



MÉDECINS SANS FRONTIÈRES KHAYELITSHA

YOUTH LINKAGE AND RETENTION INTERVENTIONS FROM HIV DIAGNOSIS TO ADULT CARE TRANSITION

REPORT AND TOOLKIT



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
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EXECUTIVE SUMMARY

Incidence remains alarmingly high in youth aged 15-24 years, especially young women, with the lowest proportion of treatment exposure and significantly poorer retention and viral suppression outcomes than their adult counterparts. Models of care remain largely undifferentiated for this vulnerable population.

From mid-2011 Medecins sans Frontieres (MSF) worked with the City Department of Health (City Health) to pilot a youth differentiated model of care, focused on strengthening poor youth linkage and retention at a City Health managed youth specific clinic, Site C Youth, in Khayelitsha, a township on the outskirts of Cape Town.

The aim of this report is to describe the interventions combined to provide a youth differentiated model of care at Site C Youth from 2011-2015. Three innovative interventions aimed at narrowing three gaps in the HIV cascade were developed and piloted:

1. Same-day point of care (POC) CD4 count targeting losses between HIV positive diagnosis and ascertaining ART eligibility.

2a. Rapid ART initiation with supportive counselling targeting losses between ascertaining ART eligibility and initiating ART.

2b. ART ineligible counselling support targeting losses of ART ineligible youth not returning for 6-monthly repeat CD4 counts to ascertain ART eligibility.

3. Youth clubs targeting losses from HIV diagnosis throughout the lifelong treatment journey with a specific focus on retention after initiating ART.

Same-day POC CD4 testing at HIV diagnosis ensured that youth testing HIV positive left the clinic knowing whether they were eligible to start ART and reduced time to ART initiation by 8 days. Same-day CD4 count alone was not enough to ensure a significant increase in the number of eligible youth initiating ART. By combining this intervention with the **rapid ART initiation counselling model**, fewer youth were lost before ART initiation without increasing short term retention losses after ART initiation. Importantly time to ART initiation was shortened by 3-4 weeks to an average of 8 days. The rapid ART initiation and counselling model served to reduce excessive ART initiation preparation steps by shifting the emphasis from pre-initiation preparation to strengthening post initiation support. One pre-initiation session was conducted on

day of HIV testing and ART eligibility confirmation, followed by the second session on the day of ART initiation. A final session was provided one month post ART initiation to coincide with the patient's first ART refill visit.

Two **ART ineligible counselling** sessions focused on supporting ART ineligible youth with diagnosis acceptance and emphasised the importance of 6-monthly CD4 counts to ensure timely ART initiation. With the change in ART eligibility criteria to remove CD4 count thresholds for the HIV positive partner in a serodiscordant relationship, these sessions were also used to educate youth and provide the opportunity to initiate if they self-identified as being part of a serodiscordant relationship. These sessions provided the opportunity for lay counsellors to invite these youth to join a Youth Club immediately upon diagnosis.

Youth Clubs are closed membership groups which integrate psychosocial support, HIV clinical management (including ART initiation), family planning and ART refills for approximately 20 members who include a combination of HIV positive youth ineligible for ART, youth newly initiated on ART or youth stable on ART. Youth clubs have shown good 12-month retention outcomes for youth newly initiated on ART (86.4%) or stable on ART (94.3%) but less so for youth ineligible to start ART (52.9%). The Youth Club model also supported an effective approach for the transition from youth to adult care. Youth Club members who aged out of youth care were transferred as a group to form their own adult ART adherence club at the neighbouring adult clinic, ensuring less disruption to continuity of care. Implementation of the Youth club model in **non-youth specific clinics** has proved successful following training and mentoring support.

This report also draws from MSF's implementation experiences at Site C Youth and non-youth specific Khayelitsha clinics to identify priority areas for the provision of a 'youth friendly' service.

Although the youth model of care was piloted in a youth-specific clinic, the model is not resource intense and relies on human resources already existent in most health facilities making integration into most HIV/ART services feasible. This report presents practical solutions to the provision of youth-acceptable HIV care and calls for implementation beyond Khayelitsha.

ACKNOWLEDGEMENTS

MSF acknowledges and thanks City of Cape Town Health for their stewardship in implementing youth services in Khayelitsha and their partnership in piloting youth retention interventions at Site C Youth. MSF also thanks the Children's Radio Foundation for their commitment to empowering HIV positive youth to make their voices heard.



MSF thanks the staff at Site C Youth for their ongoing commitment to HIV positive youth in Khayelitsha.

Most of all, MSF would like to thank the HIV positive youth attending all Khayelitsha clinics.

INTRODUCTION

KHAYELITSHA

Khayelitsha is a large township located on the outskirts of Cape Town and home to an estimated half a million people. It has a very young population with 50% being younger than 25 years old, which is almost equally split between women (51%) and men (49%). Fifty five percent of the Khayelitsha community live in informal housing and 40% are unemployed¹.

Khayelitsha carries one of the highest burdens of both HIV and tuberculosis (TB) in South Africa, with an antenatal prevalence rate of 34% and TB case notification of

approximately 1200/100 000². Total new patients starting antiretroviral treatment (ART) in Khayelitsha has increased each year with just over 6,000 patients (500 per month) initiating ART in 2014. With the change in CD4 count threshold for ART eligibility in January 2015 to 500 cells/mm³, there has been a further increase with 600-700 patients starting ART each month. By end March 2016, there were 36 038 patients remaining in ART care which is close to double the 2011 cohort.

MSF IN KHAYELITSHA - BACKGROUND

In 1999 the Western Cape Department of Health (WCDOH) launched a pilot programme to prevent mother-to child transmission (PMTCT) in Khayelitsha at the Site B Day Hospital. MSF initially provided technical support and in February 2000, MSF started the first ART service for pregnant HIV positive women in the South African public sector. In 2001, the ART service was extended for non-pregnant patients after a long struggle to obtain access to affordable quality generic antiretroviral drugs. MSF's Khayelitsha project provided valuable early lessons on the effectiveness of delivering ART at the primary care level, acting as a catalyst for other programmes in South Africa and beyond.

Since the South African public sector started providing ART services in 2004, MSF's role slowly changed towards partnering with WCDOH and City Department of Health (City Health) to pilot innovative models of care to improve access to ART and TB treatment and outcomes of patients diagnosed with HIV and TB.

MSF's work in close collaboration with WCDOH and City Health has supported the development of good practice models including: the integration of HIV and TB care services, a nurse-driven model of care, the decentralisation of drug resistant TB management to primary care and simplified ART delivery models for stable patients such as the ART adherence clubs.

BURDEN OF HIV AMONG YOUTH: FRAMING THE PROBLEM

RATIONALE FOR GETTING INVOLVED IN PROVISION OF HIV CARE AND TREATMENT FOR YOUTH

In 2003, a national household survey of young South Africans aged 15-24 reported HIV prevalence amongst 15-19 year old women at 15.5% and amongst 20-24 year old women at 25%, both significantly higher than their male counterparts³. In the Western Cape, annual antenatal surveys indicated an increase in the HIV prevalence among young pregnant women under the age of 20 from 2.5% in 1996 to 7.5% in 2002⁴.

Despite the increase in adolescent and young adult HIV infection rates, most clinic services did not cater to the specific needs of this growing population. In a systematic

review assessing youth perspectives on "youth friendly" health care, factors cited as important included: clinicians' attitudes (respect and friendliness), quality of clinical communication skills, perceived medical competency and accessibility of services in an age appropriate environment that provides continuity of care⁵.

Adolescents seeking both contraceptives and counselling and testing for HIV in general clinic settings were often being turned away due to the personal views of health workers that adolescents should not be sexually active⁶.

WHO RELEVANT DEFINITIONS

Youth (also called young people): 10-24 years of age

Adolescents: 10-19 years of age

Young adults: 20-24 years of age

For purposes of this report youth are defined slightly differently due to the age limitations of Site C Youth: 12-25 years

RATIONALE FOR CONTINUED INVOLVEMENT IN YOUTH HIV CARE TODAY

According to the 2012 HSRC national HIV prevalence incidence & behaviour survey, while incidence amongst females aged 15-24 years declined from 5.3% in 2002-2005 to 2.1%, this incidence remains alarmingly high. This group had the lowest proportion of treatment exposure with only 14.3% of those sampled across the country on ART (compared to close to 30% in adults over 25 years). While it is expected that young people have more recently been infected and may not be eligible for ART, it highlights the need to ensure earlier diagnosis, linkage to care and ART initiation, if we are to reduce new infections in this age group⁷.

An HIV impact population survey conducted in Mbongolwane and Eshowe, KwaZulu Natal by MSF in 2011 reported HIV incidence in women aged 15-29 years as 2.9 (95%CI: 1.2-4.7) per 100 person-year (PY) compared to overall incidence of 1.2 (95%CI: 0.2-2.1) PY. Similarly to the national survey above, ART coverage was lower in young adults with only 11% of ART eligible men aged 20-24 on ART⁸.

Despite extensive evidence on the need for youth friendly services and clear guidelines offered by WHO, such services are infrequently implemented in the public sector^{5,9}. Staff

remain unsensitised and aren't trained to work with young people, clinic spaces and opening hours have rarely changed, youth continue to experience long waiting times in crowded spaces with adult patients and there is limited differentiation between youth and adult appropriate models of care and supported transition from one to the other.



¹2011 Census

²Western Cape Department of Health. Western Cape antenatal HIV survey 2012, 2013 and Medecins Sans Frontieres. Khayelitsha 2001-2011, Activity Report: 10 years of HIV/TB care at primary health care level, 2011

³Pettifor AE, Rees HV, Steffenson A, Hlongwa-Madikizela L, MacPhail C, Vermaak K, Kleinschmidt I. HIV and sexual behaviour among South African: a national survey of 15-24 year olds. Johannesburg: Reproductive Health Research Unit, University of the Witwatersrand, 2004.

⁴Provincial HIV Antenatal Survey, Department of Health, Western Cape, 2002.

⁵Ambresin AE, Bennett K, Patton GC, Sanci LA, Sawyer SM. Assessment of youth-friendly health care: a systematic review of indicators drawn from young people's perspectives. Journal of Adolescent Health. 2013 Jun 30;52(6):670-81.

⁶Klugman, Barbara. 1988. "Decision-making on contraception amongst a sample of urban African working women," unpublished Master's thesis, Department of Sociology, University of the Witwatersrand, Johannesburg, South Africa.

⁷Shisana, O, Rehle, T, Simbayi LC, Zuma, K, Jooste, S, Zungu N, Labadarios, D, Onoya, D et al. (2014) South African National HIV Prevalence, Incidence and Behaviour Survey, 2012. Cape Town, HSRC Press

⁸Mbongolwane & Eshowe HIV Impact in Population Survey Final report October 2014

⁹World Health Organization 2013. HIV and adolescents: Guidance for HIV testing and counselling and care for adolescents living with HIV: recommendations for a public health approach and considerations for policy-makers and managers.

MSF AND SITE C YOUTH

MSF in partnership with City Health opened the first youth clinic in Khayelitsha, Site B in 2001. In 2004 MSF and City Health extended their partnership to a second youth clinic that was built in Site C. These were separate youth focused clinics, catering for adolescents and young adults aged 12 (legal age in South Africa to access reproductive health and HIV services without requiring parental/ guardian consent) to 25 years. While these clinics were close to or on the same grounds as the community health centres for Site B and C, they had their own building with separate entrances and their own staff. Youth friendly, integrated services provided at these sites included family planning (FP), diagnosis and treatment of sexually transmitted infections (STI), voluntary counselling and testing for HIV (VCT), management of early HIV-infection (WHO stages 1 and 2), and general curative care. Although most services provided at the youth clinics proved popular, ART initiation and management continued to be provided to youth in 'adult' clinics with no adaptation to suit youth-specific needs.

In response to slow enrolment of youth on ART and poorer retention and viral suppression outcomes than their adult counterparts¹⁰, the provision of ART was integrated into both youth clinics in 2008. MSF (in collaboration with City Health and Pathfinder) also provided medical termination of pregnancy (TOP) services for youth attending the Site C Youth. This is the only youth clinic in the sub-district to offer TOP, resulting in attendance by young women from surrounding areas that might otherwise access routine primary healthcare elsewhere¹¹. In 2010 and 2012 City Health fully took over the ART and TOP services respectively.

