



# PROGRAMME SCIENCE IN ACTION:

## Insights from Anova's HIV & TB programmes



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Anova Health Institute extends our heartfelt appreciation to the individuals and organizations whose contributions have shaped this work. Special thanks to the healthcare workers, managers, and service users who participated in our implementation science and quality improvement projects. Sharing your invaluable insights has contributed to service delivery improvements and expanded public health knowledge.

We would particularly like to express gratitude to the Gauteng, Limpopo and Western Cape Departments of Health, including the Johannesburg, Sedibeng, Capricorn, Mopani, and Cape Town Districts for their support of our programme science work. Our partnership provides a unique opportunity to contribute to health systems improvement. The time, energy, and expertise of the Provincial and District Research Committees are appreciated.

Implementation science, behavioural science, and quality improvement are pivotal tools in enhancing healthcare outcomes. The value of these endeavors extends beyond academic inquiry to impact the well-being of individuals and communities. The dedication of all stakeholders to these principles continues to contribute to meaningful improvements.

We would also like to underscore the importance of sharing best practices widely. By disseminating the knowledge gained from this joint work, we aim to catalyze positive change and contribute to the pool of insights that drive progress in public health.



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## **1.1**

# **Understanding Retention and Engagement: How can we improve?**

# Understanding retention and engagement: How can we improve?

Authors: Tamaryn Nicholson & Kate Rees  
Prepared by Melanie Bisnauth

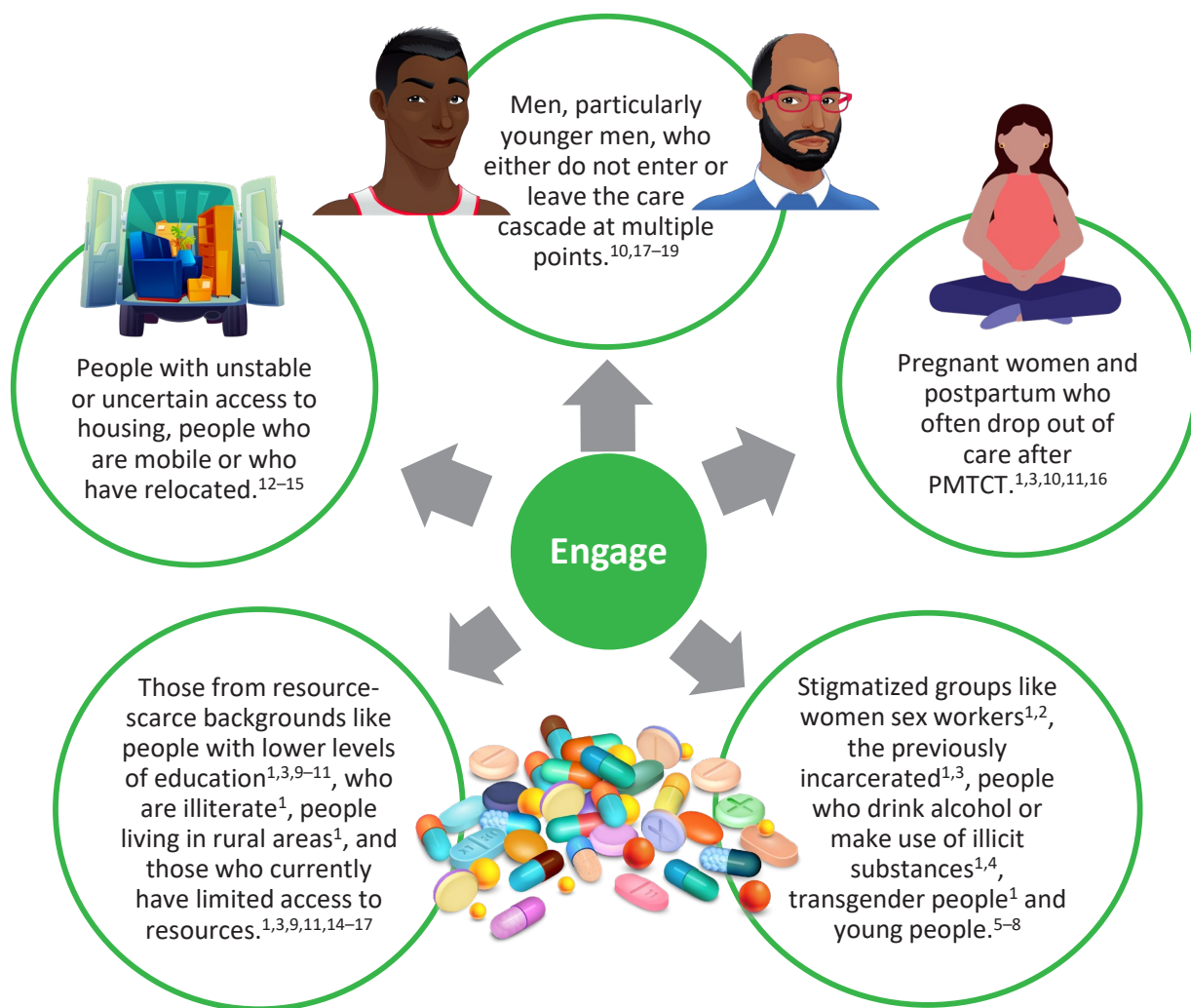
## We must understand retention

Improving retention is critical to the South Africa's HIV programme's achievement of the 2<sup>nd</sup> or 3<sup>rd</sup> 90-90-90 targets (ART coverage and viral suppression). In this summary, we outline a) who we're losing from care, b) why we're losing them, and c) how we can change these patterns.

### Who are we losing?

People respond to care in different ways and health providers respond to people differently. This means that some groups are more or less likely to be initiated on ART and remain in care.

*Currently, research indicates that we must pay attention to engaging with the following target populations:*



There is usually not one factor that causes disengagement, but multiple factors **act together** to keep people out of care.

# Understanding retention and engagement: How can we improve?

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## Why are people being lost from care?

There are opportunities for disengagement across the care cascade, each of which presents an opportunity for someone to be lost from care. In addition, many of these factors have the potential to act together to produce breaks in care - *keep people out of care* - once interrupted.

While any one factor can have a negative impact, the cumulative impact of several factors causes longer term disengagement (Figure 1). For example: A person might have an initial general dislike for, or distrust of Western medicine but still attend a clinic for ART. Their remaining distrust, however, can be compounded by factors like concerns or worries about the effects of ART, difficulty getting to the clinic and/or the features of the clinic and staff itself. A disruptive event like not being able to secure childcare during an appointment might cause this person - already disinclined to attend the clinic - to miss the appointment resulting in a short-duration disengagement. Missing this appointment might, in turn, result in a negative reaction from clinic staff reinforcing a lack of trust in the healthcare system, longer-term disengagement and unwillingness to return.

As a result, we should think of retention and disengagement as long-term processes rather than a particular short-term cause and effect dynamic. Throughout engagement with the health care system, patients face multiple opportunities in which engagement can either be reinforced or undermined; this can originate from their personal and professional lives in addition to direct engagements with the health care system itself.

Figure 1. Factors for Longer Term Disengagement

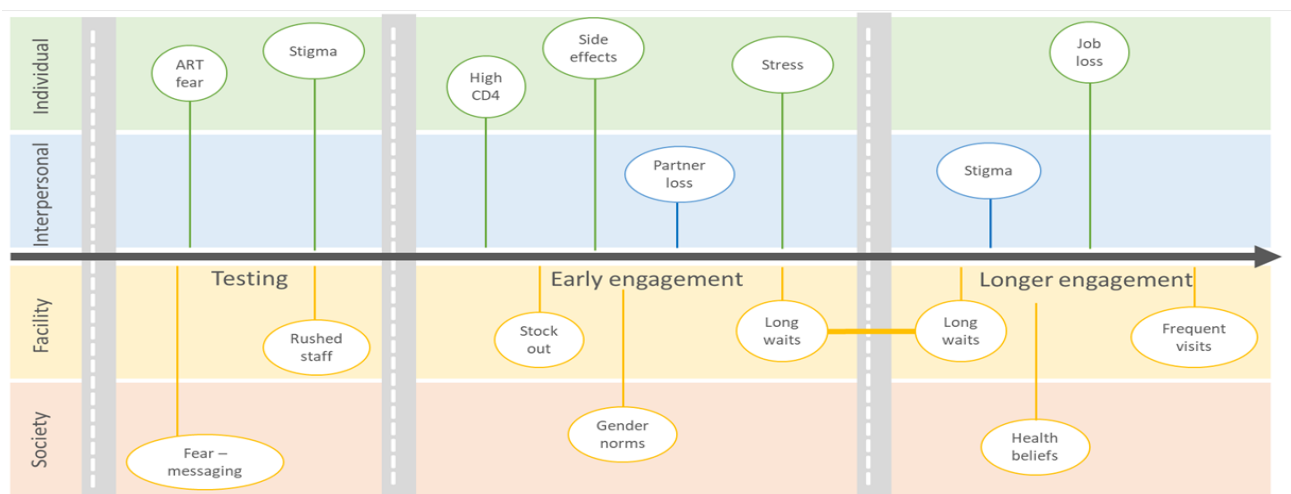


Figure 2. Factors affecting disengagement from care over the course of time

# Understanding retention and engagement: How can we improve?

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To maintain and promote engagement, we need to be mindful of the way that interactions and issues, even at initial points of contact like testing, can continue to affect care engagement along the entire care cascade. In this way, we can prevent the 'tipping point' from being reached and keep more patients in care.

## Facility Barriers

There are a great number of factors that impact on whether or not people remain engaged in care at the facility level. This includes those related to treatment options and effects, relationships with clinic staff, the amount of support staff receive, the facilities themselves and the services they offer.

As can be seen above, barriers to health facility level factors, like staff-patient relationships and dynamics, are undercut by systemic problems fueled by a lack of resources. Because of this, actions taken to address these barriers must also speak to underlying causes like high workloads and low levels of training.

**Barriers to engagement** can operate within and across multiple levels including the intrapersonal, interpersonal, health facility and social level. These are often connected. However – while not absolute – we do have more control over what happens in health facilities and as part of healthcare programs.



Side effects ART fears



Few patient-friendly services



Patient-provider Relationships

## What can health services do?

One of the most frequently cited ways to help people to remain engaged in care is through social support; this can come from families, friends, or romantic partners but it can also come from health facility staff and services.

At the health system level, peer support in the form of peer education<sup>3</sup>, peer mentors<sup>3</sup>, peer support groups<sup>8</sup> and the provision of emotional and psychological support from peer counsellors.<sup>22,1,27,28,30</sup> Counselling can also help with reducing internalized or felt stigma.<sup>22</sup> Similarly, support groups and support in the form of adherence, ART education or other networks and/or clubs help to prevent disengagement.<sup>1,2,22</sup>

# Understanding retention and engagement: How can we improve?

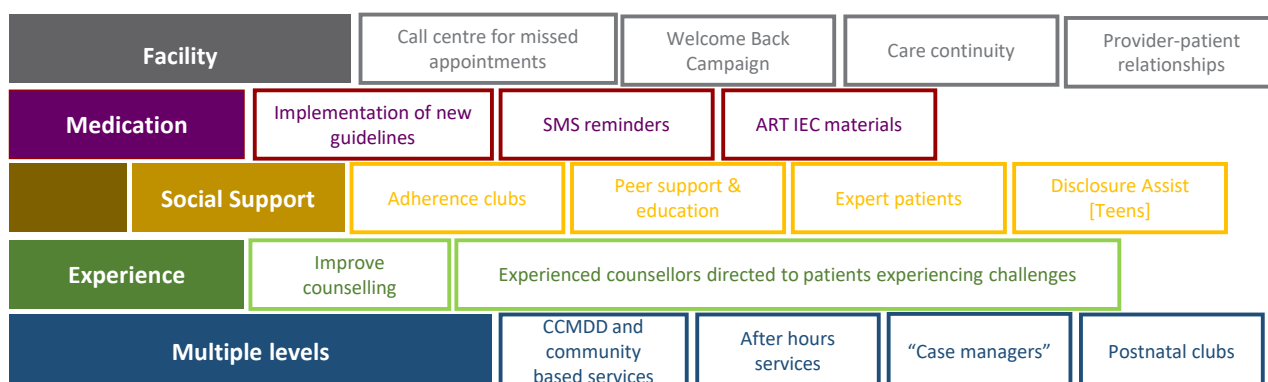
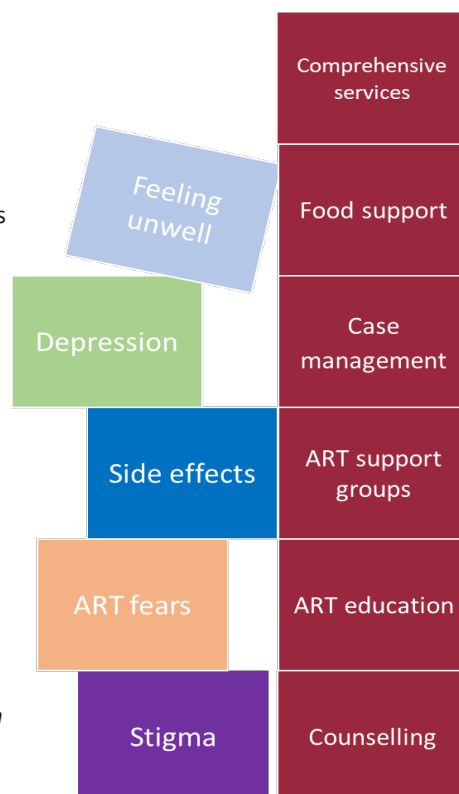
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In addition to this type of support, some facility services are associated with increased engagement including:

- integrated care
- offering service packages tailored to particular groups
- providing food support
- using mobile technology interventions to provide appointment reminders and between-visit clinic contact
- providing transportation assistance
- providing point of care tests and speedy test results
- instituting patient education and empowerment initiatives
- implementing intensive case management strategies

Fortunately, while we might not be able to address the personal challenges faced by individual patients in their daily lives, we may still be able to reduce the cumulative burden of continued care-engagement by providing support services via health facilities (Figure 3) and enabling close interpersonal relationships between staff and patients. In doing so, we can prevent disengagement from care.

