





## Improving Coverage in the HIV Continuum of Care Response:

Tested Changes and Guidance from Uganda

#### **NOVEMBER 2016**

This change package for improving the coverage in the HIV continuum of response was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and authored by Michael Musani Mwanga, Juliet Tumwikirize, Connie Namajji, Flavia Nakanwagi, George Aluma, Bernard Ayebazibwe, Herbert Kisamba, Esther Karamagi, and Mirwais Rahimzai of URC. It was developed as part of the Continuum of Response work in Uganda funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and carried out under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, which is made possible by the generous support of the American people through USAID.

# Improving Coverage in the HIV Continuum of Care Response: Tested Changes and Guidance from Uganda

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#### **DISCLAIMER**

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#### Acknowledgements

This change package for improving coverage in the HIV continuum of Care response in Uganda was developed for the United States Agency for International Development (USAID) by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project.

The authors would like to thank Tamara Nsubuga–Nyombi and Angella Kigonya of University Research Co., LLC (URC) for their support in presenting the changes in this package in a format that enables further learning. We also acknowledge the 50 ASSIST-supported health facilities and their staff for their energy and commitment to improving HIV prevention, care, and treatment and for providing us an opportunity to learn and improve together through the HIV Continuum of Care response intervention.

ASSIST acknowledges Drs. Shaban Mugerwa, Hudson Balidawa, and Martin Ssendyona of the Ministry of Health for the technical support and the contributions during the learning sessions. ASSIST also acknowledges local implementing partners for actively participating in the joint coaching and learning sessions and for facilitating the health facility teams. These partners include: SPEAR, MUWRP, STAR E, EC and SW, IRCU, Mildmay Uganda, and UPHS. We thank them.

The USAID ASSIST Project is made possible by the generous support of the American people through USAID's Bureau for Global Health, Office of Health Systems. The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for the USAID ASSIST Project include: Encompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communications Programs; and WI-HER, LLC.

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#### **Recommended citation**

Mwanga MM, Tumwikirize J, Namajji C, Nakanwagi F, Aluma G, Ayebazibwe B, Kisamba H, Karamagi E, Rahimzai M. 2016. Improving coverage in the HIV continuum of care response: tested changes and guidance from Uganda. Published by USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project. Bethesda, MD: University Research Co., LLC (URC).

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#### **Acronyms**

ABC Abstinence, Be Faithful, and Condom Use

ANC Antenatal Care
ART Antiretroviral Therapy

ARV Antiretroviral

ASSIST USAID Applying Science to Strengthen and Improve Systems Project

CD4 Cell Differential

CME Continuous Medical Education

CPD Continuous Professional Development

CTX Cotrimoxazole

HCT HIV Counselling and Testing

HE Health Education

HMIS Health Management Information System

HIV Human Immunodeficiency Virus HIV COR HIV Continuum of Response

HW Health Worker

IP Implementing Partner

IRCU Inter Religious Council of Uganda

MCH Maternal and Child Health

MOH Ministry of Health

MUWRP Makerere University Walter Reed Project

NMS National Medical Stores

PITC Provider-Initiated Testing and Counselling
PMTCT Prevention of Mother-to-Child Transmission

OPD Out-Patient Department QI Quality Improvement

RCT Routine Counselling and Testing

SPEAR Supporting public sector work places to expand action and responses HIV/AIDs

STAR E Strengthening TB and HIV responses in the Eastern Region
STAR EC Strengthening TB and HIV responses in the East Central Region
STAR SW Strengthening TB and HIV responses in the South western Region

TB Tuberculosis

UPHS Uganda Private Health Support Program

USAID United States Agency for International Development

USG United States Government
VHT Village Health Teams
YCC Young Child Clinic

#### **Operational definitions**

ART initiation: The assessments of clients prior to beginning them on ART drugs (ARVs)

**Change concept:** a category of changes ideas or solutions that are similar and have a common underlying thought.

<u>.</u> . . . .

Change package: An

**Changes / change idea:** Specific actions which improvement teams take that are expected to lead to improvement. Changes need to be tested to assess whether they actually lead to improvement.

**Collaborative:** A number of quality improvement teams brought together to work and learn together to rapidly achieve significant improvement towards a common goal with the intention of scaling these up to other teams.

