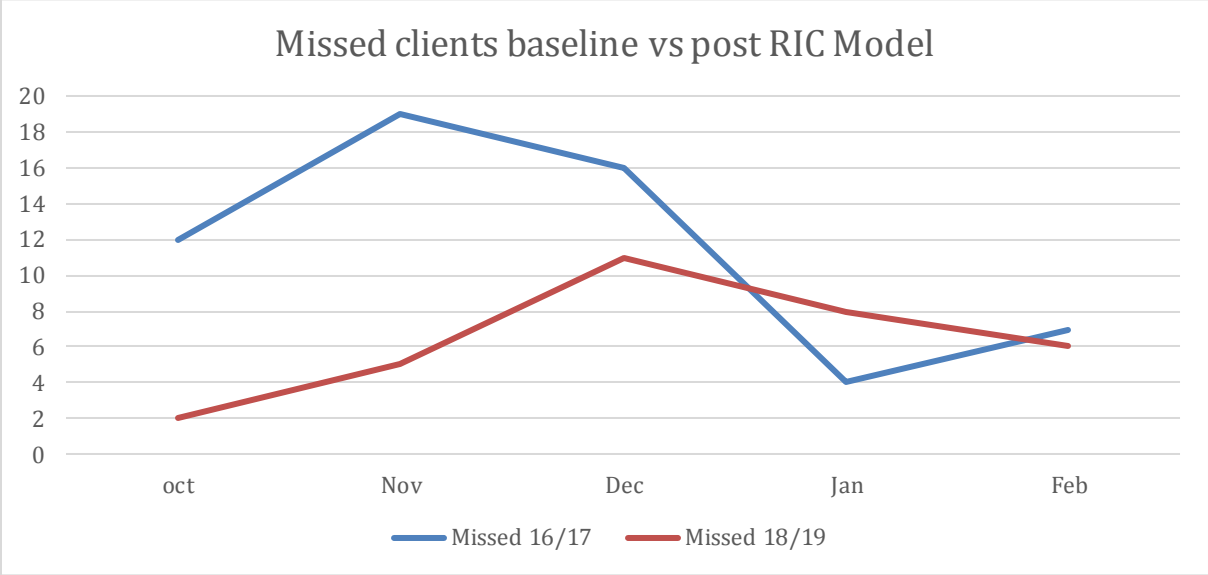


Figure 6: Comparison of missed clients at baseline vs post RIC model implementation.

4.0 PROJECTED IMPACT

The project endeavors to get 95% of eligible clients tested for HIV, 95% of HIV positive clients put on treatment and 95% of clients on treatment achieving viral suppression leading to HIV epidemiological control in KCRH and Kisumu County through optimization of the immediate project outcomes i.e.

1. Increasing number of newly diagnosed HIV clients retained in the continuum of care within KCRH CCC.
2. Reducing number of clients LTF.

3. Improving capacity of the KCRH CCC staff in managing challenges associated with RIC.

5.0 LESSONS LEARNT

1. The cosmopolitan status of the project implementation environment posed challenges in client tracking.

2. Despite the project's outcomes, there were significant health system challenges that had an impact in the expected outcomes e.g. health workers strike.

3. Optimized retention in care model for newly diagnosed HIV clients can bear optimal results if triangulated with regular RIC data review and related innovations e.g. National Unique Patient Identifier (NUPI).

6.0 CONCLUSIONS

The following conclusions were derived following successful implementation of the project:

1. Continuous use of data for decision making is very key in structuring and focusing RIC interventions.
2. Simple structured RIC algorithm can help to focus the healthcare providers on key RIC priorities.
3. Simple structured and closely implemented RIC activities helps to retain the clients on focus hence reduce possibility of being forgotten and getting lost to follow up.

4. Optimized retention in care model is simple and easy to implement with insignificant constrain on the existing health systems.

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