**Figure 3 highlights the interventions being implemented in Johannesburg Health District with the support of Anova to address the different factors in which impact retention along the care continuum.**



**Figure 3. Interventions being implemented in Johannesburg Health District with support from Anova**

# Understanding retention and engagement: How can we improve?

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Prepared by Melanie Bisnauth

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**1.2**

## **Welcome Back Campaign Evaluation: How to encourage re- engagement with ART.**

# Welcome Back Campaign Evaluation: *How to encourage re-engagement with ART*

Authors: Melanie Bisnauth and Kate Rees

## Introduction

When people living with HIV (PLHIV) stop their antiretroviral therapy (ART), they experience poor health outcomes- up to 30% of hospital HIV-related admissions are amongst people off treatment. They will also not be virally suppressed, which means an increased risk of transmission of HIV. The high number of people who interrupt treatment partially explains why HIV/AIDS related deaths are not declining in South Africa.

To improve morbidity and mortality and decrease transmission, we need to re-engage PLHIV who have been lost from care.

## Why did we want to look at this?

The Welcome Back Campaign (WBC) was developed in collaboration with Médecins Sans Frontières ([www.msf.org.za](http://www.msf.org.za)), and consisted of two parts:

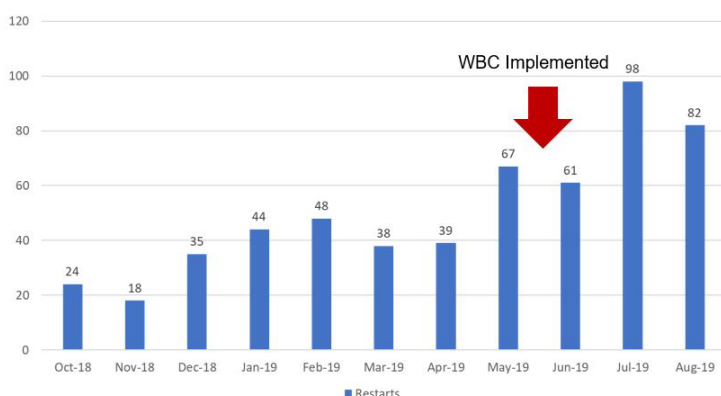
1) training for health care workers on how to manage clients restarting ART and 2) mass media messaging about returning to care.

We wanted to understand whether the campaign led to an increased number of clients returning to care, whether the training led to changes in how clients were managed, and why clients interrupted treatment and decided to return to care.

## What was our approach?

- The evaluation was conducted in 6 facilities of one sub-district of Johannesburg, Region E.
- We analysed routine TIER.Net data (including the number of people in care, and number of people restarting treatment).
- Implementation of the approaches covered in the Welcome Back training was assessed using qualitative interviews with health care workers.
- Understanding of clients restarting ART was investigated using surveys completed for clients returning to care.

## People restarting ART (Oct 2018 - Aug 2019)



## What did we find out?

**Region E** had a **92% increase**- almost double - in people returning to care- after WBC implementation. This was the highest increase amongst all the regions in Johannesburg.



# Welcome Back Campaign Evaluation: *How to encourage re-engagement with ART*

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A total of 143 Welcome Back Client Forms were completed over an 8-week period from the following 6 Region E facilities. The highest number of forms were received from Alex CHC and 4th Avenue Clinic.



## Client characteristics for WBC

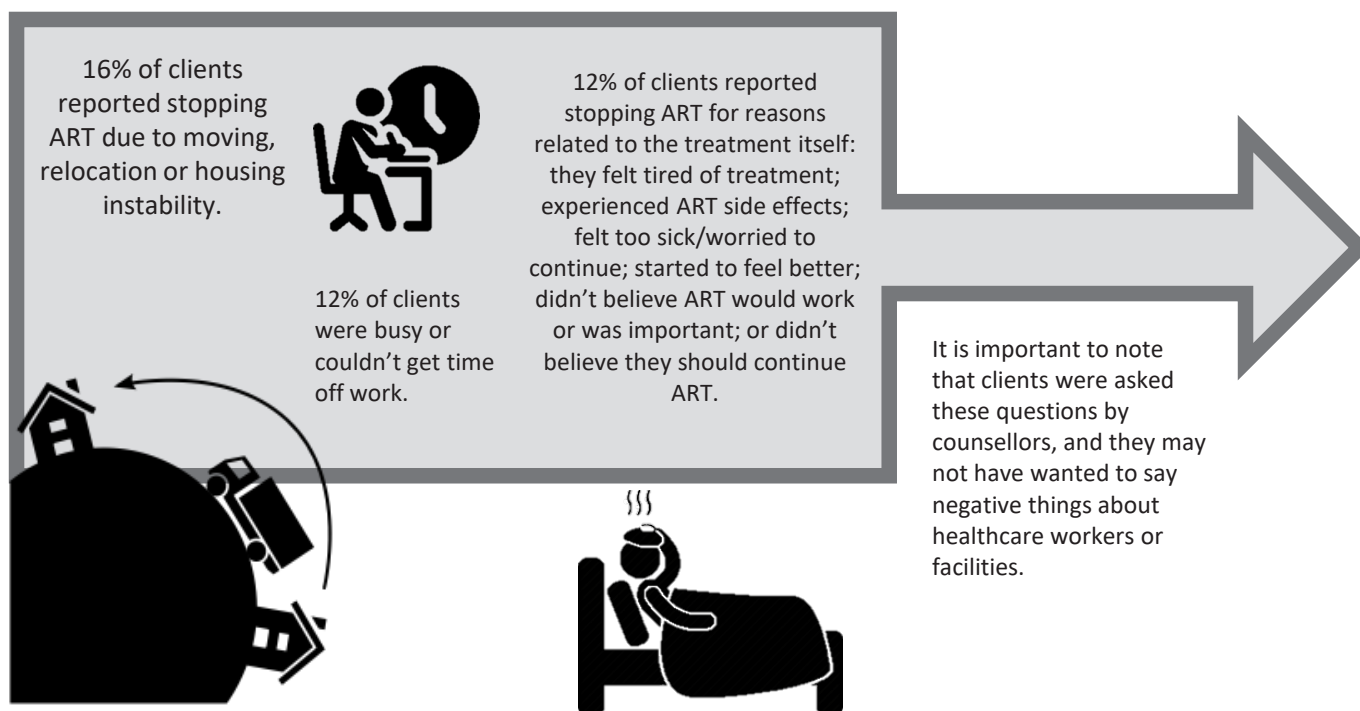
- 53% (56) clients were unemployed, 31% (33) employed and 14% (15) preferred not to answer.
- 91% (116) clients returned to the same facility vs. 9% (12) clients accessed a different facility.
- Of the 9%, 8 clients accessed care in the rural, and 3 clients in the peri-urban.
- 17% (22) of clients reported they knew their last CD4 count, 70% (93) stated they did not know their last CD4 count and, 14% (18) stated they don't know what CD4 is.



# Welcome Back Campaign Evaluation: *How to encourage re-engagement with ART*

Authors: Melanie Bisnauth and Kate Rees

## SO WHY ARE CLIENTS STOPPING ART?



## WHY DO CLIENTS RETURN?



### Why are clients returning to specific clinics?...

Clients select clinics based on the following reasons:

- 71% reported it was nearest to where s/he lives.
- 7% reported the clinic is nearest to their work.
- 5% reported their friend recommended the clinic.



# Welcome Back Campaign Evaluation: *How to encourage re-engagement with ART*

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## WHAT FACTORS KEEP CLIENTS IN REMAINING IN YOUR CARE?



24% (26) of clients responded that counselling would help keep them in care.

36% (40) of clients responded SMS reminders & 8% (9) check-in phone calls would help.



Only 12% (15) responded they did hear about WBC. However, 87% (13/15) clients that said, 'Yes' they heard about WBC *also* stated, 'the WBC influenced their return to care'. 75% (9) clients responded they received information from a clinic/hospital, compared to 17% (2) clients were exposed to WBC through radio.

A total of 36 healthcare workers were interviewed across the following 6 Region E facilities.

- Interviewees included nurses, counsellors and clinicians.



### STAFF FAMILIARITY AND RESPONSIBILITY FOR WBC

- 97% (35/36) of staff responded they are familiar with the Welcome Back Campaign.

### CLINICIAN AVAILABILITY/CLO NAVIGATOR

- 75% (27) of staff responded that there is a single clinician at the facility who sees all clients who come back to the clinic after a treatment interruption.
- 78% (28) of staff responded that there is a specific person such as a CLO designated to help clients navigate the facility and processes when returning to care.

## WHAT HAPPENS AT THE FACILITY WHEN SOMEONE RETURNS AFTER TREATMENT INTERRUPTION?

- Most healthcare workers provided positive answers as to how clients returning to care are managed at their health facility.
- However, 25% responded across 3/6 facilities that clients are sent to the back of the queue and staff insist on transfer letters.
- 94% (33) of staff responded they educate and offer differentiated care, 83% (29) welcome, and 77% (27) encourage those that return.

# Welcome Back Campaign Evaluation: *How to encourage re-engagement with ART*

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## HEALTHCARE WORKER RESPONSES ON THE PURPOSE, AIMS AND OBJECTIVES OF THE WELCOME BACK CAMPAIGN



## HOW DO YOU THINK WE SHOULD TREAT PEOPLE WHO RETURN TO CARE? WHY?

*"Welcome them and the express importance of counselling so that we avoid interrupting treatment again. Refer if necessary to a social worker- with no judgement."* [R119]

*"They deserve to be treated with dignity, respect and integrity, a good warm welcome back."* [R123]

*"They should be treated fairly without discrimination so they can be free to express their problems and difficulties."* [R140]

*"The welcome back campaign should be ongoing as this makes [it] easy for patients to communicate freely without having fear of being treated badly."* [R94]

*"Allow them to tell us their challenges with taking treatment and how can we change that to overcome the[se] challenges."* [R97]

*"It is braveness on its own to have insight and come for their medication all over again. You may not know what caused them to stop."* [R121]

# Welcome Back Campaign Evaluation: *How to encourage re-engagement with ART*

Authors: Melanie Bisnauth and Kate Rees

## Can you give me an example of the wrong things to do when people return to care?

- 74% (26) staff responded that sending an individual to the back of a queue or criticize/judge/punish.
- 66% (23) responded insisting on transfer letters are wrong things to do when people return to care.
- 25/36 (69%) staff responded stating they have seen or heard other staff members acting this way...



28% of staff insist on transfer letters, 7% lecture clients and 3% judge/refuse clients if previous treatment can't be proven, refusing ART.