Eligibility assessment: The processes for determining which clients are eligible for ART

**Enrolment:** The action of identifying and enrolling an HIV positive client into appropriate care as well as assigning this client a pre-ART number.

**HIV testing**: Providing the opportunity for clients to know their HIV status through a diagnostic test with quality counselling support to help them cope with a positive or a negative *test* result.

**Linkage**: The action of linking or the state of being linked and documented in the HCT register.

**Linkage Facilitators**: Trained volunteers who are compensated by the Implementing partners to support the health workers with updating of the registers as well as fulfill other basic tasks like escorting of clients from one unit to another.

**Linkage gap:** The HIV COR collaborative effort works to ensure that the clients who come to the health facility are offered a comprehensive service starting from provider initiated testing and counselling to enrolment into prevention or HIV care and treatment services.

**Mentor mothers:** HIV positive mothers who have successfully gone thought the PMTCT program with their babies being discharged HIV negative, these expert clients link and support other mothers under PMTCT through the process.

**Option B+:** Lifelong treatment for the newly diagnosed HIV Positive pregnant and lactating mothers.

PIMA machine: Portable CD4 machine that gives or provides real-time CD4 results.

**Pre-ART clients**: HIV-positive clients enrolled in care and started on septrin prophylaxis but not yet eligible for antiretroviral therapy.

**TB/HIV co-infected**: HIV-positive clients that are also infected with tuberculosis.

#### Introduction

The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project is working with the Ministry of Health (MOH), districts, implementing partners, and health facilities in Uganda through applying improvement methods to improve HIV care and family health services in primary care and referral facilities and apply lessons from pilot facilities to other sites. ASSIST Uganda is also working with the Ministry of Gender, Labor and Social Development and implementing partners to apply standards to improve services for vulnerable children.

Since April 2013, ASSIST worked with the MOH and implementing partners in Uganda through applying improvement methods to implement the HIV continuum of response (COR) across 41 districts.

The HIV COR collaborative uses a model (**Figure 1**) that illustrates the flow of clients within a health facility and highlights the major gaps within the HIV continuum of response for health facilities to address. This change package addresses the first two gaps of *linkage and coverage*.

Linkage gap Coverage gap Retention gap Wellness gap Outcomes **HIV Care and** Clinical wellness Retained in care Treatment initiated Treatment (pre-ART or ART) (Pre-ART or ART) or viral All HIV-positive suppression adults and children HIV identified Testing PMTCT initiated PMTCT HIV-free children Retained in (Option B+, and clinically well Mother-baby pairs PMTCT care mother-baby eligible for PMTCT mothers nutrition identified assessment and Mothers linked counselling) back to HIV clinic at 18 months TB-HIV Treatment initiated Retained on anti-TB treatment All TB-HIV co-infected (anti-TB drugs and TB drugs and ART adults and children ART) clinical wellness identified **HIV** prevention Safe Male Circumcision; prevention messages and BCC; condom distribution; risk reduction counseling

Figure 1: The HIV Continuum of Response Model

#### **Developing the Change Package**

The change ideas shared in this change package are a compilation of actions taken by health facility quality improvement teams that contributed to the improvement in the coverage of HIV care and treatment services for HIV-positive clients in the supported facilities. These change ideas were successfully implemented in 25 out of the initial 50 HIV COR health facilities where ASSIST was providing technical support to improve the quality of HIV care services using a quality improvement approach.

Community services including, but not limited to: adherence and retention support, nutrition and TB screening, and home-based care

For example, results recorded across 5 facilities (**Figure 2**) indicate the improvements in HIV COR work from May 2013 to August 2014.