Despite the provision of ART at these clinics from 2008 and continued support for the provision of youth friendly

services, MSF continued to observe high pre-ART loss to care with the majority of youth not starting ART after testing HIV positive and eligible for treatment¹².

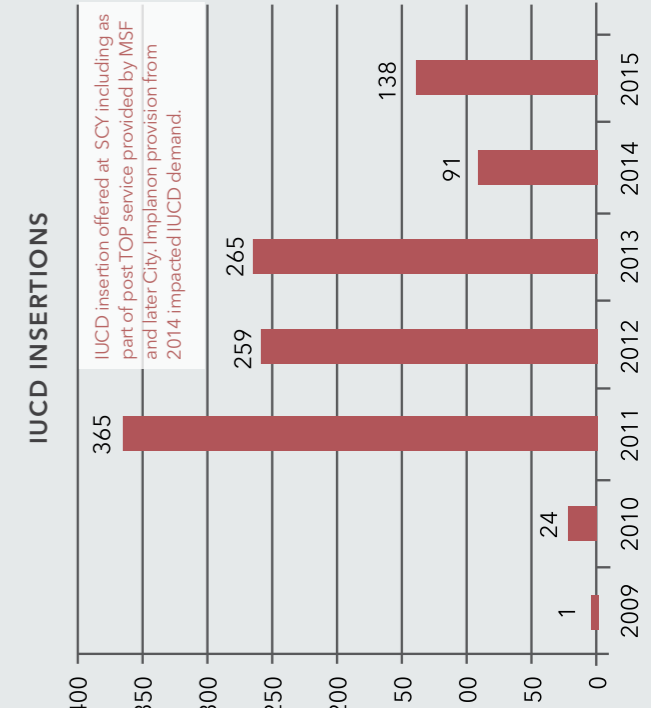
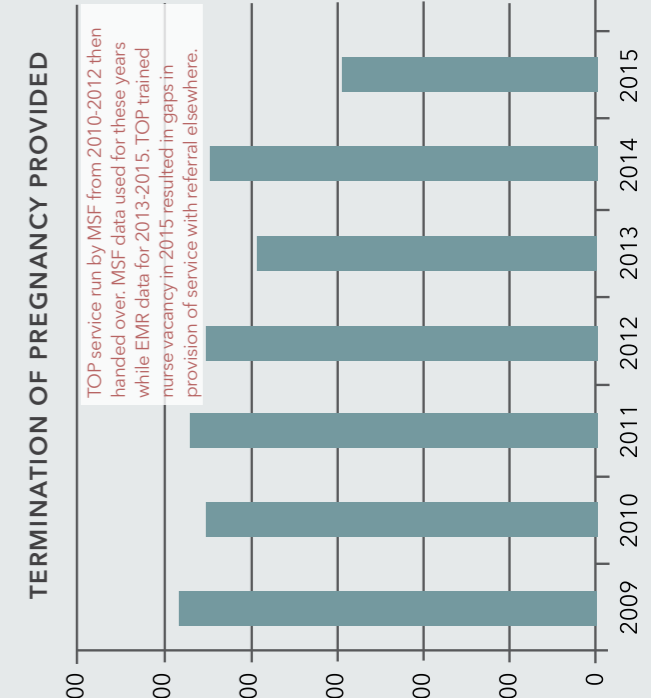
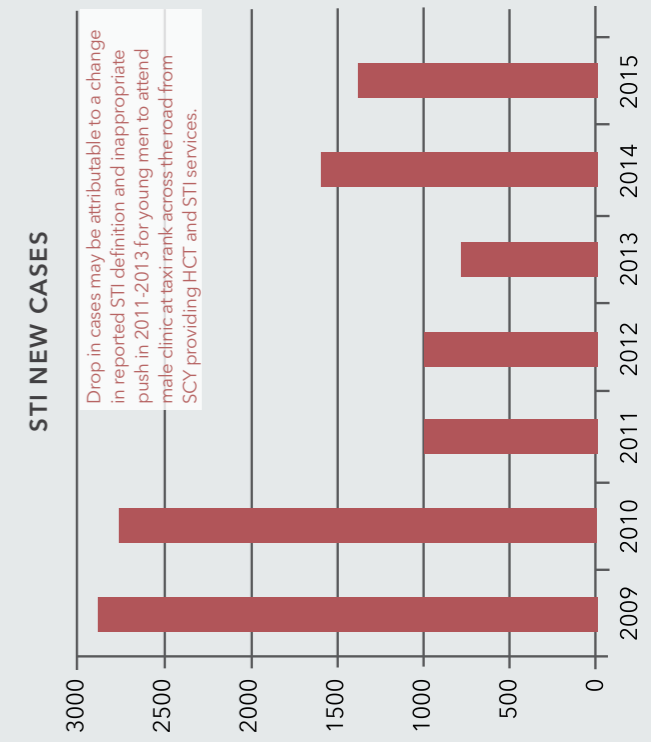
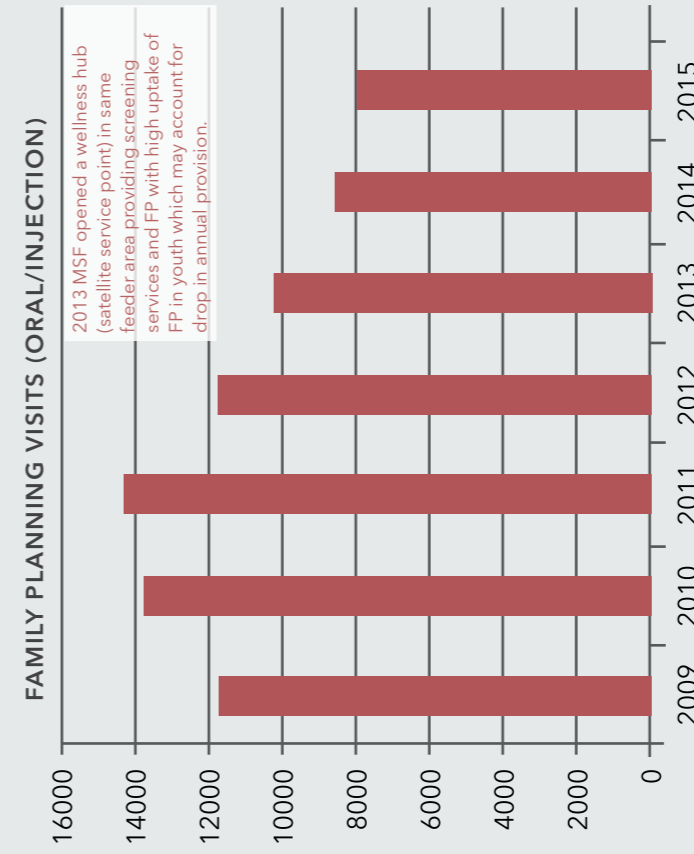
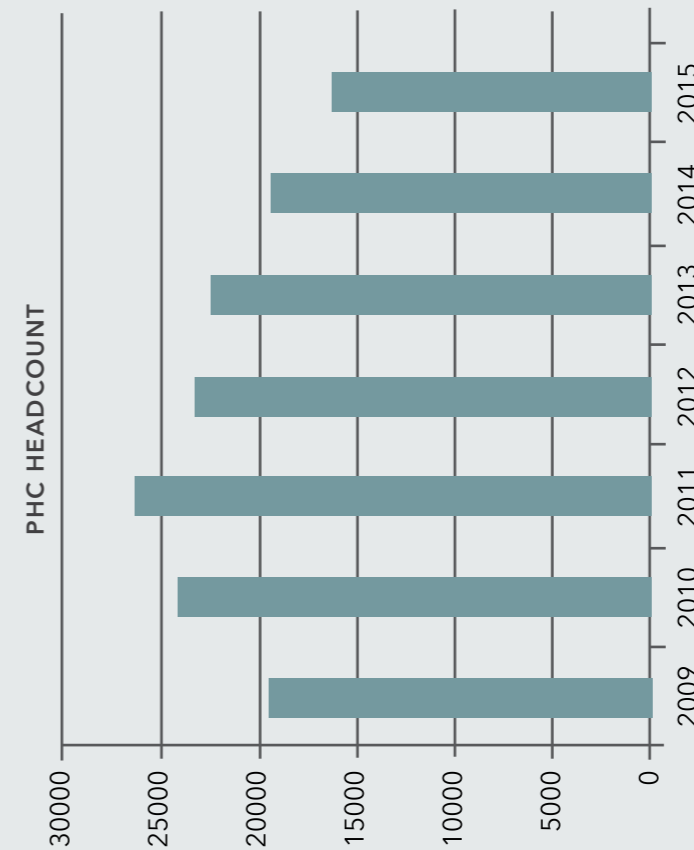
In 2010 MSF exited Site B youth and in mid-2011 refocused its attention on strengthening linkage and retention in care of youth at the Site C Youth only.