## Staff responses of what they have seen others do included the following examples:

*"Yes, defaulting patients from ART treatment are refused treatment and [are] told to go back to their clinic where they started their treatment."*

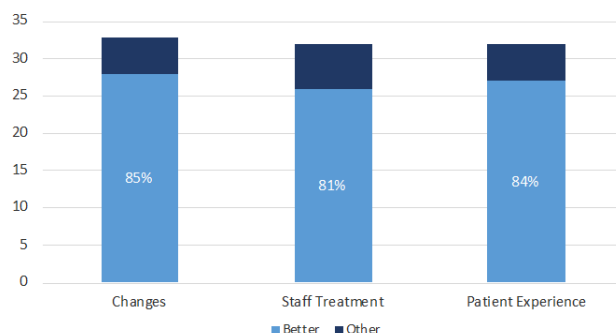
*"Staff members shout at clients for refusing treatment and make them wait longer to be helped."*

*"Before this campaign, patients would be treated later after everyone else. The patient [is] sent to the back of the queue or they are rebooked for another date."*

79% (23) staff responded they welcome, 62% (18) responded they create a treatment management plan followed by encouragement and education 59% (17).

## Following the Welcome Back Campaign

- 85% (28) staff believed patient and staff relationships improved.
- 81% (26) believe staff treatment of patients improved.
- 84% (27) staff believe patient experiences improved.





# Welcome Back Campaign Evaluation: *How to encourage re-engagement with ART*

Authors: Melanie Bisnauth and Kate Rees

## TAKE-HOME MESSAGES

1

The number of people returning to care increased after the Welcome Back Campaign, however 88% of those clients had not heard any messaging.

2

Training may have sensitised/capacitated healthcare workers to probe more deeply into prior ART experience. Asking counselors to complete the forms for people returning to care may have also increased awareness.

3

The majority of clients restarting ART were doing so at the same facility. It is not known whether this finding would be different in other parts of Johannesburg, or whether clients were unwilling to tell counselors that they had been in care elsewhere before.

4

The most commonly reported reasons for stopping treatment were moving, relocation or housing instability.

5

Approximately 30% of clients said they restarted treatment when it became easier to get to the clinic again.

6

Close to 40% said they restarted because they felt ill or were worried about *not being on ART*.

7

The three most commonly requested support interventions were SMS reminders, counselling and check-in phone calls.

8

Most healthcare workers answered questions about how they treat people restarting treatment positively. However, 25% said such clients are sent to the back of the queue at their facility, and many reported seeing clients treated badly by other HCWs.

9

The majority felt that people restarting ART were treated better since the onset of the campaign.

## SO WHAT?

The Welcome Back Campaign has supported healthcare workers to improve their approach to clients restarting ART. However, negative attitudes and practices remain. Clients will continue to face challenges in their lives that make it difficult to stay in care. We need to ensure health services are flexible enough, and healthcare workers understanding enough to minimise treatment interruptions when this happens. We need to focus on ways to improve accessibility of services when life gets in the way.

## Find out more at:

<https://pubmed.ncbi.nlm.nih.gov/34473742/>

<https://theconversation.com/hiv-treatment-in-south-africa-how-to-help-people-stay-on-arvs-when-life-gets-in-the-way-190684>



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## **1.3**

**Case Management leads to a small improvement in viral suppression in Capricorn District Limpopo Province.**

# Case Management leads to a small improvement in viral suppression in Capricorn District, Limpopo Province

Prepared by: Chipu Mutyambizi, Molebatsi Maholola, Nthabiseng Motsoane, Kate Rees

## INTRODUCTION

Adherence, retention and viral load (VL) suppression are focus areas in Limpopo Province. Case management is a structured counsellor-led, patient-centered approach incorporating various strategies including enhanced adherence counselling and psychosocial support. Case management aims to improve adherence, retention and viral suppression.

Case managers follow clients for up to 6 months depending on client needs. Engagements may be virtual or in-person and include adherence support, appointment reminders and tracing of missed appointments.



### What were our objectives?

This study aimed to determine the impact of case management on viral load in patients enrolled due to viral unsuppression in Capricorn District, Limpopo Province.

## DID YOU KNOW

To promote adherence in people with a high viral load the World Health Organization recommends enhanced adherence counselling for 3 to 6 months

## METHODS

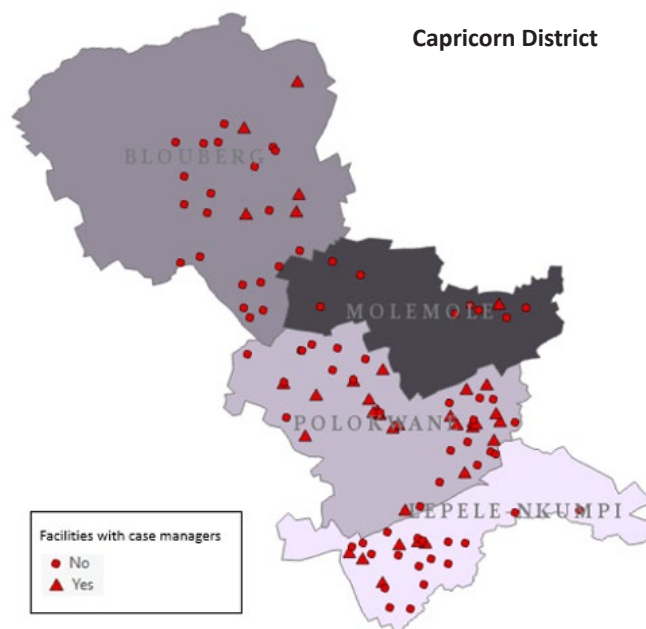
### Study location:

- Our study was conducted in Capricorn District, one of five districts in Limpopo Province, South Africa
- The district is predominately rural and has a population of approximately 1.2 million people

### What was our approach?

We conducted a case-control study using two data sources:

- 1) Data for the cases (people who were not suppressed and received case management) was taken from the case management REDCap database. We included data for patients with an unsuppressed viral load at case management enrolment. Any VL taken between 30 to 180 days after enrolment was included as post intervention.
- 2) Data for controls (people who were not suppressed and DID NOT receive case management) was taken from Tier.net data extracted in January 2023. Our sample was restricted to only those records from facilities without case managers, and with at least two VLs on record (the first of which was not suppressed).





# Case Management leads to a small improvement in viral suppression in Capricorn District, Limpopo Province

Prepared by: Chipo Mutyambizi, Molebatsi Maholola, Nthabiseng Motsoane, Kate Rees

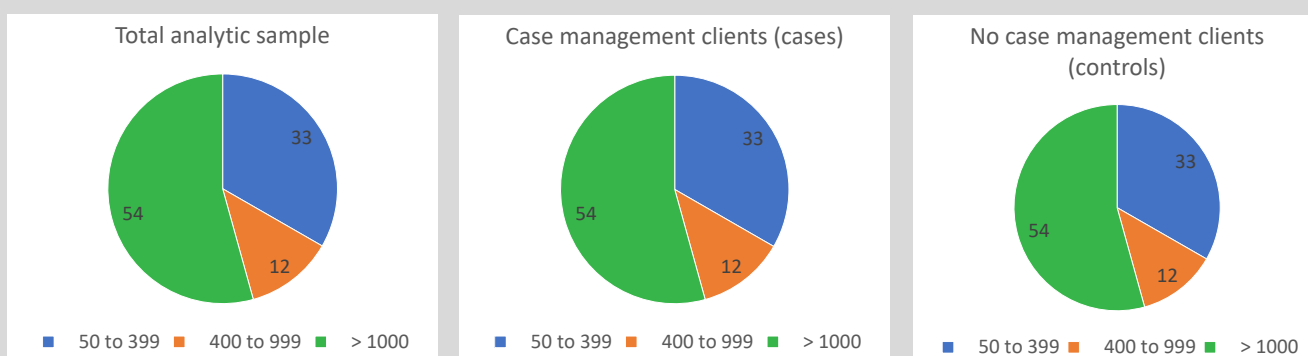
## Selection of controls:

1. Groups with similar age category, gender and VL at enrolment were created for cases and controls
2. We counted clients receiving case management in each age/gender/VL group (cases)
3. We randomly sampled an equal number of clients not receiving case management from each age/gender/VL group (controls)

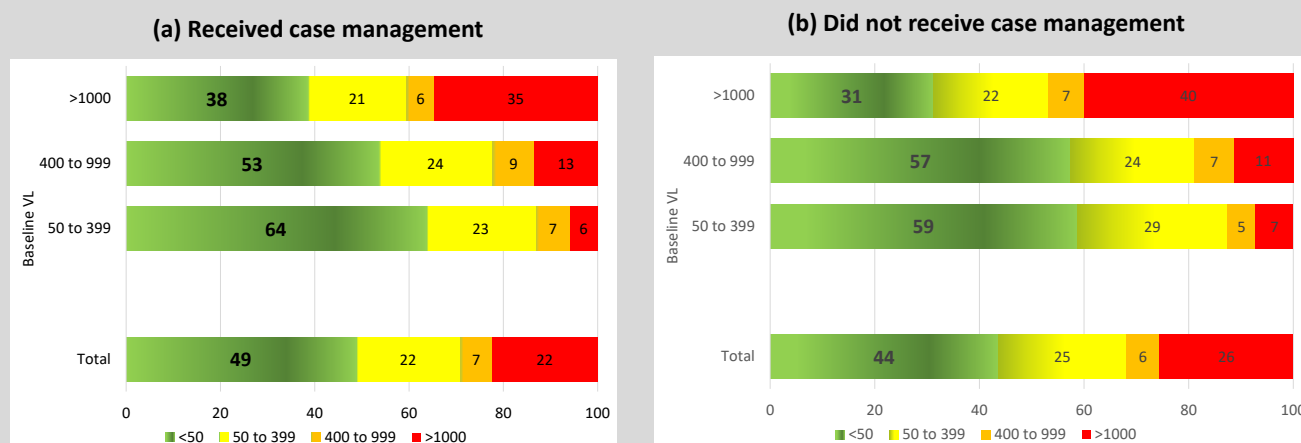
## RESULTS

- The final sample used for this analysis was 3 258 records, half of them had received case management
- The majority of the clients were female (69%)
- Approximately 57% were 35–54-years old
- 60% had been on ART for 3 to 10 years
- The majority of people in our sample had a viral load of > 1000copies/ml at enrolment
- The group that received case management was similar to the group that did not receive case management

## Baseline Viral Load



## Viral Load



**49% became suppressed (VL1<50copies/ml)**

- 64% of those who started 50-399
- 53% of those who started 400-999
- 38% of those who started >1000

**44% became suppressed (VL1<50copies/ml)**

- 59% of those who started 50-399
- 57% of those who started 400-999
- 31% of those who started >1000

# Case Management leads to a small improvement in viral suppression in Capricorn District, Limpopo Province

Prepared by: Chipo Mutyambizi, Molebatsi Maholola, Nthabiseng Motsoane, Kate Rees

## Factors associated with viral load suppression

Factors positively associated with viral suppression

1. Patients who received case management were more likely to become suppressed when compared those who did not
2. Patients who were over the age of 25 years were more likely to become suppressed than those under the age of 25 years

Factors negatively associated with viral suppression

1. Male patients were less likely to become suppressed when compared to female patients

## How did baseline viral load impact on these factors?



1. Case management  
Case management had a bigger impact in people who started with a viral load of less than 1000copies/ml or more than 10000copies/ml



2. Men  
Men were less likely to suppress when starting with a baseline viral load of 1000-9999copies/ml



3. Age  
Those over the age of 55years were more likely to suppress when starting with a baseline viral load of <10000copies/ml



4. Years on ART  
Those with more than 1 year on ART were less likely to suppress when starting with a baseline viral load of >10000copies/ml

## Conclusion

- Our study found a small but significant effect of case management on viral suppression for people enrolled into case management due to unsuppressed viral load. The proportion suppressed for those under case management was slightly more than those not under case management
- We also see a higher impact of case management for those who had a baseline VL of <1000copies/ml and >10000copies/ml. This could be because those with a VL of <1000copies/ml may be experiencing short lived adherence challenges and case managers may also be prioritizing those clients with a VL>10000copies/ml
- Our study shows that older age supports viral suppression and men need additional support
- Differentiated services for virally unsuppressed clients would be helpful for men and those below the age of 25years

## Key take-aways

- Case management had a positive impact on VL suppression however many people remained unsuppressed, about 50% of our clients remained unsuppressed.
- This illustrates that although case management can reduce some of the barriers to adherence and retention, barriers still exist. The program should work to understand these barriers and ways to address them.