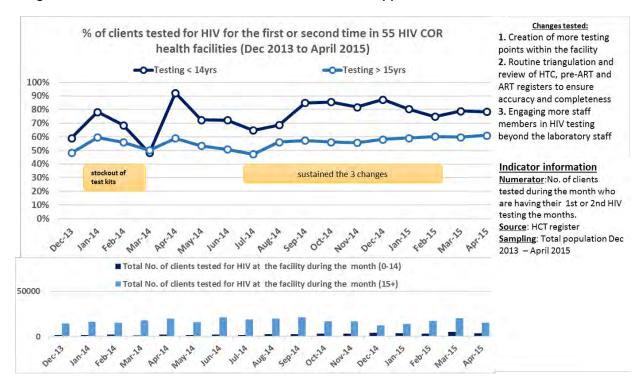


Figure 2: Number of clients tested for HIV at HIV COR-supported sites

Moreover, improvement was noted in: enrolment of HIV-positive clients into care, eligibility assessment, and ART initiation at 47 of all the 50 HIV COR implementing sites, as shown in **Figure 3**. These results are also presented in the form of a dashboard in **Appendix 1**.

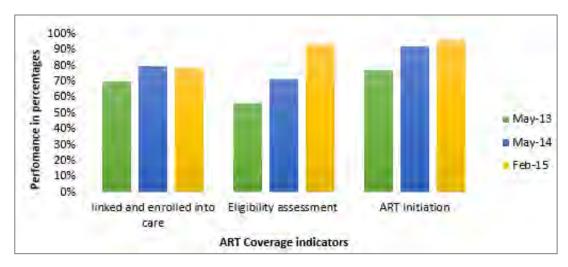


Figure 3: ART coverage indicator performance comparison between May 2013 & August 2014

These changes are a product of the innovative efforts of the health facility level staff together with the support of improvement coaches. The package highlights the five key improvement areas under HIV COR coverage and how these were implemented, namely:

- 1) HIV testing and counselling/identification of HIV-positives,
- 2) Linkage to care,
- 3) Enrolment into care,
- 4) ART eligibility assessment, and
- Initiation on ART.

#### How to Use this Change Package

A change package is a compilation of tested and tried, evidence-based set of actions which improvement teams implement that are expected to lead to improvement in performance of a specific focus area.

The information provided in this change package is intended as a simple guide for health facility improvement teams working to improve <u>HIV care coverage</u> in the HIV continuum of response. These ideas are focused around several care steps which the teams carry out to improve testing, linkages to care, enrolment into care, eligibility assessment, and ART initiation.

Teams should select changes which they think will lead to improvement of coverage in their health facility, adjust them as necessary, and then test them on a small scale to see how they work.

#### **How Changes Were Harvested and Created**

To facilitate systematic gathering and documentation of this change care package, a harvest meeting was organized. This was a two-day meeting that brought together a total of 25 participants from 22 participating facilities to reflect on their results/performance, identify the successful and unsuccessful changes, and agree on the most effective changes.

To have full participation and representation, the participants were divided into five small groups to cover the five areas these teams sought to improve under coverage, namely HIV testing, linkage, enrollment, ART eligibility assessment, and initiation on ART. In small groups, teams discussed the changes which they had tested; they related these changes to the data they had to ascertain the magnitude of improvement in order to identify the successful and unsuccessful changes. These changes were discussed further in a plenary session to clearly state the changes and exhaust the list generated. The groups then further discussed in detail how the specific changes were implemented and cited if any additional resources were required; this discussion was aimed at developing a "how-to" guide for each change. Change concepts which have been described in greater detail in the change package were then developed.

**Table 1** lists the sites, corresponding district, and implementing partner that supported each site.

Table 1: District sties that participated in the harvest meeting

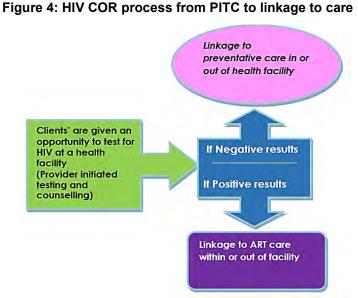
District	Sites that participated in the harvest meeting	Supporting implementing
Alebtong, Apac, Kitgum, Lamwo	Alebtong HC IV, Apac Hospital, Kitgum General Hospital, Padibe HC IV	NUHITES
Kamuli, Luuka, Namutumba	Nankandulo HC IV, Irongo HC III, Magada HC III	STAR EC
Arua, Masindi Rakai.	Kuluva, Kinyara HC III, Kyotera Medical Centre	UPHS
Bulambuli Busia, Pallisa Mbale	Buginyanya HC III, Masafu Hospital, Lunyo HC III, Busiu HC IV, Kamuge HC	STAR E
Mubende	Kassanda HC IV	MILDMAY
Ibanda Kanungu, Ntungamo,	Ruhooko HC IV, Kihihi HC IV, Itojo Hospital, Kitwe HC IV	STAR SW
Kampala	Murchison Bay Hospital	SPEAR
Kayunga	Kayunga Hospital	MUWRP