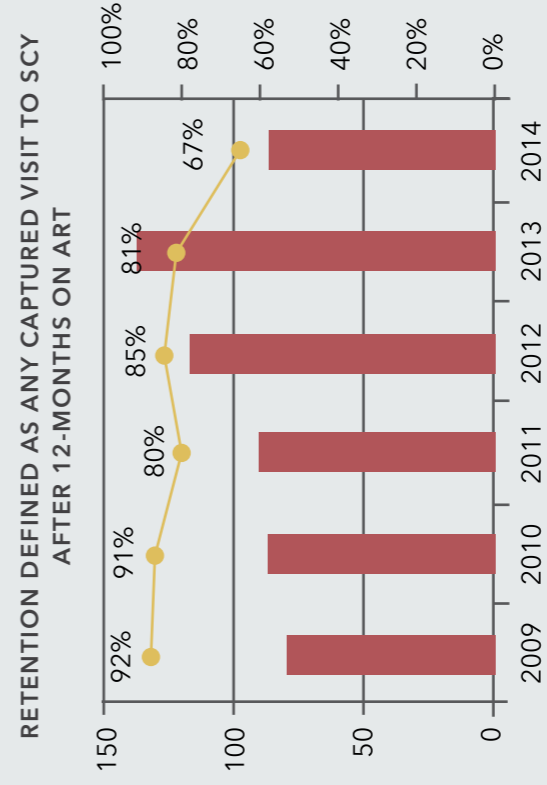
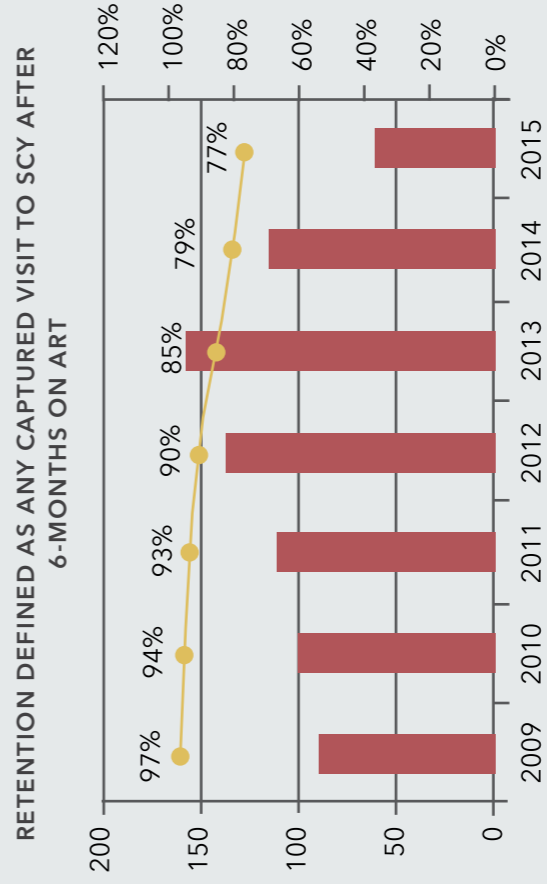
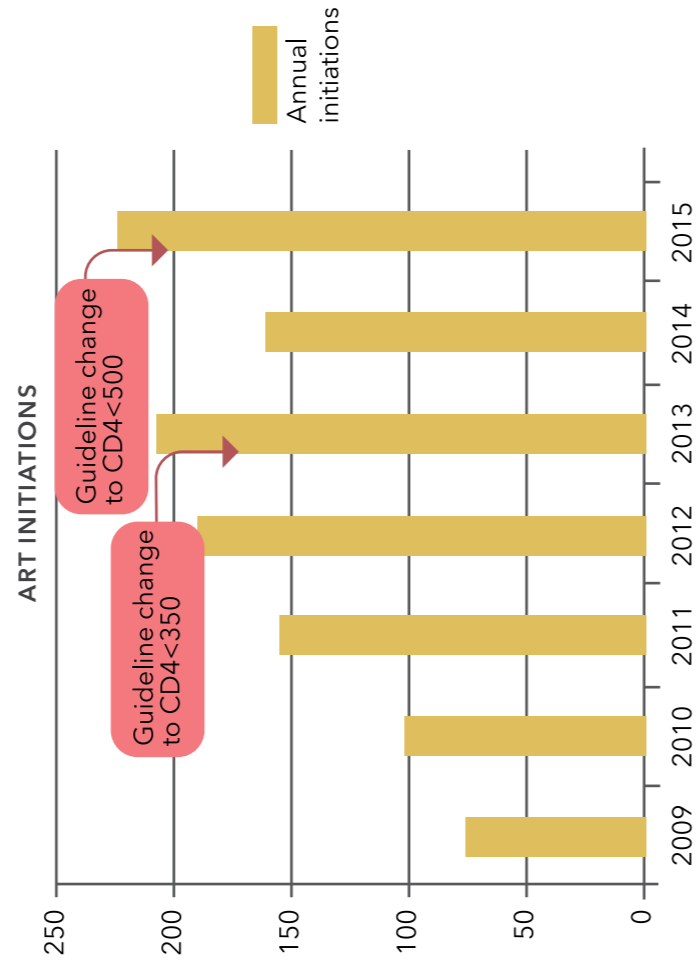
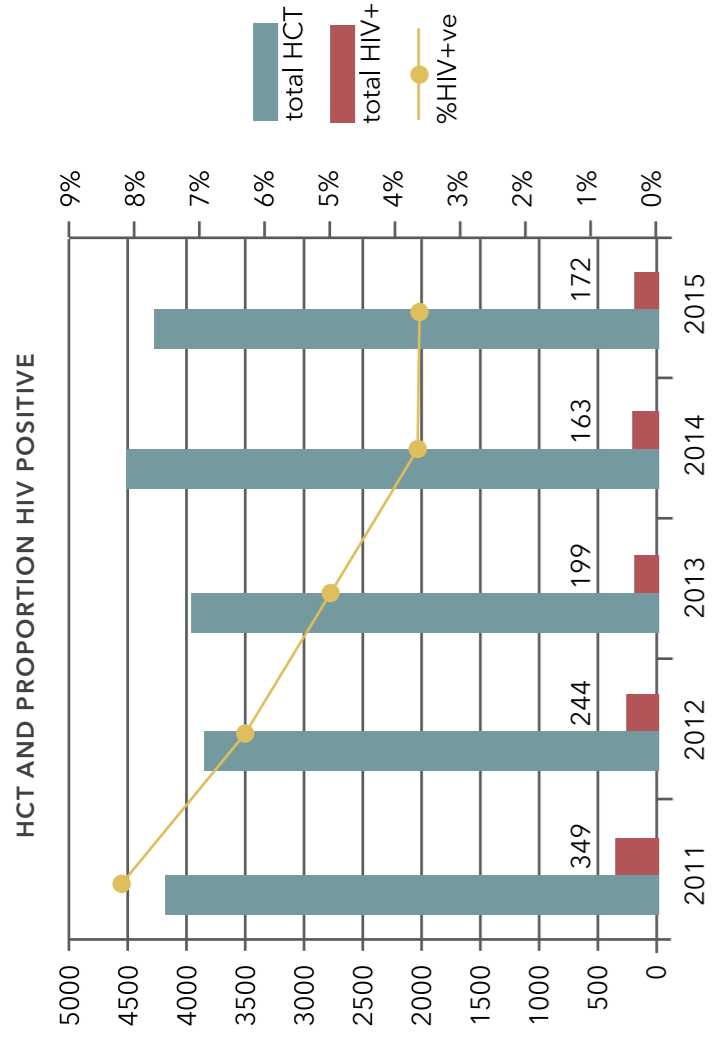
This report specifically describes the interventions MSF and City Health implemented at Site C Youth from 2011-2015 and their outcomes. MSF employed and trained 2-3 youth lay counsellors over this period as lay counsellors are integral to the provision of these interventions. All other resources including clinic staff were employed and managed by the City of Cape Town.

To provide context to these interventions, Site C Youth indicators are reported on the next pages, including headcount, FP visits and new STI cases treated each year, HIV indicators (HIV counselling and testing (HCT), ART initiation, ART cohort retention at 6 and 12 months) together with TOPs provided. All data unless indicated otherwise was obtained from Site C Youth electronic monitoring system (EMR).

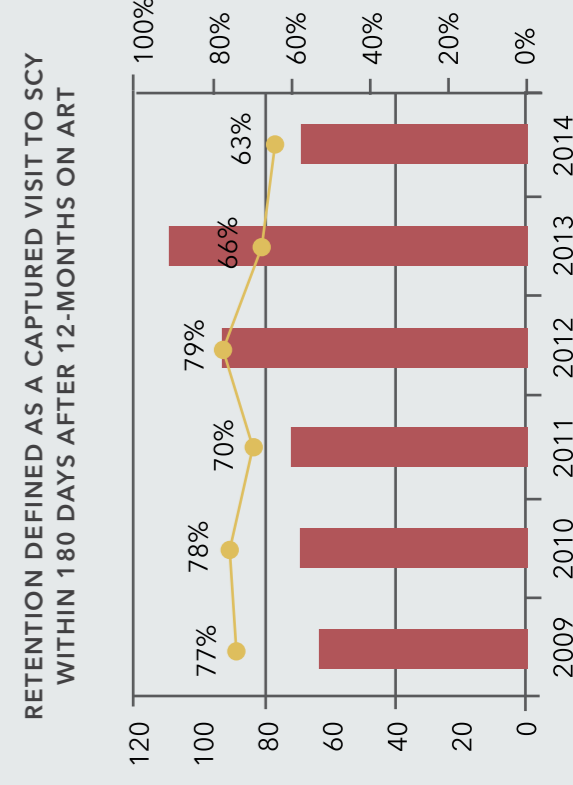
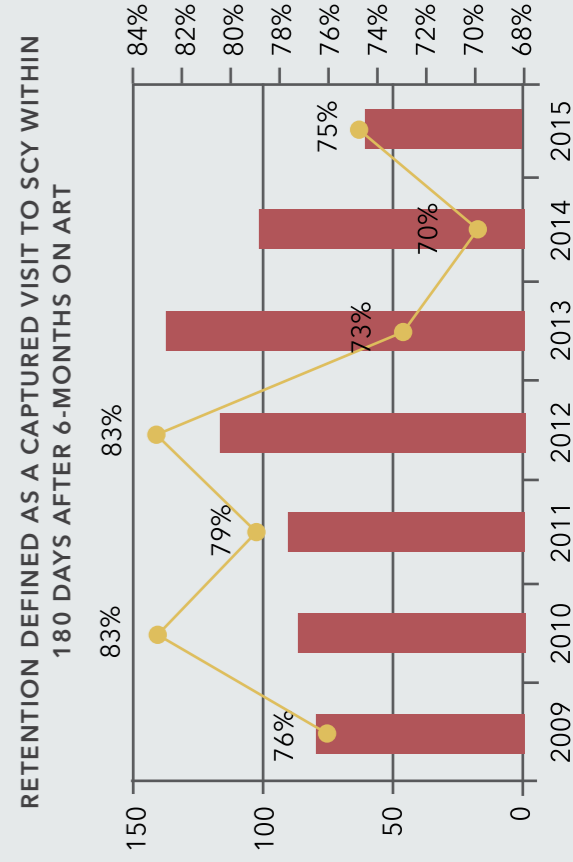
From the start of the ART service at Site C Youth in quarter 1/2008 to the end of quarter 1/2016, 1158 patients have been initiated on ART with 19 (1.6%) reported deaths, 459 (39.6%) reported transferred out to ART care elsewhere, 297 (25.6%) lost to follow-up (which includes unreported transfers and deaths) and 383 (33.1%) retained in ART care at the facility. It is important to note that the age limit at Site C Youth resulted in a much higher proportion of patients transferred out than found in general clinics.

¹⁰ van Cutsem G, Knight L, Kerschberger B, Malavazzi C, Ford N, Boule A: ART for youth and adolescents in Khayelitsha: AIDS 2010 - XVIII International AIDS Conference, Austria, Vienna: Abstract no. THPE0170. 2010.
¹¹ MSF Khayelitsha Activity Report 2008-2008
¹² MSF Khayelitsha 10 year report 2001-2011





SITE C YOUTH (SCY) COHORT RETENTION AT 6-MONTHS AFTER ART INITIATION 2009 - QUARTER 1 2015



The clinic electronic monitoring system (EMR) reports a patient as retained if any ART visit is captured post 6- or 12- months on ART. This approach counts patients who have interrupted treatment for extended periods as retained when they return to care and also allows for data capturing omissions/errors to be corrected over time. It creates an inaccurate picture of older cohorts being better retained.