## 1.4

**Text messages using the “fresh start” effect could help people living with HIV return to care.**

# Text messages using the “fresh start” effect could help people living with HIV return to care.

Prepared by: Christine Njuguna, Chipu Mutyambizi, Cara O'Connor, Barry Mutasa, Kate Rees.

## Introduction

- By 2030, modelled data suggest that 78% of people living with HIV (PLHIV) who know their status will be on ART, missing the second UNAIDS 95-95-95 target.
- ART interruption or loss to follow up is high in South Africa, at 18-30%.
- Treatment interruptions increase the risk of morbidity and mortality, treatment resistance, and HIV transmission.

## Study rationale

- Previous studies have shown text messaging can promote adherence and appointment keeping.
- Interventions using the “fresh start” effect are promising.
- We wanted to see if we could use text messages including the fresh start effect to encourage return to care.

## Study objective

Can using the “fresh start” effect around temporal landmarks (holidays) in text messaging increase the number of people who return to ART after a missed appointment?



### What is a “fresh start effect”?

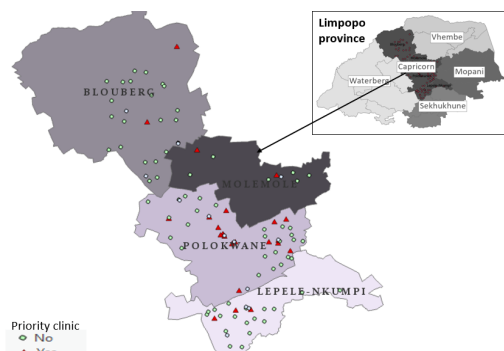
The “fresh start” effect is the tendency to take action towards a goal after a special occasion or key date. A common example is New Year.

We used the holidays Youth Day and Mandela Day.

## Methods

### Study setting:

- The study was conducted in Capricorn District, Limpopo Province.
- All 4 sub-subdistricts were included: Blouberg, Lepelle-Nkumpi, Molemole, and Polokwane.
- All clinics were included.
- Tier.NET was the data source.



### What was our approach?

We randomized adults who had missed ART appointments by more than 28 days to:

#### Arm 1: No text message group

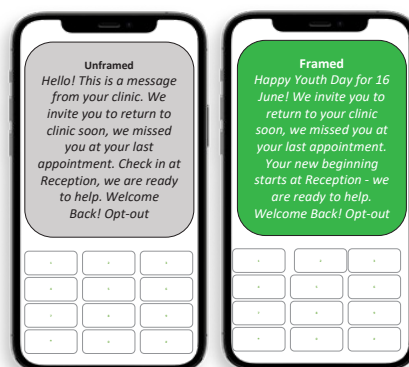
- Received routine tracing activities as per DOH guidelines.

#### Arm 2: Unframed text message

- Received routine tracing activities as per DOH guidelines.
- Received two text messages- first message sent five days before the holiday, second message one day after the holiday.
- No mention of the holiday in the text message.

#### Arm 3: Framed text message

- Received routine tracing activities as per DOH guidelines.
- Received two text messages- first message sent five days before the holiday, second message one day after the holiday.
- Text message explicitly mentioned the holiday (Youth Day/Mandela Day).



# Text messages using the “fresh start” effect could help people living with HIV return to care.

Prepared by: Christine Njuguna, Chipu Mutyambizi, Cara O'Connor, Barry Mutasa, Kate Rees.

## Data analysis

- Intention-to-treat analysis was conducted.
- Differences were assessed using Chi square statistics and multivariable logistic regression.
- The primary outcome was return for an ART visit within 45 days of sending the first text message.

## Results

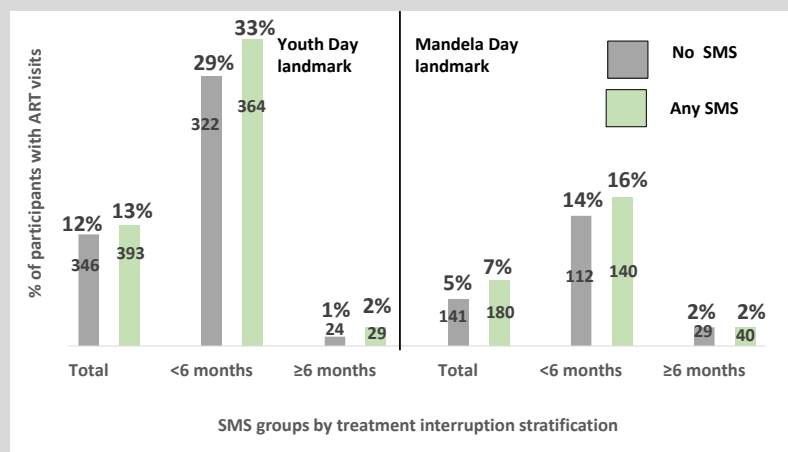


Figure 1: ART visit outcome for no SMS versus any SMS by treatment interruption stratification for Youth Day and Mandela Day holidays.

### Key Finding 1

- A higher percentage of clients who were sent any SMS (*framed* and *unframed*) returned for an ART visit compared to those who didn't get an SMS.

### Key Finding 2

- A higher percentage of people who had been out of care for less than 6 months returned for ART visits.
- Those who had been out of care for more than 6 months were less likely to come back.

### Key Finding 3

- *Framed* messages highlighting the holiday did not improve return to care compared to *unframed* messages (did not mention the holiday).

## Factors associated with an ART visit within 45 days of an SMS

### Factors that increased the likelihood of an ART visit

- ✓ Receiving any SMS (*framed* and *unframed*).
- ✓ Being on ART for >6 months.
- ✓ Being enrolled in differentiated models of care/decanting.

### Factors that decreased the likelihood of an ART visit

- ✓ Treatment interruption ≥6 months.
- ✓ Being enrolled in a high-volume clinic.

## Conclusions

- People who received an SMS were more likely to return within 45 days for both holidays.
- *Framed* SMSs highlighting the holidays did not improve return to care when compared to *unframed* SMSs

## Recommendations

- SMSs could be an efficient way to re-engage people in care after treatment interruption and should be included as part of the package of client tracing.
- Text messaging should be prioritised in those who have missed an appointment by less than six months.



## **2.1**

# **Improving access to HIV testing and treatment services for men in South Africa: a qualitative evaluation.**

# Improving access to HIV testing and treatment services for men in South Africa: a qualitative evaluation

Authors: Catherine Chinyandura & Kate Rees  
Policy Brief Prepared by Melanie Bisnauth.

## Background

Data in South Africa indicate that men use HIV services less frequently compared to women. Men in South Africa are less likely than women to test for HIV and are more likely to start treatment late, interrupt treatment and become lost to treatment follow-up. Community-based HIV services tailored to meet men's needs have been successful in reaching men.

The Score4Life project was launched in 2016 in Johannesburg District, South Africa to offer HIV testing and antiretroviral treatment (ART) initiation services to men 21 years and older. The project ran pop-up clinics/stores which were located in local communities, spread across Johannesburg. The clinics/stores were located in areas of high foot traffic such as taxi ranks and malls. The project employed male-focused strategies to increase service uptake including:



## The Objective

The assessment aimed to explore men's experiences and opinions of services, and what helped and hindered men to access HIV testing and treatment services.

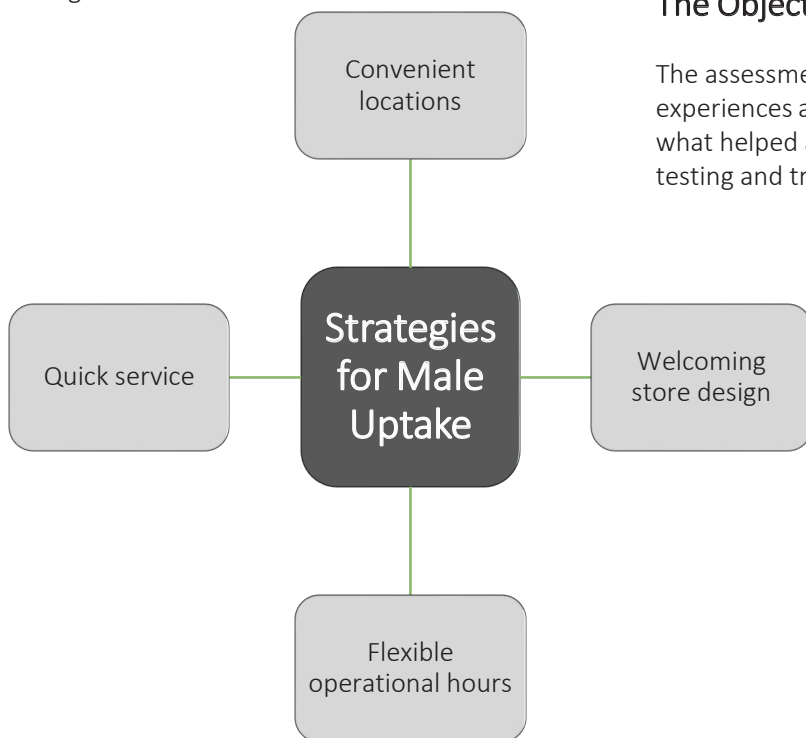


Figure 1. Title



# Improving access to HIV testing and treatment services for men in South Africa: a qualitative evaluation

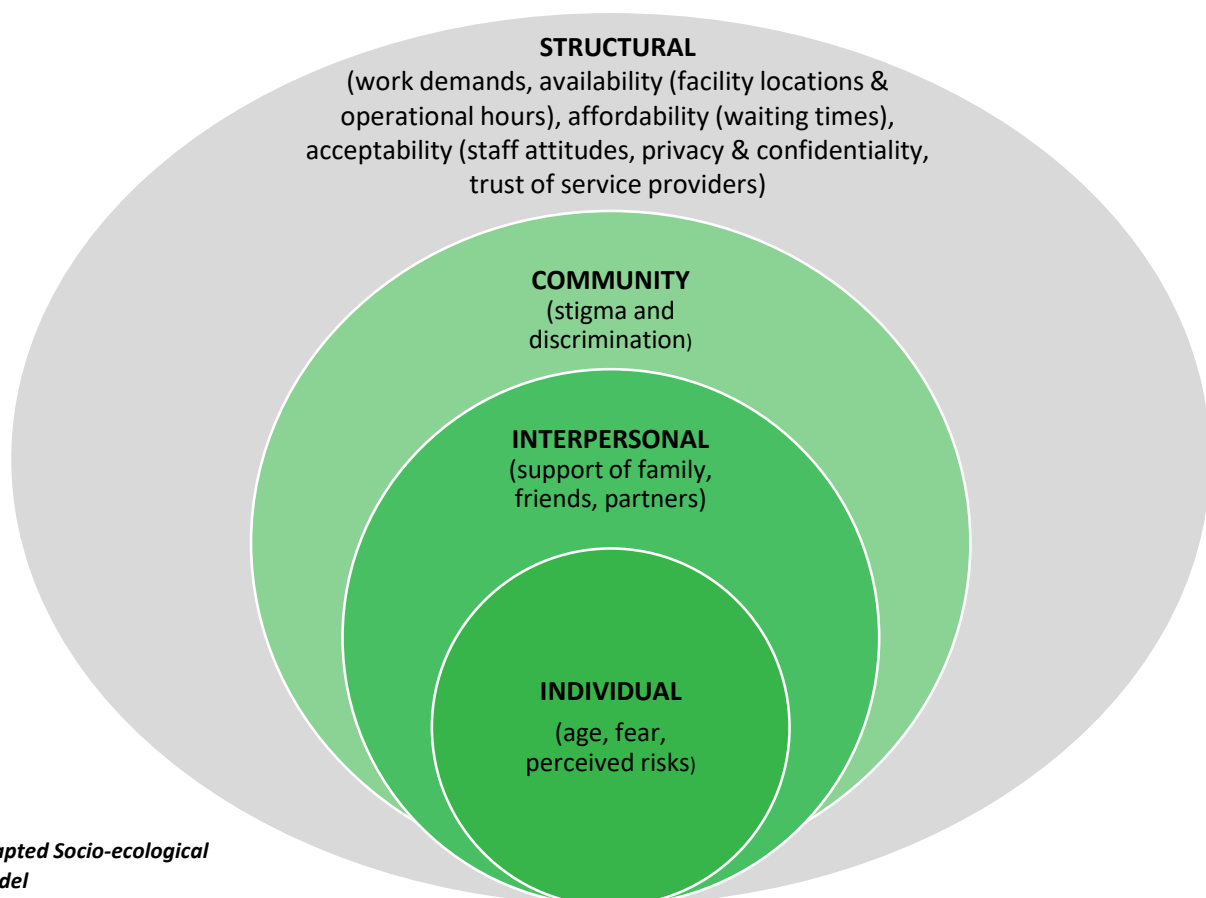
Authors: Catherine Chinyandura & Kate Rees  
Policy Brief Prepared by Melanie Bisnauth.