#### Improving Provider-Initiated HIV Testing and Counselling (PITC)

Across all supported facilities, quality improvement (QI) teams started integrating the HIV COR into provider-initiated testing and counselling (PITC) (**Figure 4**) by introducing changes in creating testing points, improving documentation, and engaging staff members in HIV testing (**Figure 5**).

To start improvement work on PITC and offering the HIV COR, teams initially focused on improving documentation in the registers. Poor documentation was the biggest gap across all facilities—a lot of work was done to provide services, yet it was not recorded in the registers.

The next step focused on the importance of knowing clients' HIV status as the entry point for improving coverage indicators; the teams worked to ensure that HIV testing was carried out within the facilities. This was also achieved through collaborative efforts with the implementing partners who supported and ensured that HIV test kits were available at the health units.



Clients internally linked within the facility were then enrolled into pre-ART, assessed for eligibility for ART, and if found eligible, were initiated onto an ART regimen.

Figure 5: QI changes tested by HIV COR-supported facilities to improve PITC service coverage

Creation of more testing points within the facility

Routine triangulation and review of HTC, pre-ART and ART registers to ensure accuracy and completeness.

Engaging more staff members in HIV testing beyond the laboratory staff.

#### Driver diagram for improving the HIV continuum of care coverage

QI teams used a driver diagram while implementing the HIV COR improvement work to help organize and track information on proposed activities so that the relationships between the aim of the improvement work and the change concepts were made clear.

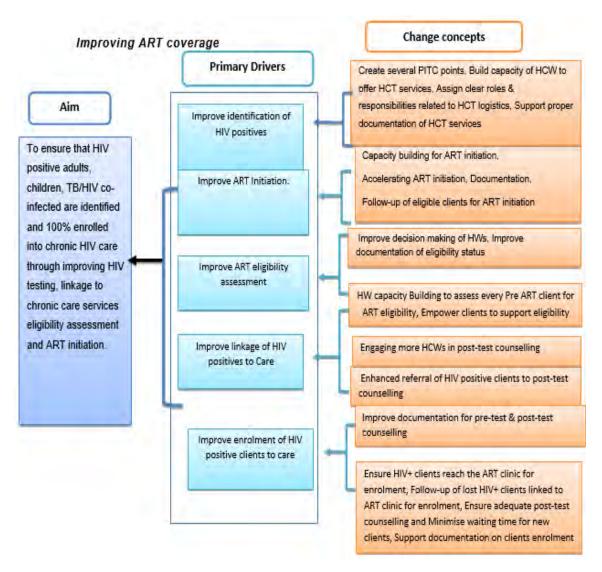
In the driver diagram below in Figure 6:

- 1. The aim is the overall outcome of ART coverage,
- 2. The primary drivers are the improvement areas or processes that we have learned must be addressed to achieve improved ART coverage.
- 3. The change concepts are the general areas that can be improved through a variety of change ideas.

**Appendix 2** of this change package for HIV coverage presents change ideas that facility teams may consider trying in their local setting to:

- 1) Improve HIV testing and counselling and identification of HIV-positive clients
- 2) Improve linkage of newly identified HIV-positive clients to care
- 3) Improve enrolment of HIV-positive clients into care
- 4) Improve ART eligibility assessment for every Pre-ART clients
- 5) Improve initiation of clients on ART.