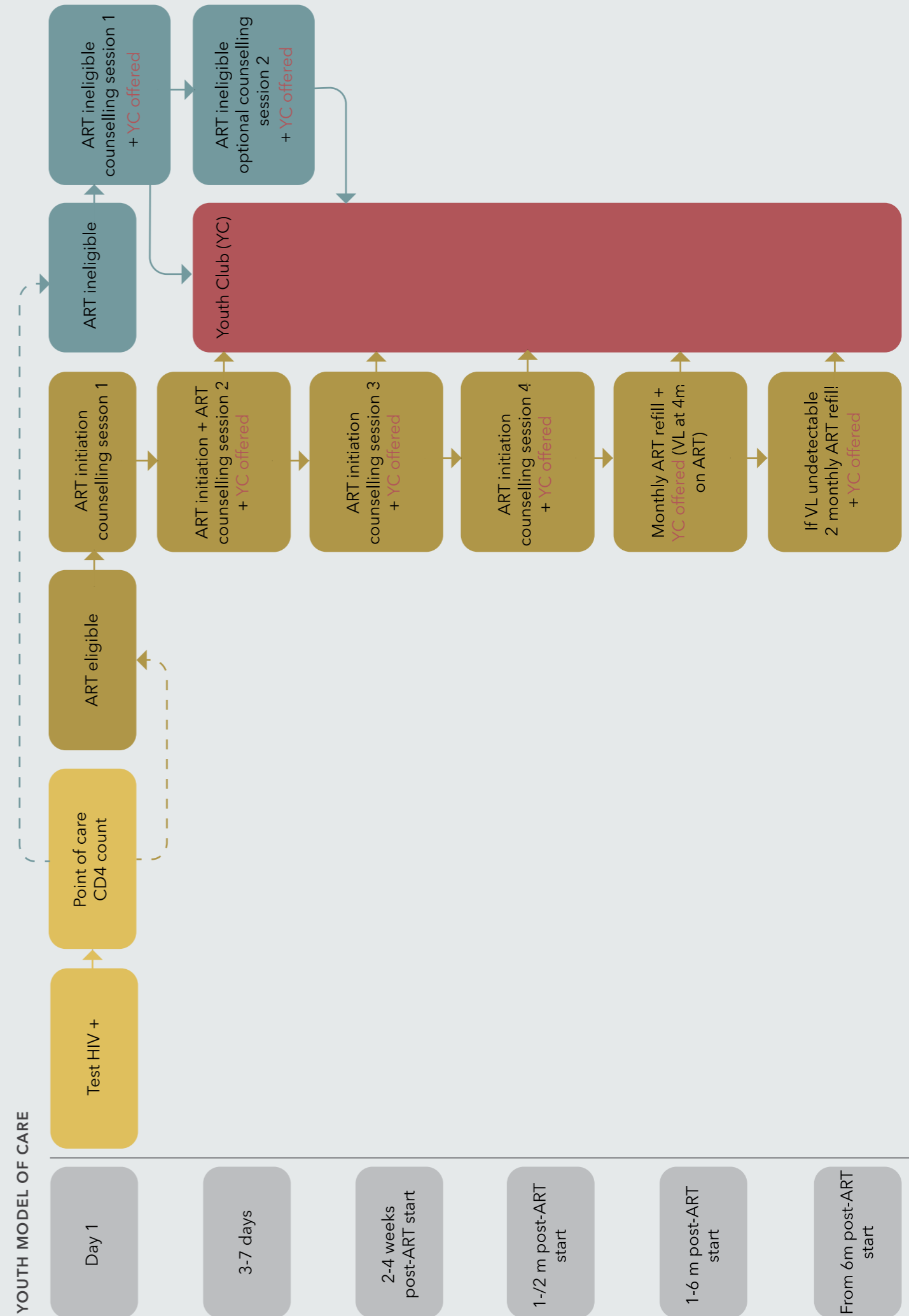
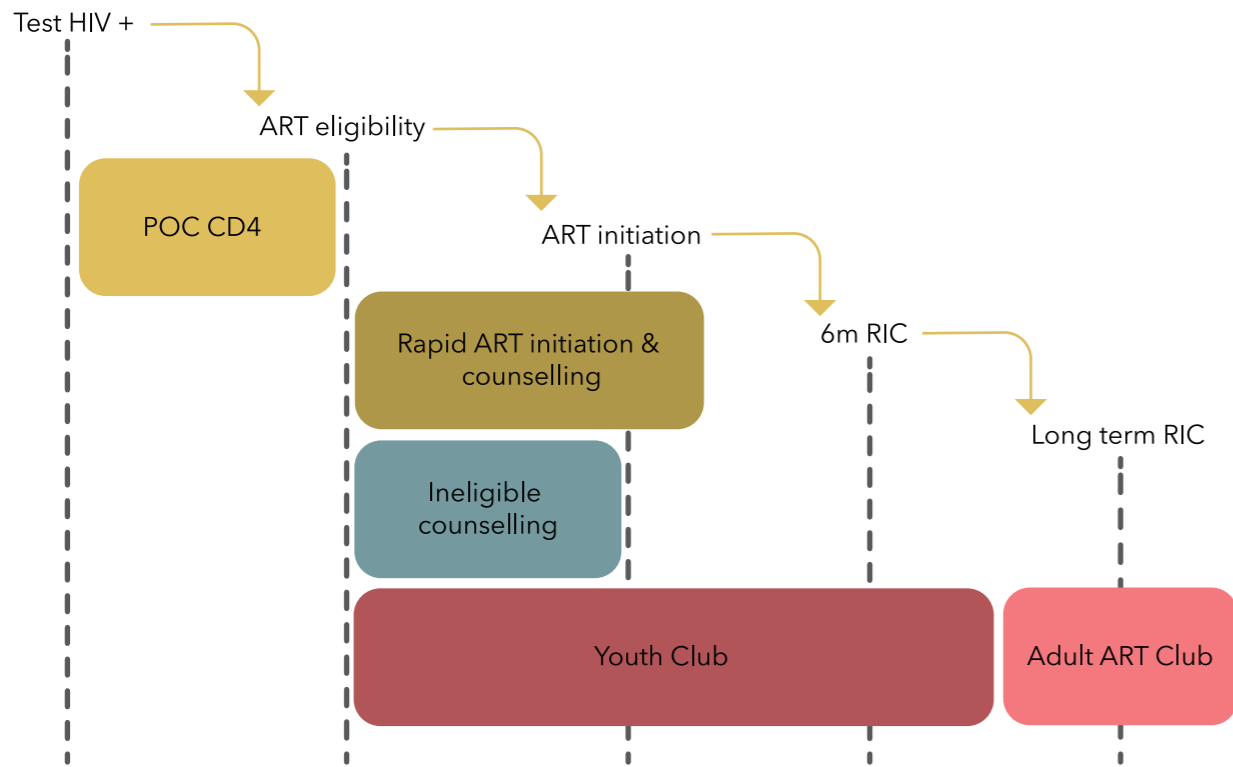
By limiting the period in which the ART visit can take place to 180 days post 6- or 12- months on ART, counting treatment interrupters as retained is minimized. **Recent years unfortunately remain negatively biased by visit capturing delays or omissions.**

YOUTH LINKAGE AND RETENTION INTERVENTIONS PILOTED AT SITE C YOUTH

Since 2011, MSF has supported Site C Youth to pilot three innovative interventions targeting each point in the youth HIV cascade where loss to care was taking place:

1. **Same-day point of care (POC) CD4 count targeting losses between testing HIV positive and ascertaining ART eligibility.**
- 2a. **Rapid ART initiation with supportive counselling targeting losses between ART eligibility ascertainment and initiating ART.**
- 2b. **ART ineligible counselling model, serodiscordancy education and virtual mentorship targeting losses of ART ineligible youth to return for 6-monthly repeat CD4 counts to ascertain ART eligibility.**
3. **Youth clubs targeting losses from HIV diagnosis throughout the lifelong treatment journey with a specific focus on retention after initiating ART.**

The main aim of this report is to describe these interventions and their outcomes. In addition, MSF reflects on its prioritization of components needed to create youth acceptable services from our experiences of supporting Site C Youth and non-youth specific clinics in Khayelitsha.



1. POINT OF CARE (POC) CD4

INTERVENTION DESCRIPTION AND OBJECTIVES

MSF with support from City Health introduced same-day point of care (POC) CD4 testing in May 2011. The aim of this intervention was to reduce leakage in the care cascade between a youth patient testing HIV positive and returning to the clinic for their CD4 result to ascertain ART eligibility. With the POC machine, the CD4 count can be done on the same day, immediately following the HIV test. Youth leave the clinic knowing their CD4 count and whether they need to return to start ART.

Youth testing HIV positive are immediately taken to have their ART eligibility assessed using the POC machine. This is done by either the nurse or lay counsellor who carried out the HIV test provided they have been trained to use the device. Results are ready within 20 minutes during which time the patient is further counselled on their diagnosis and the meaning of the CD4 count result, specifically the importance of starting ART as soon as possible, if eligible.

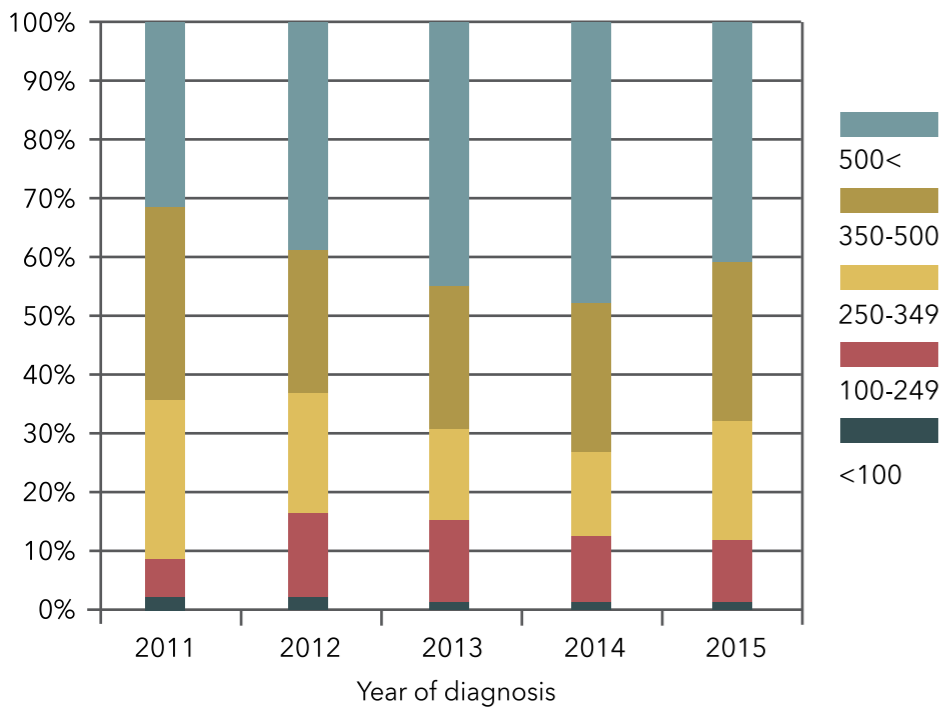
OUTCOMES

A before-after observational study assessed the impact of POC CD4 testing on ART initiation of youth at Site C Youth [Patten et al (2013)]. The study found that POC CD4 testing significantly reduced attrition between HIV testing and ART eligibility (90% knew their CD4 count compared with 67% before the introduction of the POC CD4), increased youth knowledge of ART eligibility status and reduced time to ART initiation by 8 days (from 36 to 28 days). However, it did not

significantly impact the proportion of patients who initiated ART (50% compared with 44%) which remained low.

The graph below shows CD4 count values from POC CD4 data collected at Site C Youth by year with a trend from 2011-2014 of an increasing proportion of youth testing earlier in disease progression with CD4 counts above 500. This trend does not continue in 2015 with an increase in the proportion of low CD4 counts of 250-349.

POC CD4 BASELINE CD4 CATEGORIES



CHALLENGES EXPERIENCED WITH POC CD4 IMPLEMENTATION

- **The POC CD4 count was not consistently performed by the same person who conducted the HCT** as clinical staff preferred to conduct the POC CD4 count test themselves and the machine was not kept in the same rooms where HCT was performed. This resulted in some youth leaving the clinic during the waiting or transition, contributing to patient attrition.
- **Late reporting by the facility team of technical faults** with the POC CD4 machine or running out of cartridges resulting in intermittent periods where POC CD4 counts were not available.
- **The clinical staff doubting the accuracy of the POC CD4** continuing a parallel system of sending blood for a laboratory CD4 count as confirmation before initiating a patient on ART. In some cases, this practice also delayed sending the patient to the counsellor on day of HCT to commence with session 1 of ART preparation counselling.
- **Delayed POC CD4 orientation and training of new facility staff** resulting in inconsistent use with new nurses often not utilizing the POC CD4 but sending CD4 counts to the central laboratory.

KEY MESSAGE:

- Implementation of same-day CD4 testing using POC technologies reduces the number of youth lost between receiving their HIV positive diagnosis and ascertaining their ART eligibility and decreases time to ART initiation for youth eligible for ART.
- Training all staff, including lay counsellors who carry out HCT, to be able to administer the POC CD4 test and locating the machine (and cartridges) where it is easily accessible to all healthcare workers carrying out HCT, facilitates the maximum benefit of the POC device. This is essential to ensure youth patients who have just received their HIV diagnosis are not made to wait or change service providers at this critical time.
- Attention should be given to obtaining facility staff buy-in that laboratory CD4 count confirmation is not required, may result in unnecessary delays in starting patients on ART and amounts to a waste of limited resources.
- Same day CD4 count alone is not enough to ensure a significant increase in the number of eligible youth initiating ART. Excessive ART initiation preparation steps need to be reduced to support rapid ART initiation and increased retention.



2. RAPID ART INITIATION AND SUPPORTIVE COUNSELLING

INTERVENTION DESCRIPTION AND OBJECTIVES

Due to continued unacceptably high losses of youth patients between ART eligibility ascertainment and ART initiation after POC CD4 implementation, MSF and City Health implemented a revised ART initiation preparation counselling model at Site C Youth. The model supported rapid ART initiation by shifting the emphasis from pre-initiation preparation to strengthening post initiation support. Even with the introduction of POC CD4, youth still visited the clinic five times from HIV testing to ART initiation taking on average 28 days [Patten et al. (2013)]. The revised model intended cutting this down further to 2-3 visits with a maximum time of

14 days from HIV testing to ART initiation.