## What was our approach?

Thirty (30) first and repeat male service users, and fourteen (14) staff members were interviewed at four Score4Life stores/clinics. Data collection was conducted between July-September 2019. Interviews were conducted by a male research assistant fluent in local languages. Interview data was analyzed using qualitative methods. We categorized the data, and identified themes which we report in this summary.

The Socio-ecological Model (SEM) and McIntyre Access to Health Care Framework (McIntyre, Thiede and Birch, 2009; Baral et al., 2013) were used to guide the analysis and report writing.

The SEM made it possible to understand the complex interacting barriers and facilitators located at multiple levels which influence men's access to HIV testing and treatment services. The McIntyre Access to Health Care Framework assisted in a comprehensive understanding and analysis of accessibility. Access is a multi-faceted concept composed of different dimensions: availability (physical access); affordability (financial access); and acceptability (cultural access). For services to be accessible or utilized, they should be available, affordable and acceptable.



**Adapted Socio-ecological Model**



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# Improving access to HIV testing and treatment services for men in South Africa: a qualitative evaluation

Authors: Catherine Chinyandura & Kate Rees  
Policy Brief Prepared by Melanie Bisnauth.

## What did we find out?

There are multiple facilitators and barriers at personal, interpersonal, community, and structural levels that influence men's access to HIV testing and treatment services.

### Facilitators- these factors helped men access services

#### Flexible working hours

Men preferred to access services at Score4Life stores because of extended hours which enabled them to attend after their demanding work-related responsibilities; which often left them with little or no time during working hours and days to seek health care services.



#### Convenient locations

Men were likely to access HIV testing and treatment services at facilities which are conveniently located (near their workplaces and public transport routes and stations).



#### Quick service/ Short waiting times

Participants were eager to utilize Score4Life stores due to quick service delivery. Demand for timely service, was due to work-related pressures which often left them with limited time to seek health care services.



#### Privacy and confidentiality

Participants were comfortable seeking services at Score4Life stores as they offered privacy and confidentiality and safe spaces for men only. They did not worry about being seen by other people.



#### Positive staff attitudes and warm reception

Interactions between health practitioners and men were found to be a key reason for men to use health services. Participants appreciated the warm reception and effective communication they received from service providers.



#### Support from social networks

Support from family and/or friends (social networks) are critical enablers for men to utilize HIV testing and treatment services. Men are willing to share test results with trusted family members, partners and friends.



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## Barriers- these factors stopped men from accessing services

### Fear

Fear linked to how men felt about their own HIV risk and stigma and discrimination contributed to them not wanting to test for HIV.

### Perceived personal risks

Perceived risks can act as a facilitator or barrier to accessing services. Some men wanted to test for HIV because they believed themselves to be at risk due to their past behavior, while others were afraid of being diagnosed with HIV and did not want to test.

### Long waiting times

Long waiting times were linked to service dissatisfaction and decreased willingness to seek health care. The long waiting times also resulted in patients questioning the competency of the staff and decreased their confidence in the health services provided. Frustrations of long waiting times were worsened by waiting in waiting rooms where there was no privacy.

### Negative staff attitudes

Participants showed unwillingness to access health services at health facilities where they expected to be belittled and disrespected.

### Lack of privacy & confidentiality

Lack of privacy during consultations and in waiting rooms were cited as a key deterrent to accessing services.

### Stigma and discrimination

Fear surrounding social exclusion was found to hinder men from obtaining an HIV diagnosis and treatment. Fear of being seen utilizing HIV/AIDS services discouraged men from seeking HIV testing and treatment services.

# Improving access to HIV testing and treatment services for men in South Africa: a qualitative evaluation

Authors: Catherine Chinyandura & Kate Rees  
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## Next Steps

We need to understand more about ART uptake in men, and how it differs from testing uptake. Focusing on men's utilization of ART can offer insights into the factors which need to be considered by service providers to make ART services more accessible to men.



## What Can We Do?

### TAKE HOME MESSAGES

1

Create male-friendly spaces or services within health facilities to encourage men to participate in HIV/AIDS services, like our Male Corners

2

Offer home, workplace, or mobile services for convenience.

3

Increase the flexibility and options for accessing health services through flexible working hours, "one-stop services", co-location with other services", and offering services in non-typical settings.

4

Integrate services to create demand, improve efficiency and non-stigmatise HIV/AIDS services.

5

Leverage the supportive role of partners, family and friends to encourage male engagement in care, for example through family-oriented services and male-friendly index testing.

6

Train health workers on the sensitivities, needs and preferences of men within HIV/AIDS services.

## So What?

Men face several accessibility barriers at individual, interpersonal, community and structural levels. Non-traditional interventions and offering services in unconventional settings have the potential to increase men's uptake of HIV testing and treatment services. Sexual partners, family and friends play a supportive role in men's health.

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## 2.2

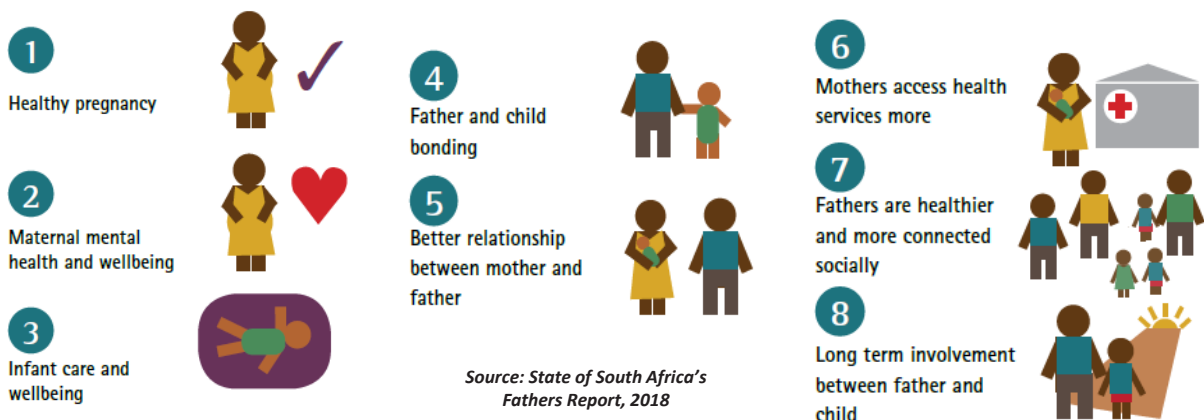
# Men's involvement in Maternal, Neonatal and Child Health (MNCH), why and how?

# Men's involvement in Maternal, Neonatal and Child Health (MNCH), why and how?

Policy Brief Prepared by Cathrine Chinyandura, Kate Rees and Natasha Davies

Men's utilization of HIV services remains lower than that of women resulting in poorer clinical outcomes. Several factors contribute to men's poor service utilization, including stigma, concerns about confidentiality, inconvenient clinic operating hours, fear of an HIV-positive test result, and long-waiting times due to long queues. Novel approaches and strategies are needed to increase men's utilization of health services. For many men, fatherhood is an important part of being a man. MNCH is a key opportunity and entry point to improve male engagement with HIV services and health services in general.

## Why is male partner involvement (MPI) in MNCH important?



## Our Approach

We conducted focus group discussions with men in the City of Johannesburg to understand fatherhood, and facilitators and barriers to male involvement in MNCH services.



### Study design & participants

We conducted an exploratory, qualitative study, primarily using focus group discussions (FGDs) to collect data from male coaches and men from the community. FGDs were composed of 9-12 men drawn from different communities in Johannesburg. Participants were recruited by male coaches working for Anova Health Institute.



### Study site

The study was conducted in City of Johannesburg and FGDs were held in selected venues across the city.



### Data analysis

FGDs data were transcribed and imported into NVivo 12 qualitative data analysis software. Data were analyzed inductively to identify emerging themes.

# Men's involvement in Maternal, Neonatal and Child Health (MNCH), why and how?

Policy Brief Prepared by Cathrine Chinyandura, Kate Rees and Natasha Davies

## Understanding the concept of fatherhood

We explored the concept of fatherhood with the aim of gaining an understanding of what it means to be a father; including what it involves, and the values and attributes attached to fatherhood.

**Provider:** providing material and emotional support for the family was considered the central aspect of fatherhood.

**Protector:** a father has the obligation to protect his children or family from any form of harm.

**Teacher:** a father plays an integral part of guiding, directing and teaching their children life skills and values.

**Available:** actively involved in a child's activities and being present physically and emotionally to interact with children.

**Responsible:** ensuring a child's physical and emotional needs are met.

**Role model:** a father leads by example.



**All participants reported that they had a strong desire to be involved in their children's lives. However, several factors influenced their involvement – familial, economic and social.**

- **Familial:** Participants explained that the degree of involvement sometimes differs between biological and non-biological children.
- **Economic:** Employment schedules and demands were reported as a major constraint to greater involvement in childcare. Participants also highlighted that unemployment was a major limitation in fulfilling the role of a provider.
- **Social:** Strained relationships between the father and the mother of the child (ren) and failure to fulfil cultural obligations such as payment of *lobola* (bride wealth) and/or “damages” were heavily reported as key contributing factors to a father's poor involvement in a child's life. Participants also expressed that social norms on gender roles discouraged men from taking an active role in childcare as it was considered to be a female role. Participants explained that child delinquency sometimes negatively influenced paternal involvement as in most cases it resulted in a poor father-child relationship.

# Men's involvement in Maternal, Neonatal and Child Health (MNCH), why and how?

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## Barriers and Facilitators

The study explored the factors that *encourage* and *discourage* men from accessing MNCH services. The data revealed that several factors at different levels influence men's participation in MNCH services. These factors fall into two categories: health-system related and socio-economic.

### Health-system related barriers

**Negative staff attitudes** result in dissatisfaction with, and respect for, service providers. This reduces the likelihood of men accessing MNCH services the health system and loss of trust.

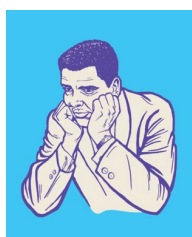


*"Nurses tend to make mean comments, why they ask us about the mother of the child when I bring the child to the clinic?" (FGD 2, P9)*

**Long waiting times** discourage men from attending MNCH services due to long waiting times which are incompatible with other competing commitments.



*"The thing is you end up staying 4-5 hours outside so that discourages us a lot, if it is just me and the baby its better because I am the older person who is with the baby, but if it's the 3 of us then it becomes hard". (FGD1, P5)*



**Boredom and disengagement at health facilities:** Lack of active engagement and stimulation while waiting for services result in boredom which discourages men's utilization of services.

*You come to the clinic, and you are sitting there and doing nothing I think that is what makes men not want to come to the clinic. I think having something to keep men engaged will encourage them to come to the clinic even more". (FGD 3, P6)*

### Socio-economic barriers



**Employment commitments** - work and working hours hinder men's participation in MNCH services. Most participants expressed willingness to support their partners and children but were constrained by work demands and routines.

*"I would say employment, time to do all those things, finding a balance is quite challenging". (FGD 1, P4)*



**Social norms:** Gender and cultural norms which assign maternal and childcare to women hinder male involvement in MNCH. Men feel alienated in the predominantly female space.

*"What discourages on the other side is the society, society standards discourage us from supporting our women and children". (FGD 2, P5)*



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## Facilitators



**Positive staff attitudes:** Men are likely to access MNCH services if they receive warm, favorable and respectful treatment from HCWs.

*"It is sad when we come to the clinic and then you get disrespected by a woman that thing is not nice. Women can bear with it because you can talk. This thing ends up making us not want to come to the clinic because you will think of the disrespect that you will get from the nurses". (FGD 1, P4)*



**Quick service:** Men are encouraged to utilize services where they are offered in a timely way as it allows them to attend to other demands.