Figure 6: Driver diagram for improving the HIV continuum of care coverage



## Appendix 1: Dashboard Showing Facility Performance for the 50 COR Sites Supported by the USAID ASSIST Project





#### HIV CONTINUUM OF RESPONSE ADULT DASH BOARDS USAID ASSIST SUPPORTED SITES IN UGANDA

			USAID ASS
	Sessine - May 2013		
o. of site	%positive clients linked to care	%Eligible started on ART	Co-Infected enrolled on ART
1			
2			
3	50	14	0
4			
5			
6	ND	82	100
7	100	38	SO
8	69	71	96
9	ND	23	38
10	ND	ND	67
11	0	77	92
12	80	53	15
13	57	74	71
14	33	50	67
15	76	ND	35
16	ND	60	38
17	ND	ND	ND
18	31	NA.	75
19	97	92	67
20	19	10	57
21	8	57	100
22	98	80	67
23	18	79	100
24	100	100	NA.
25	80	38	NA.
26	67	89	0
27	83	100	NA.
28	21	68	43
29	75	94	72
30	97	90	82
31	100	64	100
32	78	7	100
33	47	43	100
34	75	100	33
35	67	83	NA.
36	50	89	0
37	50	100	67
38	0	92	86
39	58	100	44
40	ND	88	64
41	81	94	87
42	71	30	57
43	ND	93	38
44	63	88	25
45	84	NA.	22
46	ND	93	43
47	6	74	31
48	15	30	40
49	92	81	50
50	NA.	79	0

ED SITES IN UGANDA			
Мау 2014			
%positive clients linked to care 16 yrs	%ART Eligibility Assessment 16 Yrs	% Bigible started on ART 16 Yrs	Co- Infected enrolled on ART 16 yrs
100	100	100	NA
ND	91	83	100
100	100	88	100
93	100	100	100
70	95	100	100
83	98	ND	70
100	100	100	NA
100	97	100	100
37	95	80	ND
86	71	96	67
60	100	100	100
100	73	78	100
68	100	36	100
100	100	83	NA
100	97	84	67
100	100	94	100
100	93	88	100
100	88	92	0
100	100	100	NA
37	92	67	100
69	88	65	NA.
38	13	81	NA NA
100	92	100	NA NA
100	100	100	60
100	50	100	NA
100	92	88	100
100	79	89	NA NA
43	85	88	100
100	82	94	75
96	97	92	75
100	90	100	100
ND	89	97	NA.
81	100	90	100
100	100	100	NA.
100	75	100	NA
75	88	39	84
100	100	100	NA.
92	55	30	100
90	80	100	100
65	100	96	100
81	98	97	100
75	98	35	100
44	93	100	100
86	93	64	0
100	86	100	100
100	91	100	100
65	92	83	100
ND	87	98	75
93	84	91	100
100	81	92	NA.

#### **Appendix 2: Detailed Change Package for Improving Adult COR**

Concept 1: Increase opportunities for PITC services

## 1. Change ideas to improve HIV testing and counselling and identification of HIV-positive clients

Concept 1. Increase apportantics for 1 110 services			
Change Idea Reason for the change		How the change was implemented	
Creating new tes points at different points.		Prioritize care points for testing within the facility,	

Assign a focal person to closely monitor the testing and ensure that it's carried Integrating HCT in all Providing HCT services at only testing out professionally. services including points at facilities was creating many missed opportunities for service access outreaches

These testing points can be introduced in OPD, YCC, ANC and the wards

### Concept 2: Assign clear roles & responsibilities related to HCT logistics

Change Idea	Reason for the change	How the change was implemented
Assigning a laboratory technician to do timely ordering of kits  Assigning in charges order for test kits to the wards and all other	Frequent Stock- outs of test kits at various facilities hindering provision of HCT services to all clients at all times. Even when the ordering was timely, it was wrongly done.  In larger health centers the testing point	<ul> <li>Through the QI meetings, the roles of the laboratory staff were clarified.</li> <li>A laboratory technician was assigned the responsibility of submitting orders before the National Medical Stores (NMS) deadline and supported by the facility in-charge to ensure it was done.</li> <li>The test kits are made available to the ward in charges to supervise and ensure all clients in the respective unit are tested for HIV.</li> </ul>
entry points	are many and the its difficult for the lab technician to carry out or coordinated the testing	The laboratory technician takes the report monthly from the wards
Shifting responsibility for ordering HIV test kits to departments for the ward in-charges to manage	Delayed submission of orders because Only lab ordered for the test kits	<ul> <li>Provide each department with stock cards so that they can order directly from the store and be responsible for accounting for the HIV test kits.</li> <li>Laboratory technician then compiles the monthly reports on HIV testing from the ward in-charges.</li> </ul>