In the revised counselling model, patient education is limited to essential information to initiate ART, supported through the use of a visual aid and a take-home leaflet. The 14 most common barriers to start ART and adhere (see box 1 below) are addressed through the 3-4 sessions with all youth patients and are documented in each patient's adherence plan.

The approach focuses on creating a patient-oriented motivation for commitment to lifelong treatment.

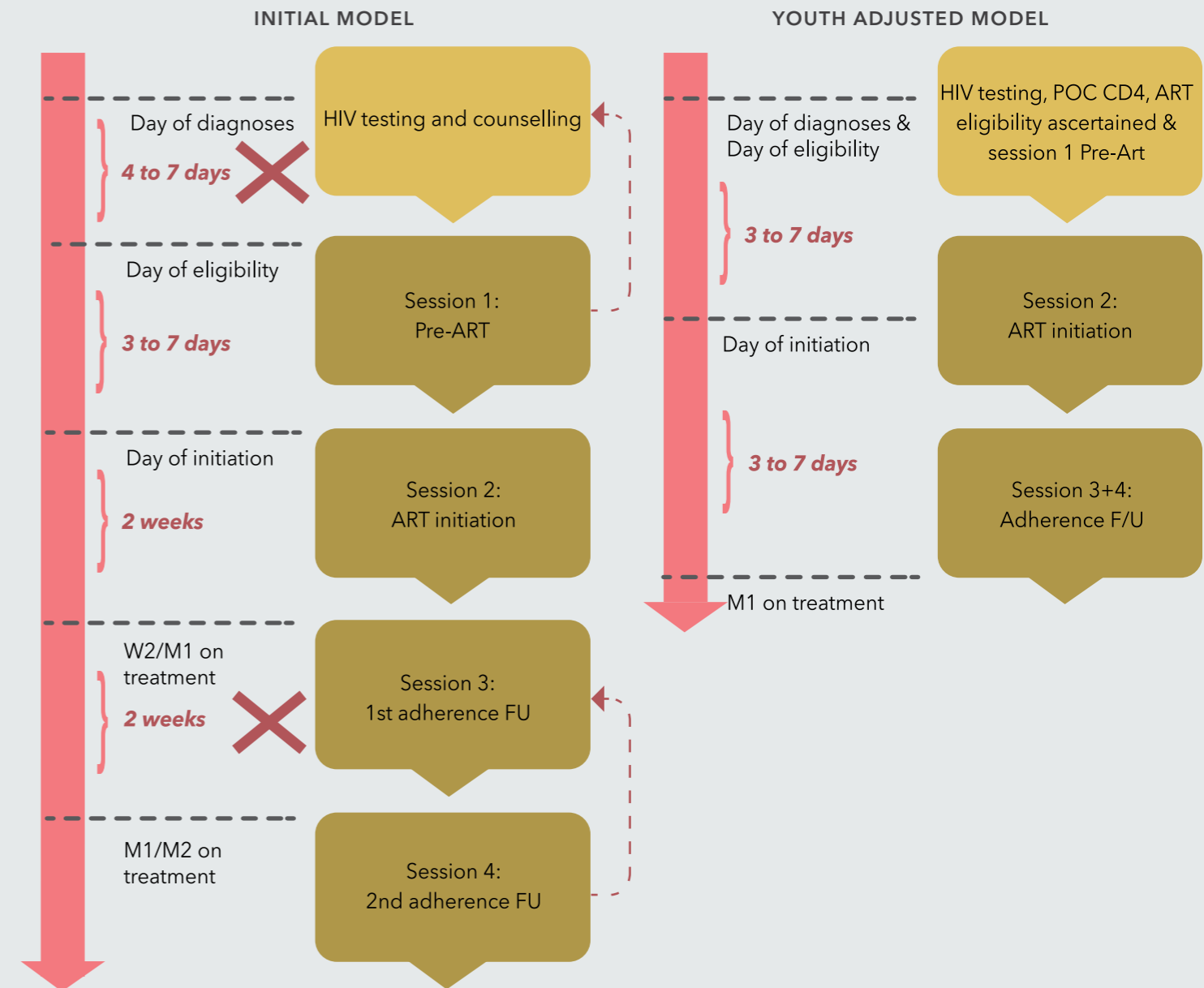


BOX 1: 14 Adherence Steps

Step 1	Understanding HIV (and TB)
Step 2	Identify support system
Step 3	Planning future appointments
Step 4	Readiness to start treatment
Step 5	Creation of a medication schedule
Step 6	Managing missed doses
Step 7	Reminder strategies
Step 8	Storing medication and extra doses
Step 9	Dealing with side-effects
Step 10	Planning trips
Step 11	Dealing with substance use
Step 12	Communication with treatment team
Step 13	Learning from mistakes
Step 14	Making goals: suppressed viral load (and TB continuation phase)

The overall aim of this rapid ART initiation counselling model was to reduce the loss of patients prior to ART start without increasing losses post ART start. This had been shown at the pilot site, a non-youth specific clinic, where time from ART eligibility ascertainment to ART initiation was reduced to 5 days on average [Wilkinson et al (2015)]. The key difference

between the implementation at Site C Youth and other clinic settings was the simultaneous use of same-day POC CD4 testing which allowed for a further reduction of the time to ART initiation with HIV testing and ART eligibility ascertainment taking place on the same day. See model adjustments in flow diagrams below.

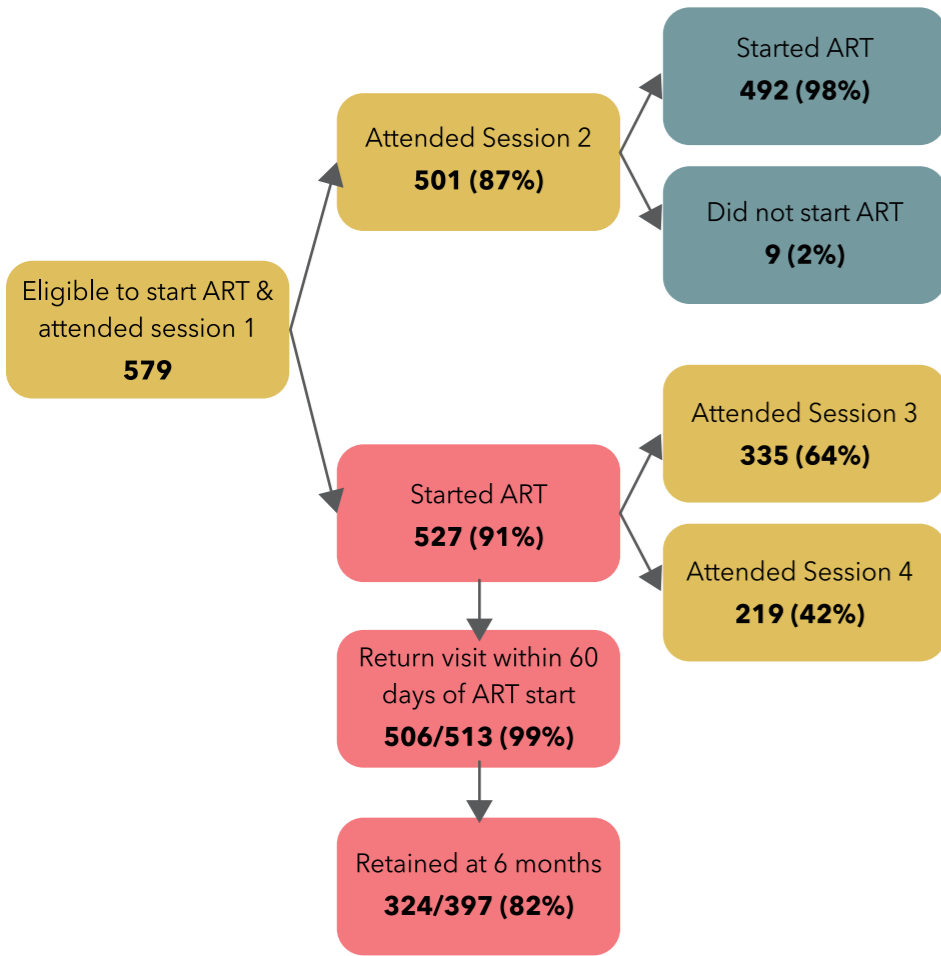


It is well known that each time a patient, particularly a youth, is asked to return to the clinic or spend an extended time at the clinic, there is an increased risk of losing that person to care. With the majority of youth no longer initiating on Nevirapine based regimens but rather an Efavirenz based FDC, patients were no longer required to return 2 weeks after initiating ART and session 3 took place at their 1 month ART refill visit. After determining that while most youth returned for their 2 month refill, they did not attend the 4th counselling session, session 3 and 4 were combined

to ensure youth did not miss out on understanding the importance of the viral load test which would take place at their 4th month ART refill.

Simultaneous implementation of POC CD4 also allows for session 1 & 2 to be combined so that ART initiation could take place on the same day as HIV diagnosis if guidelines permit it (see right flow diagram for further possible model adjustments).

OUTCOMES



From January 2013-June 2015, 579 patients were eligible to initiate ART (either having recently tested at SCY, arrived at SCY already tested and eligible to start ART or had become eligible while in pre-ART care at SCY) and attended session 1*.

91% of these patients initiated ART (despite not all attending session 2 on the day of ART start). There was also significant non-attendance of session 3 and 4 as explained on a previous page.

Median time from session 1 to ART start was 5 days (IQR 0-7 days).

99% (506/513**) of those that started ART before 29 February 2016 ** returned for their first ART refill within 60 days from ART start date.

82% (324/397**) of those that started ART before 30 June 2015** were retained at SCY 6 months after ART start.

*Flowchart starts at session 1 as EMR pre-ART data not reliable/complete to determine denominator. For this reason, sub-group analysis below considers from HCT for those tested at SCY and immediately eligible which was possible to obtain from SCY HCT registers

**Date for analysis closure determined to provide sufficient time for period of follow-up

To assess losses prior to session 1, we conducted a sub-group analysis of those youth patients who tested HIV positive at SCY who were immediately assessed to be eligible to start ART.

70% initiated ART within 6 months of HCT date.

35 did not attend session 1 and mostly did not return to start ART while 89% of those that did attend session 1 returned to initiate ART.

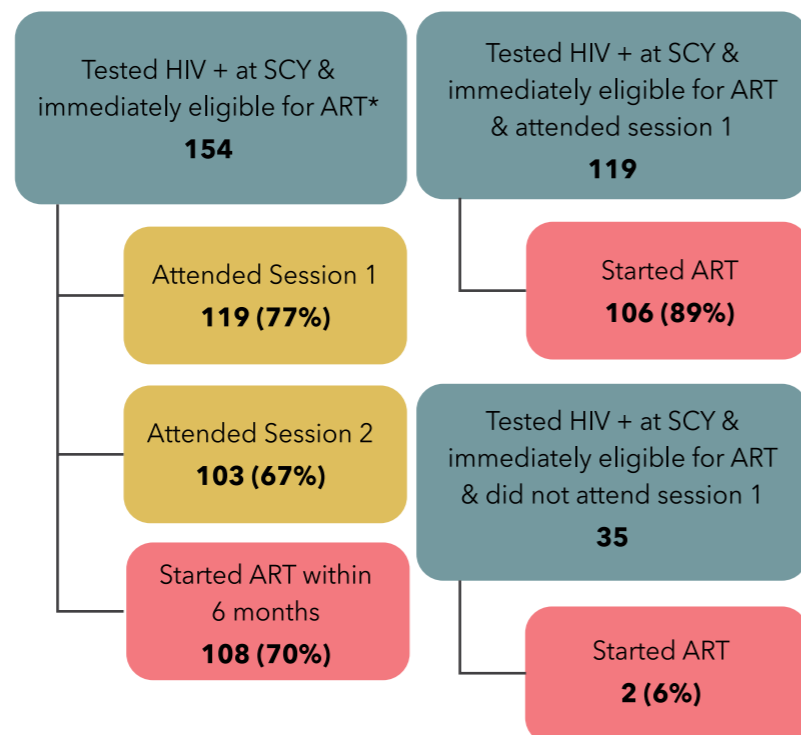
Median time from HCT to ART start was 8 (IQR 4-31) days.