*"I am saying time, if you say 2 hours, it must be 2 hours it shouldn't be more. Most men I know and work with have the mentality that women spend so much time in the clinic on purpose. They think their time is not valued, women do not take time seriously". (FGD 3, P2)*



**Male health care workers (HCWs):** The visibility of male HCWs in MNCH spaces helps men to feel at ease.

*"As men being assisted by women is another issue, so we need more male clinicians someone who will understand what you are talking about because they have also maybe gone through the same thing". (FGD 2, P4)*



**Active engagement:** Men prefer to be actively engaged in various ways (e.g group discussions, screening of educational content in waiting areas) while waiting for services to avoid boredom.

*"Sharing of experiences, if there might be a person that seats outside sharing their experiences, and interact with me, they can share something that can encourage you as the father. That way I cannot go back angry and bored, and it encourage me to be a better father". (FGD 3, P5)*



**Positive affirmations from HCWs:** Men feel motivated and are likely to return for services, remaining engaged, when HCWs affirm that their behavior can positively impact their own, their partner's and their child's health.

*"I can speak on my side. I can say encouraging us, talking to us. As you are a nurse when a father brings the child encourage him and talk to him, have positive words for the father so that he gets encouraged". (FGD 1, P7)*



# Men's involvement in Maternal, Neonatal and Child Health (MNCH), why and how?

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## What can health services do?

The findings indicate the need to use different approaches and strategies to strengthen male partner involvement in MNCH services.



**Family-centered approach (FCA):** The data indicated that the organization of MNCH services at facility level contributes to men's underutilization of the services. MNCH services and spaces are currently not structured to facilitate service use by men. Reorientation of services towards a **family-centered approach** is likely to provide a favorable environment for men, encouraging them to attend MNCH services.



**Male-friendly and targeted interventions:** The structure of MNCH services and how these services are offered is crucial to service utilization. Our data showed that men are less likely to use health services when they perceive service providers to be negative, services are not private, are offered at inconvenient hours and require long waiting times.

Enlisting men's involvement in MNCH services requires creating male-friendly and targeted interventions in terms of convenience, privacy and positive patient– provider interactions. **Health services should facilitate men's desire to be good, involved fathers, and harness that to increase service utilization.**



**Capacity building of health care workers (HCWs):** To increase men's participation in MNCH services, it is important that service providers are trained on the distinct needs of men and family-centered approaches.



**Community-based interventions:** Constraining socio-cultural norms limit men's use of MNCH services. Community engagement efforts should be considered to transform cultural norms that discourage men from accessing MNCH services and being involved fathers.



## 2.3

# Improving Postnatal Care For High Risk Mother Infant Pairs at MLMHospital, Ba- Phalaborwa.

# Improving Postnatal Care For High-Risk Mother Infant Pairs at MLM Hospital, Ba-Phalaborwa

Prepared by: Chipo Mutyambizi, Jackie Dunlop, Rendani Ndou, Kate Rees

## Introduction

The postnatal period (6 weeks following childbirth) is a critical time for mother and baby.

During the period mothers are vulnerable to physical and mental health problems, with babies being most at risk of dying in the first month of life. Despite evidence that postnatal care (PNC) reduces neonatal mortality, it has been relatively neglected, including in South Africa. Evidence shows that improved post-natal follow up of pre-term infants would lead to a decrease in the large numbers of post-discharge deaths from respiratory tract infections.

The WHO guidelines recommend:

- Postnatal care in the first 24 hours
- Four postnatal visits: (1) first day; (2) day 3; (3) between days 7-14; (4) six weeks
- Home visits
- Support identification of issues and referrals

We identified a gap in postnatal care, with the 7-14-day visit not included within postnatal routine care in South Africa.



## What were our objectives?

To determine the feasibility and scalability of a model providing an additional telephonic postnatal contact at 7-14-days and to assess the outcomes of the call.

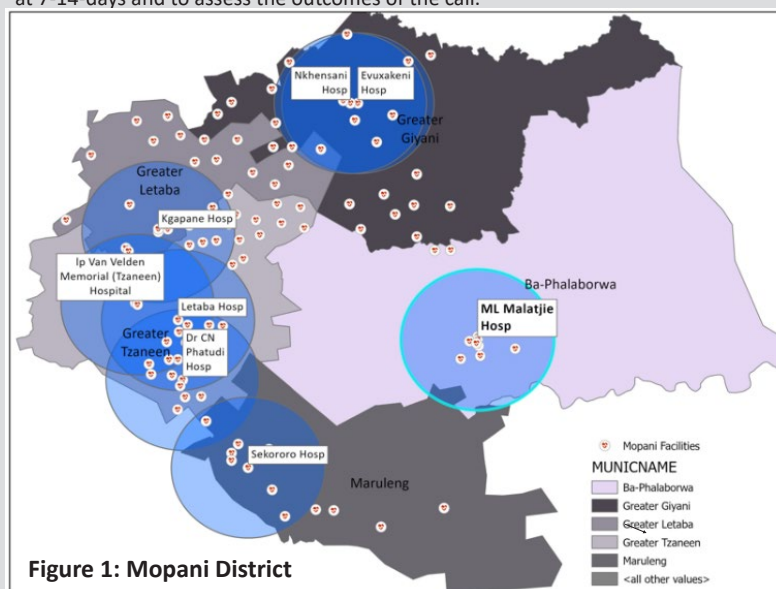


Figure 1: Mopani District

## Study location:

- We collected data for this study at Maphutha L Malatjie Hospital (MLMH), Mopani District
- MLMH is the only hospital located in the sub-district of Ba-Phalaborwa
- 79% of the sub-district's deliveries occur at this hospital

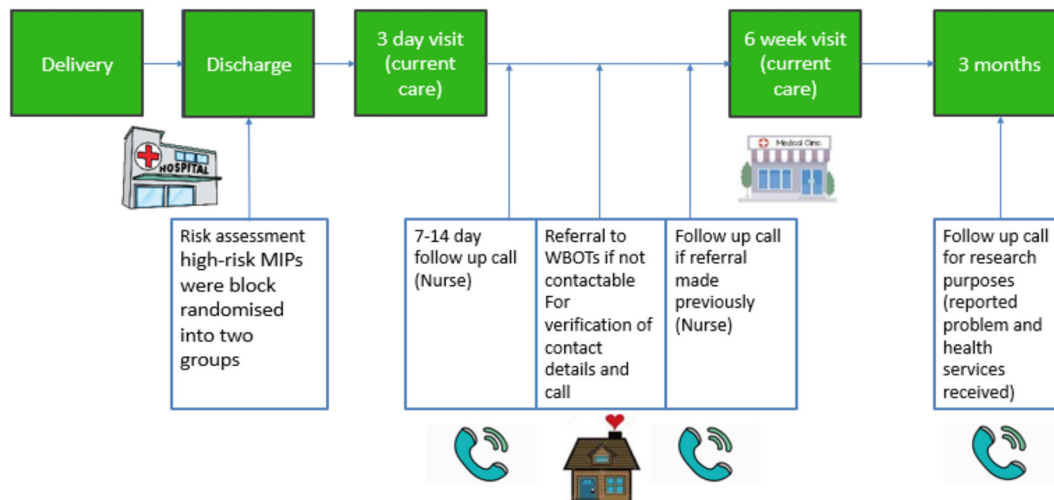
## What was our approach?

- We collected data from mothers who had recently delivered and were admitted in the hospital during the study period August 2020 to January 2021 (see Figure 2).
- The following data collection tools were created for this purpose: a risk assessment tool, 7-to-14-day check tool, a follow up tool, 3 months follow up tool and a file review.
- Following delivery and at discharge all mothers were invited to participate and assessed for risk using the risk assessment tool. Following this they were classified into high or low risk groups.
- Randomised mothers in the high-risk group received the 7-14-day call from the research nurse and mother-infant pairs (MIPs) with problems identified during this call were referred to the appropriate level of care.
- All MIPs with postnatal problems identified during the 7-14-day call were followed up a week later.
- MIPs attended their 6-week postnatal check-up (as per standard care guidelines).
- At 3 months, a telephonic follow up was conducted by the research nurse with all study participants (high risk and low risk) enrolled at the beginning of the study.
- A file review was then conducted for selected MIPs.

# Improving Postnatal Care For High-Risk Mother Infant Pairs at MLM Hospital, Ba-Phalaborwa

Prepared by: Chipo Mutyambizi, Jackie Dunlop, Rendani Ndou, Kate Rees

Figure 2: Intervention timeline



## What did we find?

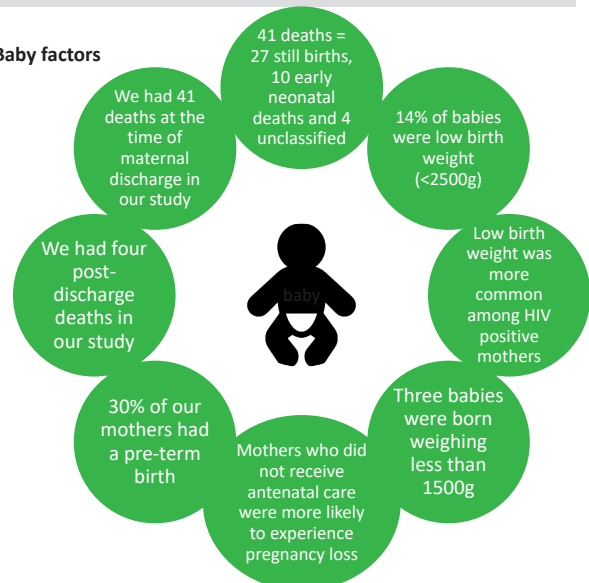
### 1 Study description

- 882 MIPs were recruited into the study
- 854 MIPs were classified as high risk
- The 7-to-14-day call was conducted for 417 (49%) high risk mothers
- 50 (12%) referrals were made following the call
- Follow up calls on those referred were conducted for 46 mothers (with 4 mothers being unavailable)
- 686 (78%) of all mothers enrolled received a 3-month follow up call (tried to contact all mothers, these were contactable)
- Of these, 30 mothers reported accessing other health services
- Amongst the mothers who received a referral during the 7-to-14-day call or mothers who reported accessing other health services during the 3 months follow up, a file review was conducted for 54 mothers

### 2 Mother characteristics



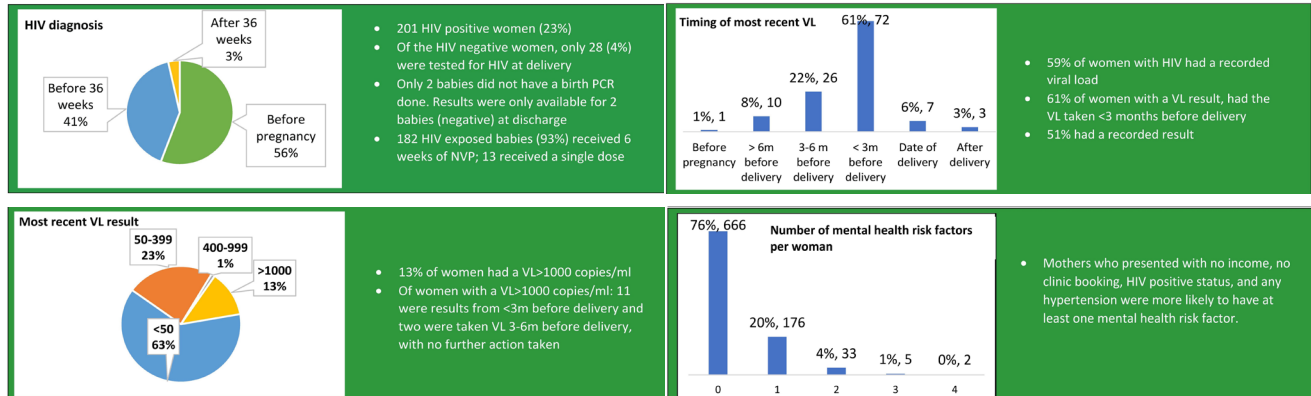
### 3 Baby factors



# Improving Postnatal Care For High-Risk Mother Infant Pairs at MLM Hospital, Ba-Phalaborwa

Prepared by: Chipo Mutyambizi, Jackie Dunlop, Rendani Ndou, Kate Rees

## 4 HIV and Mental health



## 5 3-6-day clinic visit

- Baby checks during the visit were well completed, although 10% of babies were not weighed
- Mothers were only asked about their mood in 5% of the cases and 18% of those with a c-section reported their wound was not checked