Concept 3: Support proper documentation of HCT services			
Change Idea	Reason for the change	How the change was implemented	
On job mentorship and Orientating of new staff on how to update registers	Incomplete documentation in the MOH registers was a major gap across all health facilities  Some clients already on ART were being re-tested for HIV and not all children needed HIV testing because they were not eligible.	<ul> <li>The QI teams identified persons (health workers) with accurate information on how to complete the different registers and they were assigned responsibility of supporting the new staffs on how to properly update the registers at the different care points.</li> <li>Then an overall focal person was selected to review the registers on a regular basis and ensure complete documentation is done.</li> <li>Some sites conducted a CME on proper updating of the registers to all health workers.</li> </ul>	
Assigning a focal person to review HCT register for completeness	The OPD register had no section for known and unknown HIV clients.		
Introducing a column in the OPD register to capture data on HIV status		<ul> <li>The team created a new column in the OPD register to reflect Known status (K), Unknown status (U), children(C).</li> <li>Assigned focal person to supervise the documentation in the register on a daily basis.</li> </ul>	

## 2. Change ideas to improve linkage of newly identified HIV-positive clients to care services

Concept 1: Improve regular updating of registers, pre-test & post-test counselling			
Change Idea	Reason for the change	How the change was implemented	
Experienced staff demonstrating the filling of the HCT register	Most health workers were not knowledgeable on how to fill out the HCT register  Registers not updated on time	<ul> <li>The in-charge of the ART clinic was informed about the staffs' inability to fill out the HCT register.</li> <li>A session on filling out the register was held for the staff; thereafter staffs that were more knowledgeable and experienced with filling out the register were identified and paired with their colleagues who required continued support.</li> </ul>	
Assigning a focal person to review & update registers		<ul> <li>A focal person was identified by the QI team and trained.</li> <li>He/she was then assigned clear roles and responsibilities to regularly review and update HCT register &amp; provide feedback to the teams on the progress.</li> </ul>	

## 3. Change ideas to improve enrolment of HIV-positive clients into care

Change Idea	Reason for the change	How the change was implemented		
Physically escorting clients from HCT points to ART	Clients were not aware of where to go for enrolment due to unclear	<ul> <li>An individual (lab staff, expert client or counsellor) was assigned the role of physically escorting the identified HIV positive clients to the ART clinic.</li> </ul>		
clinics. This was more practical in low level health centres (3&4s)	flow of clients so they would get lost and give up.	This new development was communicated to the in-charge ART clinic who ensured its implementation.		
Using of referral forms (more practical in the hospital		<ul> <li>Clients identified at testing point, were provided with post- test counselling about the importance of HIV treatment and care.</li> </ul>		
setting)		The MOH referral forms were used which are in triplicates; a copy of the form was given to the client and the other shared with ART clinic team.		
		<ul> <li>Patients testing HIV positive on the ward were discharged via the ART clinic with a copy of the referral form.</li> </ul>		
Concept 2: Follow-up	Concept 2: Follow-up of lost HIV+ clients linked to ART clinic for enrolment			
Change Idea	Reason for the change	How the change was implemented		
Dispensing Cotrimoxazole	Clients wouldn't see the	The team started dispensing Cotrimoxazole (CTX) at the HIV clinic instead of main pharmacy.		
(CTX) at enrolment in ART clinic not in general pharmacy	importance of returning for enrolment since they have CTX	Informed HCT staff to refer all HIV positive clients enrolling at the facility to ART clinic for CTX prophylaxis.		
Community follow-up of	Clients fail to return for enrolment	Clients linked to the facility were identified by reviewing the HCT and Pre ART registers		
hiv+ clients by peers and phone calls.  on their scheduled dates and some would prefer to enroll in other health facilities.	A list was generated and given to Linkage facilitators and peer educators to follow up in the community.			
	other health facilities.	The team started obtaining contact phone numbers from the clients to follow up in case they don't return or miss their appointment for enrolment.		
		Availed and used referral forms to identify client addresses to follow up		