96% (103/107**) returned for their first ART refill within 60 days from ART start date.

80% (72/90**) of those that started ART before 30 June 2015** were retained at SCY 6 months post ART start.

***Excludes patients who transferred immediately on ART start or within 6 months of ART start.

All outcomes above relied on EMR data and were not verified through folder reviews. Delayed or erroneous capturing may have resulted in under-reported retention.



CHALLENGES EXPERIENCED WITH RAPID ART INITIATION COUNSELLING MODEL IMPLEMENTATION

- **First ART preparation counselling session not carried out on day of HCT diagnosis and ART eligibility ascertainment** requiring the patient to come back for an additional visit before starting ART, risking increased losses to care. This also meant that patients did not get the benefit from the first counselling session which focuses on planning around a patient's barriers to starting ART.
- **The clinic patient flow was not conducive to patients attending their follow-up ART preparation counselling sessions 2, 3 and 4** prior to seeing the nurse for ART initiation and ART refill. Patients often left the clinic after getting their ART refills with little motivation to then see the counsellor.
- **Clinical ART initiation algorithm prevented same day HIV diagnosis and ART start** as clinical staff were unable to initiate patients without their baseline blood investigation results (other than CD4 count) as per the Western Cape HIV guidelines.
- **HIV diagnosis of patients residing outside of Site C Youth feeder area was common due to TOP service** offered by the clinic. Those that test HIV positive at TOP were less likely to return for follow-up out of area and may have contributed to losses between HCT/ART eligibility ascertainment and ART initiation.
- **Incorrect patient contact details and/or delayed follow-up calls** (more than a week after the missed appointment) to patients who missed a counselling session meant that not all patients were contacted to encourage return for ART initiation.



KEY MESSAGE:

- Combined implementation of same-day POC CD4 testing and the rapid ART initiation counselling model reduces youth losses before ART start and time to ART initiation by 3-4 weeks.
- Attending the first ART initiation preparation session strongly supports ART initiation.
- Implementation of the rapid ART initiation counselling model should focus and continually monitor that:
 - the first counselling session is conducted on the day of HIV diagnosis and ART eligibility ascertainment.
 - the patient visit pathway for their clinic visits requires attendance at the counsellor first to complete the appropriate counselling session before moving on to see the nurse and collect the ART supply at the pharmacy.
 - follow-up phone calls to youth who missed a session are conducted within the first week of the missed session to increase likelihood of return.

3. ART INELIGIBLE COUNSELLING MODEL, SERODISCORDANCY EDUCATION AND VIRTUAL MENTORSHIP

INTERVENTION DESCRIPTION AND OBJECTIVES

ART ineligible youth have even worse retention outcomes than their ART eligible counterparts, resulting in failure to repeat their six monthly CD4 counts to ensure timely initiation once they become eligible to initiate. Two interventions aimed at this group were piloted:

1. Conducting two ART ineligible counselling sessions: the first on the day of diagnosis and the second (optional) 3-5 working days later. These sessions followed a diagnosis

acceptance plan, helping youth to accept their HIV status and emphasising the importance of repeat CD4 tests.

2. Same-day invitation to join a youth club. On the day of diagnosis, ART ineligible youth are informed about their care options, which include being able to immediately join a youth club (see following section 3 for more details on the youth club intervention and retention in care outcomes of this group).

CHALLENGES EXPERIENCED WITH IMPLEMENTATION OF NON-ELIGIBLE COUNSELLING SESSIONS

- **Who conducts HCT and POC CD4 determined referral to first ineligible counselling session.** When HCT and POC CD4 were conducted by a nurse, ART ineligible youth were not consistently referred to the counsellor and if they were, many left the facility during the transition or waiting period.
- **First ART ineligible counselling session was not always conducted on same day as HCT and POC CD4 count.** On particularly busy clinic days, ART eligible and other patients were prioritised resulting in ART ineligible youth

being asked to return on another day to commence counselling, generally resulting in them not attending any counselling sessions.

- **Patient visit clinic flow** saw inconsistent flagging of ART ineligible youth attending the clinic for repeat CD4 or other services that had yet to receive ART ineligible counselling. This meant that they were not directed to a counsellor first for ineligible counselling sessions or invited to join a youth club.



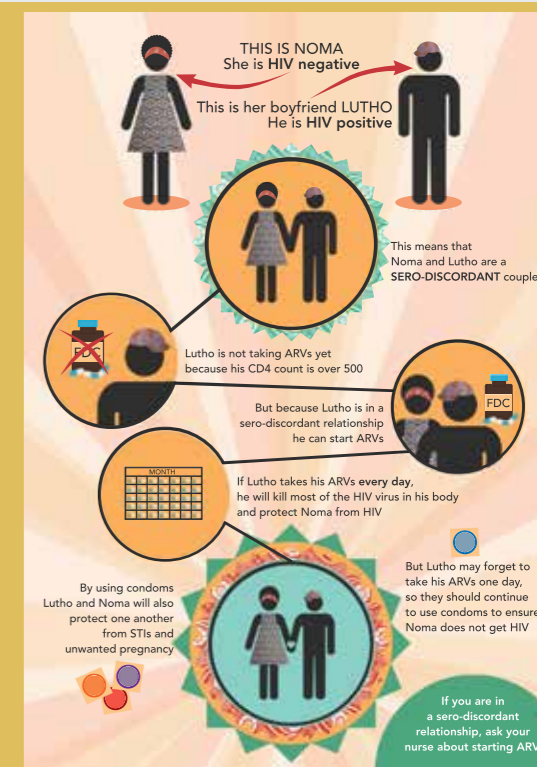
KEY MESSAGE:

- Interventions such as ineligible counselling sessions to support retention of ineligible youth are no longer relevant with South Africa's imminent move to 'test and treat'. However two lessons remain relevant:
 - Counselling patients to identify and plan around their barriers to starting ART will remain important, potentially more so for those youth with high CD4 counts who may be more reluctant to start treatment. The rapid ART initiation counselling model already includes a session for patients who identify as 'not ready to start' with a possible group follow-up intervention to move these patients towards readiness.
 - Actively offering participation (by facility staff and peers) in group models of HIV care for youth at diagnosis rather than when they are stable on ART remains relevant to support ART initiation and retention in the first 6 months where high losses are observed.
- Serodiscordancy in relationships also remains an important education message to provide to youth who test HIV positive to encourage rapid ART initiation, especially those with high CD4 counts who may otherwise delay starting treatment.

SERODISCORDANCY EDUCATION

In 2015 lay counsellors included education on serodiscordancy as an ART eligibility criteria in the first ART ineligible counselling session to raise awareness amongst youth who self-identify as being in a serodiscordant relationship. This education was also done in youth clubs. See patient education poster alongside.

In the first quarter of 2015 when serodiscordancy was first introduced as an eligibility criteria, two ART ineligible youth (1 from a youth club and 1 from ART ineligible counselling) self-reported sero-discordancy and initiated ART. Counsellors reported that sero-discordant youth frequently expressed not feeling ready to start ART and a preference to wait until CD4 eligibility which is concerning in light of the risk to their partners.



VIRTUAL MENTORSHIP PROGRAMME

In March 2015, MSF initiated a virtual mentorship programme, with the aim of increasing recruitment of youth into the youth club model of care. Newly diagnosed HIV positive youth, who were unsure of joining a youth club, were offered to be linked to a mentor via their mobile phones (the platform for communication was left to the mentor and mentee to decide). Mentors were volunteers from youth clubs who had been in club care for at least a year. A brief training session on mentorship and airtime vouchers were provided to the mentors to facilitate the mentorship. Mentors engaged their mentees via their mobile phones in a peer support role, culminating in the mentor inviting the mentee to their next youth club visit, encouraging the mentee to join a youth club of their own.

While this is still a relatively small sample size, it appears this focused, one-on-one platform has more tangible outcomes than general social networking platforms (see preliminary outcomes below). Tools for implementation of a virtual mentorship component are provided in the appendix to this report.

Outcomes

27 Mentees (patients) were recruited over an 8 month period from May to December 2015, with retention evaluated end May 2016. Overall short term retention of mentees in care was 81.5% (22/27). Importantly, among the ART-ineligible mentees, a population prone to loss to follow up, 76.9% (10/13) were retained in care.

4. YOUTH CLUBS

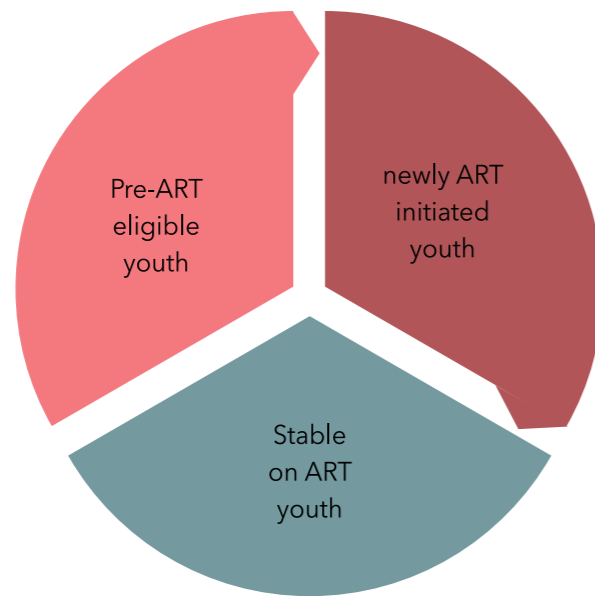
INTERVENTION DESCRIPTION AND OBJECTIVES

In order to retain both HIV positive ART ineligible youth in care and to ensure timely ART initiation and prevent attrition of youth once on ART, MSF piloted youth clubs at Site C Youth from March 2012.

These are closed membership groups which provide psychosocial support, HIV clinical management, family planning and ART refills to approximately 20 members who include a combination of HIV positive youth ineligible for ART, newly initiated on ART and stable on ART. With the highest losses to care in youth taking place in the pre-ART period and shortly after initiating ART, youth who are at

different points in their care pathway were grouped together to facilitate the introduction and observation of peers who had achieved the next step in the care pathway with the aim of improving retention throughout the HIV cascade.

To support increased levels of familiarity within the group and sharing amongst club members at similar life stages, separate youth clubs were formed for those youth (adolescents) still attending school and those who had left school. School-going clubs met in the afternoon after school, while young adults clubs met in the morning.



RECRUITMENT INTO YOUTH CLUBS

Counsellors invite ART ineligible and newly ART eligible youth to join a youth club during their ineligible or rapid initiation preparation counselling sessions, whilst those

youth that have been recently initiated or are already stable on ART are recruited to youth clubs by clinic nurses.

YOUTH CLUB ORGANOGRAM

Each youth club is allocated a lay counsellor and nurse.

The lay counsellor is present at each youth club session and is responsible for:

- Preparing for the club session by:
 - acquainting themselves with the session plan (this requires training support initially);
 - collecting pre-packed ART refills from the clinic pharmacy (see pre-packing process below); and
 - pulling all youth club patients folders.
- Facilitating the club session, distributing pre-packed ART refills to stable patients and completing the youth club register.
- Following-up youth who have missed their youth club visit.

The club nurse is **NOT** present at the youth club session but is responsible for the clinical management of her/ his youth clubs including:

- Marking family planning, CD4 blood draw dates for ART ineligible patients and viral load blood draw dates for patients newly on ART in the club register (viral loads are aligned for ART stable patients and taken on the same date).
- Seeing those youth club patients requiring blood draws (CD4 or viral loads), family planning or clinical management (if newly initiated or annual clinical review for stable patients) immediately after the youth club session.
- Distributing pre-packed ART refills to the newly initiated youth after clinical check-up.