## 6 7-14-day call – problems identified, and referral made

- 416 (49%) mothers received the 7-14-day call
- Over 90% felt that the call was helpful
- The following problems were identified during the call:

### Mother problems

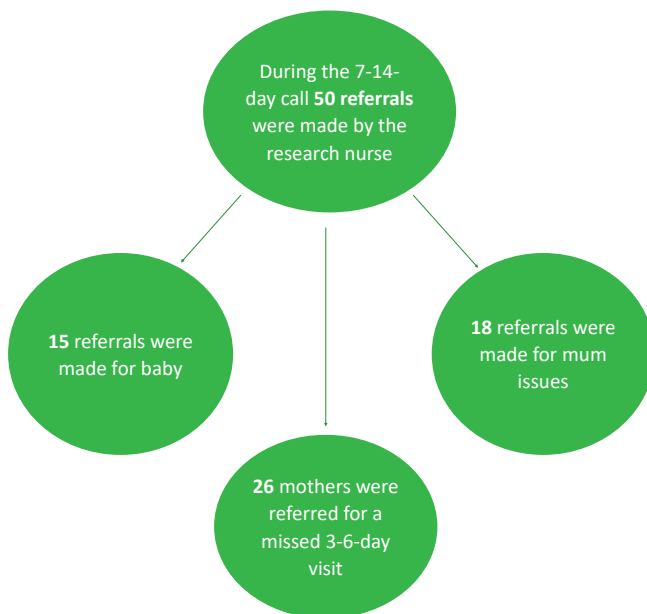
- 26 (6%) mothers did not attend their 3-6-day clinic visit
- 5 mothers had breastfeeding problems
- 4 mothers had abdomen or bowel problems
- 1 mother had a perineal problem
- 3 mothers had mental health problems
- 5 mothers had breastfeeding problems
- 6 mothers had c-section-related problems

### Baby problems

- 2 babies were not feeding well
- 1 baby had convulsions
- 4 babies were breathing fast
- 1 Baby was not moving spontaneously
- 5 babies had yellow palms and soles
- 2 babies had puss and redness around cord

# Improving Postnatal Care For High-Risk Mother Infant Pairs at MLM Hospital, Ba-Phalaborwa

Prepared by: Chipo Mutyambizi, Jackie Dunlop, Rendani Ndou, Kate Rees



## 7 So what was the impact of the 7-14-day call?

- The 7-14-day call did not influence access to additional services by mothers, however mothers who received the call expressed gratitude for being checked up on by the nurse
- Mothers who presented with hypertension, mental health risk, PV bleeding during pregnancy and problem in labor were more likely to access other health care services
- Three out of the four post-discharge deaths occurred before the 7-14-day call. One occurred afterwards with the call not identifying risk in the baby

## Conclusions

- Many more MIPs were classified as high risk than anticipated. This was mostly due to mothers experiencing social factors which could affect their health. Important risk factors included low rates of secondary school completion and employment, important comorbid conditions like HIV and hypertension, and high rates of preterm births.
- HIV testing at delivery and adherence to viral load guidelines were sub-optimal. The majority of HIV negative mothers were not tested at delivery. Many mothers living with HIV had no viral load results available. We also found viral suppression rates were poorer in women initiating ART during pregnancy. Infant HIV testing was high, although as expected, very few results were available prior to discharge.
- Our study found low levels of postnatal depression, likely due to a reporting bias. Having no income, no antenatal care, having HIV and any hypertensive disorder was associated with the presence of a mental health risk factor. Mental health was not checked at the 3-6-day visit and is a neglected part of postnatal care.
- Further enquiry is needed to understand the high number of pregnancy losses/still births. Mothers who did not receive antenatal care were more likely to experience pregnancy loss.
- Although we found the 7-14-day call not to influence access to additional health services, the study does show that hypertension, mental health risk, PV bleeding during pregnancy and problem during labour, which were common in this population of women, were linked with additional postnatal health care visits. In addition, women who received the call expressed that they found it helpful. While the majority were simply happy to receive the call and check-in, some women expressed they were happy with the call because baby or mother issues were resolved. Therefore, there is a need for additional care to be provided to high-risk mothers and babies postnatally.

**Funding** - This study has been funded by the South African Medical Research Council, linked to the Mphatlalatsane Project.

Find out more at:

<https://www.frontiersin.org/articles/10.3389/fgwh.2022.876263/full>

<https://www.frontiersin.org/articles/10.3389/fgwh.2022.1024936/full>



## 2.4

**Optimising HIV testing in children (5-14 years) in South Africa: introducing a screening tool with intensive counsellor training.**



# Optimising HIV testing in children (5-14 years) in South Africa: introducing a screening tool with intensive counsellor training

Policy Brief Prepared by – Jackie Dunlop, Melanie Bisnauth, Ndinda Makina

## Key messages

- South Africa has over 100,000 children living with HIV (CLHIV) that are not on treatment, who have a high risk of becoming ill or dying of HIV-related complications, the majority of whom are 5-14 years old (estimated 80%).
- Under the current conditions, only 10% of these children will be tested and linked to treatment each year.
- Screening tools assist with identifying children at risk of being HIV-infected, allowing testing resources to be used where they are needed. The implementation of a validated screening tool found three times the number of CLHIV (5-14 years), for the same number tested.
- A validated screening tool would be operationally simple to implement.
- In addition to the screening tool, inclusion of intensive training for counsellors on counselling and testing children for HIV, would provide the greatest increase in the number of CLHIV identified and would most rapidly address the testing gap.

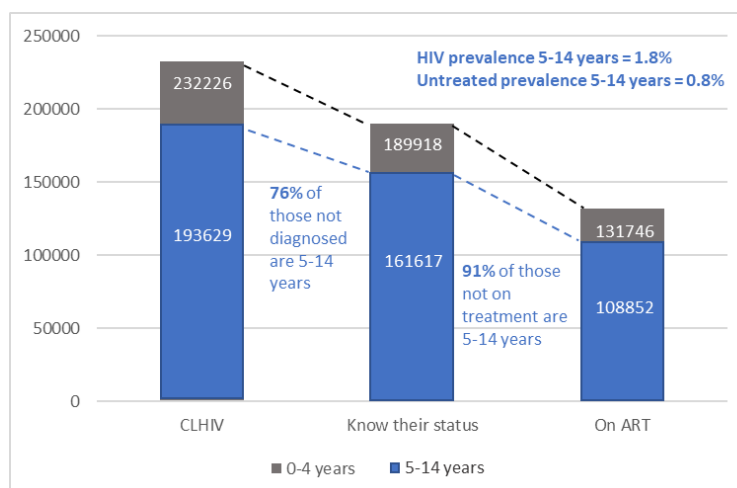


Figure 1: HIV Cascade for children under 15 years in South Africa - Sept 2022; Source: HIVData/Naomi Database

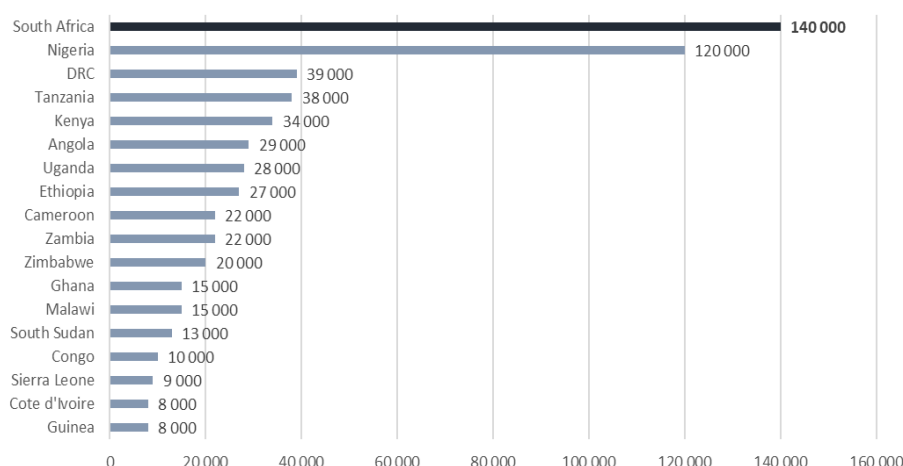


# Optimising HIV testing in children (5-14 years) in South Africa: introducing a screening tool with intensive counsellor training

Policy Brief Prepared by – Jackie Dunlop, Melanie Bisnauth, Ndinda Makina

## Problem Statement

South Africa has between 100,000 and 140,000 CLHIV not receiving treatment, estimated to be the largest number in the world (Figures 1 and 2) [1]. Eighty percent (80%) of these children are 5-14 years old [1-3].



**Figure 2: Children living with HIV (CLHIV) not receiving HIV treatment by country in Africa; Source: PEPFAR- UNAIDS 2022, estimates for 2021**

Historically, prevention of mother-to-child transmission programmes were less effective than they are today. More infants were perinatally infected, and fewer were diagnosed with HIV in infancy (Figure 3) [4-5]. Therefore, today, many older CLHIV have missed HIV testing compared with younger children [4-8].

Untreated children with HIV have a higher risk of illness and death [6-7].

This has a significant impact on the:

- **Health system:** places an increased burden on the health system, such as additional primary healthcare facility visits and hospital admissions;
- **Economy:** affects the economic viability of caregivers who must miss work and incur additional costs while tending to sick children; and
- **Society:** impacts on families who experience stress, bereavement and grief [4,6-7].

South Africa has an untreated HIV prevalence in 5-14 years old of 0.8% (Figure 1) [1-3]. This makes finding children through routine HIV testing (provider-initiated testing and counselling (PITC)) at health facilities more difficult, compared to other populations, such as adults, with a higher HIV prevalence [1, 6, 8-9]. PITC is further hindered by low counsellor proficiency and confidence in testing children [8-9]. A standardised method of focusing testing on those at increased risk is needed [8-9].

# Optimising HIV testing in children (5-14 years) in South Africa: introducing a screening tool with intensive counsellor training

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## Policy Options

The objective of this policy brief is to recommend a policy that will be the most effective and feasible in identifying untreated children living with HIV between the ages of 5-14 years.

The following are the three policy options being evaluated to help find the untreated children (5-14 years) living with HIV (Table 1).

Table 1: Cost-Effectiveness and Feasibility Analysis

	PITC (status quo)	Screening Tool (ST)	Counsellor Intensive Training (CIT)	Screening and training combined (STC)
Number HIV+ children found	2,320	6,496 <sup>a</sup>	4,640 <sup>b</sup>	12,992
Number of HIV+ children missed (at facility)	26,680	18,729	24,360	12,233
Number of HIV tests done	464,000	464,000	928,000	928,000
Number of positives per 1,000 tests <sup>c</sup>	5	14	5	14
Estimated time taken to find all missing children with HIV routinely attending health facilities (years)	12.5 years	4.5 years	6.25 years	2.25 years
Cost (Rands) to test one child	R 197.42	R 210.58	R 220.99	R 290.41
Cost (Rands) to find one HIV positive child	R 39,483.24	R 15,041.55	R 44,197.44	R 20,743.22
Total cost (Rands) of the intervention	R 91,601,116.01	R 97,709,924.61	R 205,076,143.68	R 269,495,924.61
ICER (difference in cost/difference in HIV+ cases found)		R 1,462.84	R 48,911.65	R 16,669.30
Political Feasibility <sup>d,e</sup>		High	Somewhat	Somewhat
Operational Feasibility		Somewhat	Low	Somewhat

- a. ST: A lower positivity yield would still result in an decreased number of HIV-positive children found (a positivity yield of 1% would find 4,640 children).
- b. CIT: If CIT is only 50% effective (only increased the number tested by 50%), then 3,480 children with HIV would be found, and the cost would increase by R14 772.49 (total cost R 58 929.93)
- c. The total estimated number of undiagnosed HIV positive children attending health facilities is based on estimated untreated HIV prevalence and varies across the policy options as positivity yields differ.
- d. There is high political feasibility as the paediatric HIV treatment gap remains a concern nationally and globally, as highlighted by the UNICEF Global Alliance.
- e. South Africa's National Department of Health has instituted the Paediatric and Adolescent Matrix of Interventions to target gaps in the paediatric and adolescent HIV cascade, with which the screening tool and intensive training are well aligned.