Concept 3: Provide adequate post-test counselling				
Change Idea	Reason for the change	How the change was implemented		
Increasing contact time with clients so as to give adequate information.  Involving non-clinical staff in counselling	The health workers never used to give adequate time for the clients to explain their problems during post-test counselling, most of the time they would provide the	<ul> <li>Involving trained expert clients to do post-test counselling, made duty roster to make sure there is a counsellor to provide the post-test counselling on a regular basis.</li> <li>Mentor mothers engaged to provide adequate counselling for the HIV positive pregnant and lactating mothers.</li> </ul>		
Courselling	results and send the client to pick drugs.			
Concept 4: Reduce wa	Concept 4: Reduce waiting time for new clients			
Change Idea	Reason for the change	How the change was implemented		
Scheduling specific day for enrolment	Long waiting time in the clinic during enrolment seen across almost all health facilities	Appointment dates given to clients not ready to access treatment on same day but on their preferred dates		
Attending to new clients before older clients		Created a separate room has been created for new clients and a specific staff is assigned to attend to the new clients (after the Health Education talk, screen those new clients and take them to the clinician for enrolment)		
Enrolling clients on every working day.		Assign staff responsible for enrolling clients on a daily basis, introduce same day testing and enrolment.		

## 4. Change ideas to improve ART eligibility assessment for every Pre-ART client

Concept 1: Build health worker capacity to assess every Pre-ART client for ART eligibility				
Change Idea	Reason for the change	How the change was implemented		
Orienting both old and new staff on criteria for eligibility assessment i.e. Clinical staging and CD4.	Inadequate knowledge among all staffs regarding eligibility criteria in use	<ul> <li>After realizing that some HWs were not conversant with the eligibility criteria of clients;</li> <li>Staff invited someone more knowledgeable to orient them on the ART guidelines; specifically, on eligibility criteria.</li> <li>Also demonstrated to every staff in ART clinic how to run CD4 samples using PIMA machine.</li> <li>Provided WHO clinical staging charts in the clinical rooms</li> </ul>		
Concept 2: Empow	Concept 2: Empower clients to support eligibility assessment			
Change Idea	Reason for the change	How the change was implemented		
Preparing a list of clients due for CD4 bleeding prior to the ART clinic day	Client flows not clear leading to some clients missing repeat CD4 testing, Clients	<ul> <li>Conducting pre-clinic day preparation meetings so that those who missed baseline CD4s are captured and tested,</li> <li>Generating a list of those pre-ART clients due for CD4 in advance</li> </ul>		
Discussing appointment keeping with clients during health education talks to minimize over representation.	are mostly represented by their care takers as a result they cannot be assessed for eligibility.	<ul> <li>During every health education session, the facility emphasized the importance of the client attending his/her visits in person.</li> <li>Identified the over -represented clients and reminding their treatment supporters individually when picking the drugs for refill.</li> </ul>		
Concept 3: Improv	e documentation of eligibility	status		
Change Idea	Reason for the change	How the change was implemented		
Assigning staff to monitor updating clinical stage and CD4 in the client HIV care card	Incomplete recording in the HIV care cards	<ul> <li>Identified a gap in recording CD4 results then identified a records person to fix CD4 result slips in client charts and even record results on the care cards for easy review by clinicians.</li> </ul>		

## 5. Change ideas to improve initiation of clients on ART (ART initiation)

## Concept 1: Improving the ability of Health workers in initiating ART.

Change Idea	Reason for the change	How the change was implemented
Orienting new staff on option B+	A knowledge gap in ART initiation existed among health workers for option B+ and TB/HIV Co infected clients	<ul> <li>The QI team organized a CPD session specifically to address this gap where the new staff were taught how to initiate option B+ by a knowledgeable staff who demonstrated how to initiate option B+ for HIV positive pregnant</li> </ul>
Re-orienting staff on TB/HIV co-	B. and 15/11/10 do infected chemic	mothers and document in the registers.
management		<ul> <li>The team also identified a knowledgeable staff to take the new staff through TB/HIV co management</li> </ul>