BOX 2: Main differences of youth clubs to ART adherence club model

1. Smaller groups of approximately 20 members
2. Includes ineligible pre-ART patients and newly initiated ART patients
3. Requires more clinical support from a nurse allocated to take responsibility for specific youth club
4. Integrates family planning for female members
5. Patient folders are pulled at every youth club visit due to increased clinical activities
6. Youth clubs take place at a health structure due to clinical support required at each club session
7. Youth only exit the club model and return to clinic-based individual care if they repeatedly miss their youth club sessions or their viral load remains high after intervention by the club lay counsellor and nurse
8. Club facilitators are expected to follow structured session plans to engage youth in interactive and participative discussions
9. Youth clubs meet monthly for the first 6 months to encourage bonding and social cohesion among club members, thereafter they meet two monthly

FREQUENCY OF YOUTH CLUBS

Initially youth clubs met monthly for the first year and then two monthly thereafter. More recently this has changed to monthly for the first 6 months and two monthly thereafter.

YOUTH CLUB FACILITATION

The facilitator engages club members in participatory, youth-focused discussions such as managing disclosure within new relationships. See box 3 below with topics discussed. See appendix for youth club topic guide and session plans.

BOX 3: Youth Club session topics

- Session 1: Welcome to your Youth Club
- Session 2: Disclosure and relationships: do I, don't I?
- Session 3: Adherence and social life: tips and experiences
- Session 4: Stigma and discrimination: sexual orientation and HIV
- Session 5: Sex and relationships
- Session 6: Stress and coping skills
- Session 7: Who am I?
- Session 8: My future
- Session 9: Gender roles and expectations
- Session 10: Violence within relationships
- Session 11: Communication within relationships
- Session 12: Being a young parent



YOUTH CLUB PRE-PACKED ART REFILLS

ART was initially pre-packed by the clinic pharmacy but from 2013 shifted to utilizing the central dispensing unit which delivers pre-packed ART per youth club to the clinic pharmacy. The youth club facilitator collects the pre-packs before the youth club.

INTEGRATION OF CLINICAL MANAGEMENT AND FAMILY PLANNING

Clinical management and family planning are integrated within the youth club model process. See table 1 below which details the services provided at the club session by the club facilitator (lay counsellor) and after the club session by the club nurse.

Services provided to youth club members

WHEN By who	PRE ART	NEW ART	STABLE ART
DURING CLUB Lay counsellor	Weight Symptom check Phone number check	Weight Symptom check Phone number check	Weight Symptom check Phone number check Pre-packed ART refill
AFTER CLUB Club allocated nurse	6 monthly CD4 Family planning ART initiation when eligible	4m and 12m VL 1-6m on ART: monthly clinical check-up 6-12m on ART: clinical review after 12m VL Family planning	Annual VL + annual clinical review Family planning

YOUTH CLUB SOCIAL COHESION AND SUPPORT NETWORK

One of principal aims of the youth club was to mitigate the social isolation experienced by many HIV positive youth through strengthening peer support and networking opportunities. In order to support interaction and socialisation in between club visits, MSF piloted a Mxit virtual support platform which subsequently transitioned to the more popular Whatsapp and Facebook platforms (see box

6). In addition, MSF partnered with the Children's Radio Foundation (CRF) to set up youth radio clubs (see box 7), organised annual youth club outings at the end of each year (see box 5) and facilitated youth club members' participation in an annual youth-focused World AIDS Day concert attended by 2000 youth. Examples of strengthened social cohesion are included in box 4 below.

BOX 4: Youth club members testimonies of strengthened support network

Mpho Makhetha spending 67 minutes in my clinic (Site C Youth)

"This was our club date and we as the group decided to do something nice for our clinic because it was the 18th of July, Madiba Day. We decided to spend our 67 minutes doing a clean-up campaign, showing the health care workers that we are thankful of what they doing for us and by making sure that every month we get our medication. I was very excited during this activity because all eyes were on us and people were not looking at us being HIV+ but at us being active at our clinic with our counselors, we were all happy singing, playing with water enjoying seeing our clinic clean. The club made us to be sisters and brothers. We plan and do things together and this is something that I never thought I'll be part of, but today I am grateful and happy to be part of this big happy family."



Nomvuyiseko Gqola's baby shower

"Without me knowing my club members whom I now call them my friends, they organized a surprise baby shower for me and my other friend who's also a club member. This was a very special day for me and my unborn baby. I really felt happy and got a sense of family, before this day I had nothing for my baby but just before the day ended I went home with a bag full of baby clothes. I am thankful that I joined my club and had to know other young people who are also living with HIV and taking care of their health, they have made a huge difference in my life."

Olwethu Zamliza's home visit by fellow club members

"This is one of the days that I will never forget in my life, when I think about it I burst into tears of joy because during this period of my life I was falling apart. I had no hope of anything, but my group members showed me care and support, they bought me food and sweets with a gift. I had stopped going to the clinic and to the club plus the worst part I stopped taking my medication because of the challenges my family had. My club members came over to my home and they checked why I haven't been coming to the clinic and how can they assist me, so we talked and cried together, but at the end of the day we all left with smiles and I am back at my club now."

BOX 5: Annual combined youth club outing

Annual end-of-year outings are hosted where all youth club members are invited to a fun day out to mix and mingle across clubs. The aim of these outings is to generate a

sense of being part of a wider social network of other HIV positive youth, as well as to celebrate the end of the year.



BOX 6: Social Networking Platforms to Support Youth Clubs

Social networking platforms provide an opportunity to strengthen the peer to peer social bonds of the youth club model, and current National DoH guidelines recommend WhatsApp adherence support chat rooms be created for club patients and at risk groups. MSF has tested the mXit, Facebook and WhatsApp platforms, and due to the constantly changing nature of platform popularity, recommends adapting the platform based on regional and temporal youth usage trends [Henwood et al. (2016)].

Nonetheless, lessons learned from these pilots [Henwood et al (2016)] indicate that they are viewed favorably by youth members. WhatsApp usage is highest for the first 6-12 months, and then tends to sharply decline as the youth form bonds and engage in private interactions, outside of the youth club social networking platform. Tracking user engagement compared to counsellor involvement highlights the different role the counsellor may play depending on platform. In the Facebook group platform, user posts (posts, like and comments) occurred largely in response to counselor posts, whereas in the WhatsApp chat room setting, user activity was largely independent of counselor posting activity.

MSF therefore recommends that in the first session of any new youth club, the counsellor facilitates the creation of a social networking group for the youth club members. This process can be driven by an elected club representative, who is tasked with gathering the contact details of all club members, and creating the platform (e.g. a WhatsApp group). MSF's experience suggests that active counsellor involvement is not required for the success of these groups, and hence they represent a low cost, minimal resource addition to the model.

BOX 7: Partnership with CRF to form youth radio clubs



In an effort to develop youth advocacy and provide youth club members with a platform to have their voices heard, MSF partnered with the Children's Radio Foundation (CRF) to form youth radio clubs. Youth club members are invited to start their own radio club. CRF trains radio club members on technical as well as journalistic skills and continues to mentor and support youth during weekly radio club meetings. Radio club members decide on a topic for the month, such as gender dynamics or HIV prevention options and then collect, develop and collate content into a pre-recorded radio show. These radio shows are presented monthly at a live, interactive event at the Site C Youth for clinic patients and staff as well as on Khayelitsha's local community radio station, Radio Zibonele, reaching thousands of youth in Khayelitsha every month. Radio club members who have gone through a year of training and developing radio shows are invited to act as mentors and training partners to new radio club groups.



BOX 8: Implementation of youth clubs in a non-youth specific clinic

In 2014 MSF piloted youth clubs in a non-youth specific clinic. The facility already had established adult as well as family ART adherence clubs which made it an ideal site to facilitate continuity of care and a smooth transition of peri-natally infected adolescents from a family club to a youth club to an adult club as they aged into adulthood as a group.

The facility manager assigned a facility nurse and counsellor to take responsibility for youth clubs. MSF provided technical and mentoring support to set up the youth clubs, including co-facilitation of initial youth club visits.

The facility only catered for patients already on ART and had a mix of horizontally and peri-natally infected youth. Youth clubs were then differentiated for horizontally and vertically infected youth and each youth club included youth newly initiated and stable on ART. The first youth club was for horizontally infected youth, while the second club were made up of younger adolescents who 'graduated' from their family club.

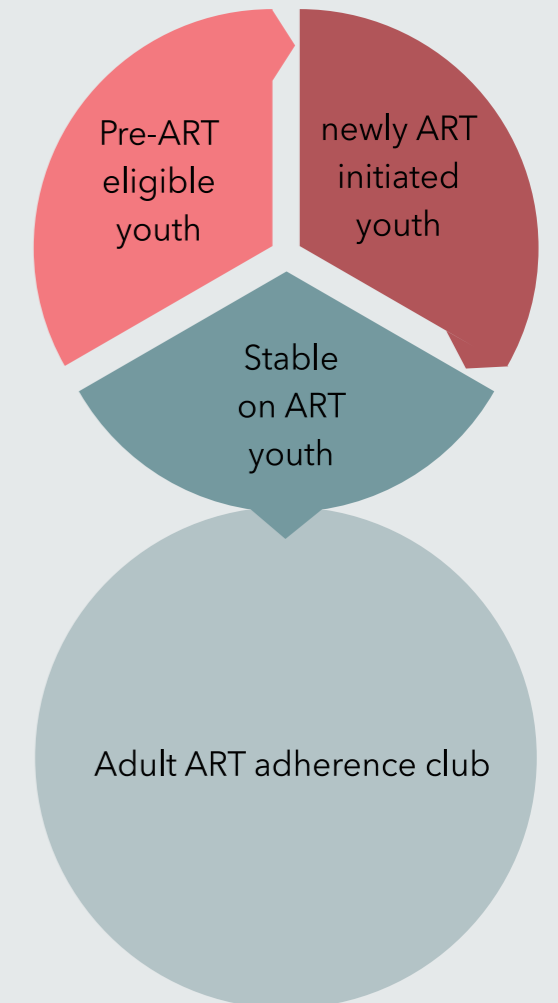
MSF handed over full responsibility to the facility in 2016 that have since started a third youth club.



YOUTH CLUBS SUPPORT TRANSITION TO ADULT CARE

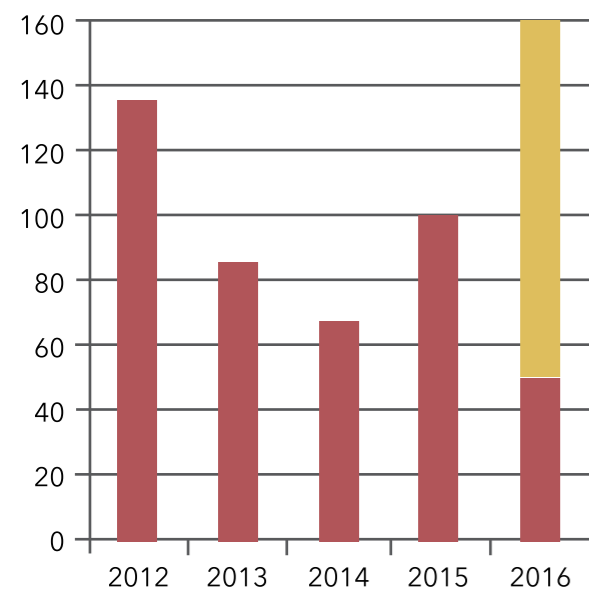
A study into the outcomes of the ART adherence club model found that where youth join adult ART adherence clubs, their retention outcomes did not improve from individual clinic based care [Grimrud et al (2015)]. This may be due to discomfort in sharing group space with adults. Consequently youth clubs are only for youth but at some point youth age out of youth clubs.

At Site C Youth, the youth clubs provide a foundation for future entry into adult ART adherence clubs. When youth stable on ART reach the age of 26 years (no longer qualifying for youth clinic care), they are transferred to the adult clinic as a group to form their own adult ART adherence club. This group move minimises the disruption and trauma that many young people face when having to transfer out of a youth focused services into a potentially isolating adult setting.



OUTCOMES

By the end of Quarter 1/2016, 437 youth had enrolled in 22 youth clubs. Quarter 1/2016 has shown increased enrolment and may exceed previous years of enrolment rate continues (see projected enrolment in 2016 in yellow based on Q1/2016 enrolment).