## Concept 2: Accelerating ART initiation

Change Idea	Reason for the change	How the change was implemented
On-job mentoring of staff involved in TB management	Inadequate clinical assessment of clients due to knowledge gap in ART initiation	<ul> <li>Health workers with gaps in TB/HIV co-management were identified and a staff who is knowledgeable was also identified to support them.</li> <li>On-job training organized during working hours to build capacity of the staff</li> </ul>
Involving peer educators to do adherence preparation	Inadequate provision of adherence counselling by the health workers	The team decided to train and involve peer clients who had similar experiences to support the team in counselling for ART.
Involving experienced nurses in initiating eligible clients on ART	Only Clinical officers were allowed to initiate eligible clients on ART and yet they were not always available at the ART clinic to initiate ART	Nurses who had been trained and were experienced in the prescription of ART were engaged to provide ART prescriptions.
Establishing a one- stop center for HIV/TB co-management	TB and HIV clinics exist independently so the TB/HIV co infected clients were escorted from TB to HIV clinic for ART Incomplete documentation in MOH tools as staffs are fully occupied on clinic days to update register	<ul> <li>The QI team met and informed the in charge of the facility about their resolution and requested the in-charged to get a room in TB wing for management of the co infected clients.</li> <li>Files and ARVs of co- infected clients were sorted and taken to the TB unit and currently co- infected clients are reviewed in TB unit.</li> <li>Assign a focal person to sort files of eligible clients and store them in cabinet.</li> <li>Identified a support staff to sort files of eligible clients on every clinic day.</li> </ul>

Shortening time for ART preparation of clients.	Clients used to receive adherence counselling for at least 3 sessions or 2 weeks in preparation for ART initiation. This however was too long as eligible clients' health status kept on deteriorating.	<ul> <li>The team decided to address this by explaining to clients about the benefit of starting ART early which is associated with good clinical outcome.</li> <li>One team reduced this to 1 week, while another team decided to have 2 sessions instead of 3 in which the content for complete preparation of eligible client to start ART was delivered.</li> </ul>		
Conducting eligibility assessment beyond HIV clinic to identify eligible clients prepare for ART	Lack of coordination between ART clinic and wards causing the eligible clients from the wards not to be initiated on ART.  The clients who are admitted with clinical stage III and IV conditions were never started on ART and some would be discharged without community linkages or reaching the ART clinic.	It was decided that a clinical officer from ART clinic would participate in ward rounds specifically to identify HIV positive clients in the wards, assessing them for eligibility and subsequently preparing and initiating the eligible ones on ART.		
Modifying the duty roster to have more staff allocated on duty	Few staff working in ANC clinic	<ul> <li>Allocated more staff from the other departments /wards to support the ANC clinic.</li> <li>These were given clear roles and responsibilities on the clinic days to</li> </ul>		
in ANC		support the running of the clinic on that particular day.		
Concept 3: Improving Documentation				
Change Idea	Reason for the change	How the change was implemented		
Assigning a focal person to ensure clients started on ART are recorded/updated	Delays in updating clients' records	The clinic staff would start ART in HIV care cards but not proceed to document in pre ART register.		
		This was because no one was assigned the task to update the records.		
·		The team decided to appoint a focal person to update clients' records in pre ART register		
Mentoring VHTs on updating client records in pre-ART/ART registers		The team identified and trained on- job a VHT to update clients' records in pre ART and ART register		

Designing a template	PRE ART register does not capture
to capture eligible	data on ART preparation. The facility
clients	has several ART clinics and yet there
	are only one central pre /ART registers,
	which was not regularly updated,
	therefore it was difficult to know clients
	who are eligible.

- Team decided to have a template designed to capture eligible clients from the different ART clinics.
- The templates were printed and distributed to all ART centres in the facility.

## Concept 4: Follow-up of eligible clients for ART initiation

Change Idea	Reason for the change	How the change was implemented
Generating a list of <15yrs and following them up for ART initiation.	Number of children under 15 in the HIV clinic unknown Inadequate knowledge on filling in MOH tools	<ul> <li>A pool of clients eligible to start on ART was obtained after looking through the archives using the new ART guideline evaluation criteria with a focus on under 15 yr.</li> <li>Old children, who were followed up in the community through phone calls, home visits by peer educators, religious leaders and VHTs brought back to the ART clinic for initiation.</li> </ul>
Community follow up through phone calls and/or peers	Eligible clients are not followed up in the community	<ul> <li>Addresses of eligible clients who did not turn up or clients whose CD4 results were obtained and are found to be eligible were obtained and followed up through phone calls provided by the IP</li> </ul>