Spreading the youth club model and inclusion in policy

The piloting of youth clubs in both youth and non-youth specific clinics facilitated adoption of the model in the updated 2015 Western Cape ART adherence club guidelines. It has further been recommended as a youth-focused strategy for implementation nationally in South Africa's recently released Adherence guidelines for HIV, TB and NCDs (Feb 2016).

In 2015 MSF Khayelitsha started providing youth club implementation training for Cape Metro City and Provincial ART clinics to support spreading the model.

An outcomes analysis of 337 youth enrolled from March 2012 to May 2015, found overall retention at 12-months was 81.7% [95% confidence interval (CI) 76.4-86.0] and varied significantly by enrolment category (p-value<0.001) with high retention amongst those youth that enrolled into youth clubs on ART and low retention of ART ineligible youth (see below).

During this period 18 youth became eligible for ART and initiated and 84 newly initiated youth became stable on ART. 60 youth turned 26 years old and graduated from the youth clinic to adult services [Wilkinson et al (2016)].

ART ineligible youth

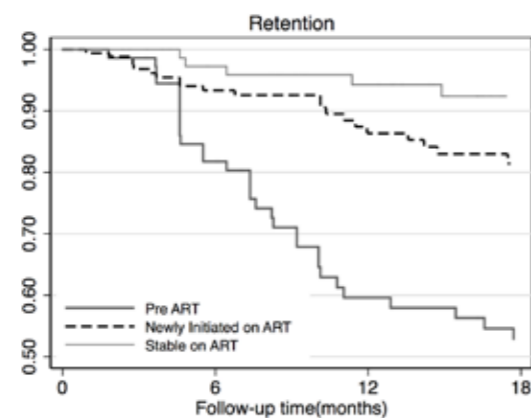
52.9%
(95% CI 40.0-64.2)

Newly ART initiated youth

86.4%
(95% CI 78.7-91.4)

Stable on ART youth

94.3%
(95% CI 85.4-96.8)



Number at risk	0	6	12	18
Pre ART	73	58	36	31
Newly initiated on ART	178	129	82	51
Stable on ART	86	70	59	35

CHALLENGES EXPERIENCED WITH IMPLEMENTATION OF YOUTH CLUBS

- **Inconsistent recruitment by nurses.** Motivating nursing staff to consistently invite recently initiated and youth stable on ART to join youth clubs was challenging and improved after targets were set and monitored by City Health.
- **Few ART ineligible were recruited.** Initially lay counsellors only recruited ART ineligible youth after completing both ineligible counselling sessions. The model was changed to offer youth club enrolment at every opportunity. In addition, the virtual mentorship intervention was introduced where a youth club member supported a newly diagnosed patient to visit their youth club to encourage them to join their own club (see Box 7).
- **Reluctance to providing clinical oversight of allocated youth club register,** particularly indicating in the youth

club register when CD4 counts and family planning were due with nurses attempting to task shift the responsibility of determining and indicating in register when CD4 and FP due to the club counsellor.

- **Intermittent club attendance** by some club members who only attended every second club session, highlighting the importance of carefully balancing the value of establishing group cohesion with clinic visit frequency based on youth inputs.
- **Poor retention of ART ineligible youth.** Attendance 'rules' for ART ineligible youth club members were more relaxed, allowing them to miss up to three consecutive club sessions before being asked to exit the club and return to routine clinic care. This may have lost the opportunity to be part of the group cohesion process.

KEY MESSAGE:

- While less promising for those youth who are not eligible to start ART, enrolment in youth focused group models of care and ART delivery, such as youth clubs, have shown good retention outcomes for youth on ART, including those newly initiating and not yet stable. This is encouraging news as 'test and treat' starts in South Africa. All HIV positive youth will immediately be eligible to initiate ART and could benefit from such a group approach, providing integrated psychosocial support and ART management at a time when they are most vulnerable to being lost to care.
- Pro-active recruitment of HIV positive youth by all staff at the clinic is vitally important to ensure effective utilization of this model of care. Pamphlets advertising clubs and additional information offered during waiting room talks can further support recruitment efforts (see pamphlet in appendices).
- It is feasible to integrate family planning into simplified group ART delivery models, reducing the risk that family planning appointments are missed.
- In a setting with both peri-natally and horizontally infected youth, it is advisable to form separate youth clubs for each category so that discussion and interaction can be set to each groups' needs.
- Natural progression of a patient group from a family to a youth to an adult club for peri-natally infected youth and from a youth club into an adult club for horizontally infected youth is a transition strategy that offers some level of continuity of care.
- Youth clubs have gone beyond establishing peer networks of support to members, empowering youth to disclose their status publically - talking about being young and HIV positive in South Africa.

<https://www.youtube.com/watch?v=Jl6JUBY-DHs>
<https://www.youtube.com/watch?v=886FEUzsy1A>



WHAT MAKES A SERVICE YOUTH FRIENDLY?

MSF has provided ART and TOP services, implemented the interventions outlined above and supported the provision of youth friendly services at Site C Youth since 2004. From this experience together with our work with youth in non-youth

specific clinics in Khayelitsha, we set out in the table below, our perspective on the components of a youth friendly service together with our prioritization. We also indicate which of these were present at Site C Youth.



ENVIRONMENT	AT SITE C YOUTH
Youth only space Youth require clinic space that is not shared with adult counterparts. This can be a separate service space (reception/counselling and clinical) or specific operating times which only cater for youth.	Site C Youth only provides services to 12-25 year olds creating a space where they need not see or interact with adults and their clinic attendance remains confidential. Youth clubs are also held in a room created for HIV positive youth activities.
Confidentiality of service attendance Youth specific services support this confidentiality requirement. In addition, clinic and patient held records and queuing approach should not flag the service attended.	All ART patients' hand held record is green while all others are white. At the request of the youth, black covers were introduced for all patient hand held records to protect against inadvertent disclosure at reception space. TOP services were provided from a space with a separate waiting area and clinical room.
Reception environment encouraging peer interaction Implementation of a queueing system which allows for a young person to engage in discussion/activity while awaiting their turn.	Site C Youth maintained the approach of sitting in rows, facing the reception window waiting to be called to see a nurse.
Youth environment creating equipment Move away from subdued boring health facility space	Site C Youth had a 'chill room', TV, music system and pool table. These only work with staff engagement to ensure use. Wifi was introduced by City Health in 2015 and proved very popular.
STAFFING	
Lay counsellors Youth support requires time which professional staff cannot always afford. Most of the interventions described above rely on lay counsellors. Youth input highlighted the importance of young adults rather than peers as youth counsellors.	Lay counsellors were always part of the staffing organogram. These lay counsellors were however not always young adults nor were they trained specifically to work with youth. MSF took over the recruitment and funding of these positions in 2011 ensuring appropriate age, disposition and training of this cadre.
STAFF APPROACH	
Trained in youth friendly approaches Reception, counselling and clinical staff all require youth friendly training/orientation.	While efforts were made to initially train and mentor clinical staff, there was no formal training programme/ orientation put in place which each staff member was required to attend on joining the team.
Active reception/patient navigator Youth are often anxious to request guidance and often leave the clinic if it is not clear where to access HCT or any other required service. Active support from reception is important. Where it is not possible for all reception staff, at least one staff member should be allocated to identify youth patients and support service navigation.	MSF introduced a patient navigator in Site C Youth in 2016 to trial active engagement with youth entering the clinic or moving between services in the clinic.

ADAPTED SERVICE PROVISION		
Reduction in number and frequency of clinic attendances This includes visits required to initiate ART after HIV		All 3 interventions outlined in this report reduced the number of required return visits to the clinic and frequency of such visits.
Reduction in waiting times		Site C Youth achieved shorter waiting times as they were only providing services to youth.
Integrated service provision to youth		
<i>SRH services</i>		SRH services including FP and STI management have always been provided by the same provider as HIV management services. Youth clubs integrate FP. TOP services were provided in a separate confidential space within the clinic.
<i>PMTCT services</i>		Youth received basic ante-natal care (BANC) at the youth clinic from 2014 and were referred to the adult clinic ante-natal service only for complicated case management.
<i>TB services</i>		Youth were referred to the adult clinic TB service for TB management with continued HIV/ART management at Site C Youth.
<i>Pharmacy services</i> Where it is not possible to run a separate pharmacy, alternative hours or pre-packing ART for a youth service could be considered.		The youth clinic did not have its own pharmacy, youth had to collect drugs at the adult clinic pharmacy other than ART for youth club members which was pre-packed and distributed either at the youth club or afterwards by the club nurse.
Youth specific models of care Implementation of models of care designed for youth retention actively		The model of care (combined interventions) implemented at Site C youth as described in this report ensured a youth specific model.
Approach to support transition to adult services		Site C Youth referred patients who turn 26 to the adult clinic with no specific support to ensure seamless transition. The youth club transition approach to adult clubs ensures a smoother transition of a group of peers
Extended hours Extended hours either early morning, late afternoon or on the weekends increases accessibility for school attending youth. Extended hours can also be used to provide a youth only space.		Site C Youth does not provide extended hours. Running school-going youth clubs was difficult to fit within clinic opening times.
Single service provider/continuity of care		Only BANC and youth clubs ensured a single service provider with which the patient could develop a relationship.
PATIENT EDUCATION AND RESOURCES		
Waiting room education talks		TAC provided daily waiting room talks at Site C Youth. Topics were not always adjusted to cater to youth areas of interest.
Visible youth focused posters and easy access pamphlets		MSF introduced posters and pamphlets that explained ineligible and eligible care pathway, youth clubs, serodiscordancy, partner testing, importance of repeat testing and TOP services (see appendices)
Youth favoured condoms		MSF conducted a trial on the popularity of alternatives to Choice condoms in Site C Youth and found youth preferred flavoured and colourful condoms [Ashmore & Henwood (2015)].
Youth activities		Most youth activities resulted from the youth club model as described above. In addition, the introduction of the monthly broadcast from the radio booth in the clinic's reception attracted youth to the clinic on this day each month.

CONCLUSION

Retaining HIV positive youth from HIV diagnosis, requires the implementation of a continuum of interventions within the clinic setting, to ensure the rapid and ongoing provision of youth acceptable psychosocial support and clinical management.

Implementation of same-day CD4 testing using POC technologies reduces the number of youth lost between receiving their HIV positive diagnosis and ascertaining their ART eligibility.

Combining the implementation of same-day POC CD4 testing with ART preparation counselling model supporting rapid ART initiation for those ART eligible, further reduces youth losses before starting ART and time to ART initiation by 3-4 weeks.

Providing HIV positive youth with the option to enroll into a group model of care such as youth clubs early on in their HIV care pathway, facilitates exposure to peers who have already initiated ART and have successfully integrated adherence

into their lives. This provides youth acceptable psychosocial support, which is integrated with the provision of simplified clinical care and ART delivery.

These youth linkage and retention interventions are needed and can feasibly be implemented in non-youth specific clinics. Implementing youth differentiated models ensures the provision of a youth friendly service and can further be enhanced by introducing youth specific service spaces, flexible youth-only clinic times and training staff to work with youth.

With the introduction of test and treat in South Africa, a comprehensive approach that supports rapid initiation of youth after diagnosis and offers immediate access to youth specific models of care and ART delivery, which in turn aid effective transition into adult models, are essential to retain increasing numbers of youth diagnosed with HIV and initiated on ART.



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APPENDICES

POC CD4 implementation:

- Patten GE et al JIAS 2013

Rapid ART initiation counselling model:

- Eligible pamphlet
- MSF Rapid ART initiation counselling model report and toolkit
- Rapid ART initiation counselling register

Ineligible ART counselling/serodiscordancy educations/virtual mentorship:

- Ineligible pamphlet
- Ineligible session plans
- ART ineligible register
- Serodiscordancy IEC
- Virtual mentor training powerpoint and IEC

Youth clubs:

- Youth club IEC
- Youth club session plans
- Youth club registers
- Youth club training and presentation
- Wilkinson et al AIDS 2016
- Youth empowerment video clips
- CRF episode on PREP

Other IEC:

- Couples testing poster
- Repeat testing approach
- TOP poster



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