# Optimising HIV testing in children (5-14 years) in South Africa: introducing a screening tool with intensive counsellor training

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## 1. Screening tool (ST)

In Sub-Saharan Africa, countries with similar HIV prevalence in this age group have used validated screening tools to help target HIV testing at high-risk children [10-14]. This option has not yet been explored widely in South Africa. A screening tool allows counsellors to better focus testing on children with a higher risk of being HIV infected. This is done through implementation of a brief questionnaire prior to undergoing HIV testing and counselling, to ascertain the need for the child to be tested at the healthcare facility [4, 8, 10-14].

A validated tool (95% sensitivity) exists for use in South Africa, however has not yet been implemented (Figure 4). In a study setting in Johannesburg, this tool increased the positivity yield of testing children 5-14 years old from 0.4 % (PITC) to 1.4 % [8]. If implemented nationally by Department of Health (DoH) counsellors across *all* primary healthcare facilities, the cost will be an estimated additional 6% of the PITC programme (R97 million compared with R91 million), **however the number of children found would nearly triple (from 2,320 to 6,496) for the same number of tests done** (Table 1).

GAUTENG PROVINCE REPUBLIC OF SOUTH AFRICA		HIV risk screening tool For children 5-14 years	
For screening children under 5 years – please use IMCI algorithm “Check all children for HIV infection”			
Ask questions in a private space			
Step 1:			
Ask:	Is the child known to be living with HIV?		
	Yes	Stop screening and check child is on ART	
	No	Continue with step 2	
Step 2:			
Ask:	Is the mother of the child known to be living with HIV?		
	Yes	Conduct HIV testing and counselling for the child	
	No (Mother tested HIV negative in the last 12 months)	No HIV testing recommended for the child	
Step 3:			
Test the mother:	Unknown (No HIV test done on mother in the last 12 months)	Conduct HIV testing and counselling for the mother	
Step 4:			
Test the child:	If the mother tests positive or if the mother refuses testing or is unavailable for testing	Conduct HIV testing and counselling for the child	
	If the mother tests negative	No test recommended for the child	
Step 5:			
Document the screen or test result in the child's clinic file			

Figure 3: Optimised HIV risk screening tool



# Optimising HIV testing in children (5-14 years) in South Africa: introducing a screening tool with intensive counsellor training

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## 2. Intensive training for counsellors (CIT)

A 5-day training course on how to counsel and test children for HIV addresses low DoH counsellor proficiency and confidence to test children and aims to increase the number of children that are tested [4, 8-9]. A certified training course will equip counsellors to better obtain consent, provide testing and age-appropriately counsel children and caregivers on HIV testing and would double the number of children tested at healthcare facilities by existing counsellors [4, 8-9]. Implementing this option, would lead to double the number of children found (approximately 4,640), and would be 2.25 times more costly to implement compared with PITC (approximately R107 million more than ST) (Table 1).



Figure 4: An example of existing training material

## 3. Combined: Screening tool with Intensive training for counsellors (STC)

Combining ST and CIT ensures that both root causes are addressed and finds almost six times more CLHIV compared with PITC, twice more than the ST alone. STC costs 1.3 times more than intensive training alone (a cost difference of R64 million) and is almost three times more expensive than PITC (Table 1) [8-9]. Implementing this option would require an additional investment in paediatric HIV testing of R178 million compared with status quo (PITC), however would miss the fewest undiagnosed CLHIV at the health facility (12,233 CLHIV) (Table 1).

# Optimising HIV testing in children (5-14 years) in South Africa: introducing a screening tool with intensive counsellor training

*Policy Brief Prepared by – Jackie Dunlop, Melanie Bisnauth, Ndinda Makina*

## Recommendations and next steps

Current HIV testing practices at primary healthcare facilities in South Africa result in many missed opportunities to identify children living with HIV not in care.

This policy brief recommends national implementation of a validated screening tool to more rapidly close the testing gap in children 5-14 years. The addition of intensive counsellor training on child HIV counselling and testing, to increase the number of children being tested, would speed up the rate at which CLHIV are found. However, training all counsellors would be more challenging and costly to implement. Therefore, implementation of the screening tool, with or without intensive counsellor training is recommended.

The following steps are recommended to ensure effective implementation:

1. Develop job aid and tool kit for implementation of the screening tool.
2. Implementation of the tool should be done in a small subset of facilities prior to national rollout of the training.
3. Develop or adapt training programme for counsellors, and collaboratively create training plans with relevant stakeholders.
4. Print toolkit.
5. Dissemination of the training and tools using trainers allocated to districts.

Find out more at:

[https://journals.lww.com/pidj/fulltext/2023/09000/a\\_single\\_question\\_on\\_maternal\\_hiv\\_status\\_can.7.aspx](https://journals.lww.com/pidj/fulltext/2023/09000/a_single_question_on_maternal_hiv_status_can.7.aspx)



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### **3.1**

**It doesn't stop here:  
Supporting PLHIV  
to start ART after  
discharge from  
hospitals.**

# It doesn't stop here: Supporting PLHIV to start ART after discharge from hospitals

Success Story by Natasha Davies, Mthobisi Mchunu, Mfihlo Malungane, Mfihlo Malungane, Kate Rees and Melanie Bisnauth.

## Introduction

### Identifying PLHIV

In Johannesburg, many people living with HIV are still identified for the first time during an admission to hospital because of advanced HIV and related illnesses such as tuberculosis or meningitis. There are also many patients who are aware of their HIV status before admission but have never been on treatment. Up to **4 out of 10** of these individuals, although they find out they have HIV during their hospital stay, are too unwell, or not psychologically ready, to start antiretroviral therapy (ART) whilst they are in hospital.

*"I call the clients and reinforce the message that if they need the support, they are welcome to call anytime, and we will refer them where they will get help. I tell them about my own experience of being HIV positive, reassuring them that it is not the end, you aren't going to die. It's not HIV that kills, it's the ignorance behind it...get the treatment and live longer- acceptance is important. As Anova we are here to support our clients and help the people. Our clients' express happiness when I am proactive and call them to check in and see how they are doing"*



-Mthobisi Mchunu  
Shared with permission



This has critical implications for successful quality same-day initiation: not just starting a client on treatment, but ensuring they remain on treatment when leaving the hospital.

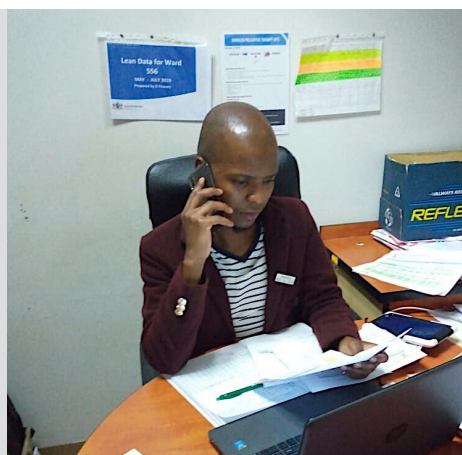


## Stressing the importance of linking our patients to care

Unfortunately, after discharge, individuals often struggle to know how to link to care and treatment at their local healthcare facility. **It is easy for them to get lost in the healthcare system**, creating a risk that they become more ill, or even die of HIV-related complications before starting life-saving treatment. In Johannesburg, despite increasing access to ART, the number of people becoming ill with, or dying from, HIV-related illnesses has changed very little over the last 5 years. People are still dying unnecessarily from HIV-related causes.

### Why did we want to look at this?

Our team wanted to positively impact through supporting people who were identified as needing ART during a hospital stay to link to much needed ART as soon as possible after discharge.



# It doesn't stop here: Supporting PLHIV to start ART after discharge from hospitals

Success Story by Natasha Davies, Mthobisi Mchunu, Mfihlo Malungane, Mfihlo Malungane, Kate Rees and Melanie Bisnauth.

## What was our approach?

The team has introduced a model (Figure 1) at several hospitals in Johannesburg. This result has been very positive. Before introducing weekly follow up by a named linkage officer, only 40-50%, of all clients identified in the hospitals as needing ART were confirmed to have accessed life-saving ART.



## What did we find out?



Currently, the hospitals across Johannesburg report that 8 of 10 individuals have started their ART within 28 days after discharge from hospital. In the **two largest hospitals**, more than 9 out of 10 clients are confirmed on ART at 28 days.

This simple, easy to implement process, is saving lives by ensuring that people are not lost from the system and are given the support they need after finding out they have HIV during a hospital admission.

The following (Figure 2) demonstrates the positive impact of this model on linkage to care.

Figure 2. Before and after SDI and 28-day linkage approach introduced

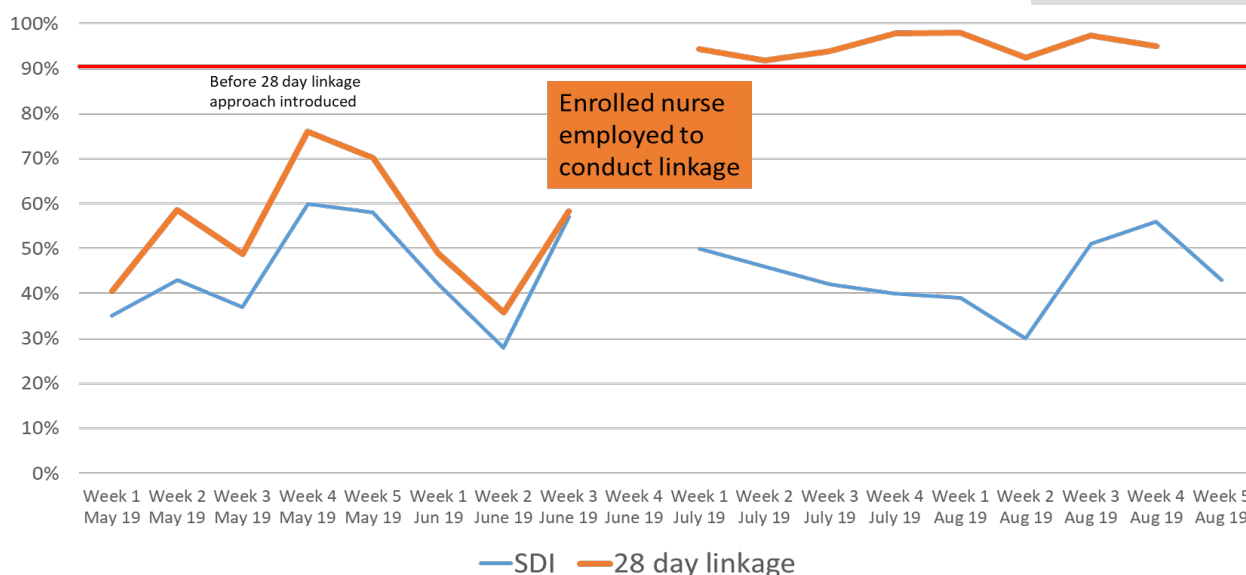


Figure 2. Before and after Same Day Initiation (SDI) and 28-day linkage approach introduced

# It doesn't stop here: Supporting PLHIV to start ART after discharge from hospitals

Success Story by Natasha Davies, Mthobisi Mchunu, Mfihlo Malungane, Mfihlo Malungane, Kate Rees and Melanie Bisnauth.

## The Model Implemented



### Benefiting from this service

After identifying this challenge, we introduced the following process for every person who was identified as **needing ART** but who could not be started on treatment during their hospital admission:



**Figure 1.** Process for individuals identified as needing ART but could not initiate during their hospital admission

1. Linkage officer visits the patient and introduces him/herself to the person before they are discharged home



2. Linkage officer spends some time with the person, explaining the importance of ART for their health and securing permission from the person to follow them up by telephone after they go home

3. Each person is entered into a special register which the linkage officer uses to call the patient at fixed times after discharge



A

The linkage officer calls the person on days **7, 14, 21** and **28** after discharge



B

The linkage officer checks the person is staying well and is managing after discharge



C

The linkage officer asks the person if they have started their ART yet

i. If the person has started, they are congratulated and encouraged to continue

ii. If the person has not started, the reason is explored, and support given as necessary.

Support may include:



1. Making an appointment for the person with a specific member of staff at their local community clinic

2. Making an appointment with a doctor back at the hospital if they have been told they are still not well enough to start ART (suggesting undue delays at the local facility)



The person is followed up weekly until **28 days** (by which time most individuals have initiated ART)

E

If the person is still not on treatment by **28 days**, then the linkage officer hands the person over to the nearest community team to facilitate a home visit to check up on the client and continue to provide support to start treatment



3. Providing pre-treatment counselling about the benefits of ART if they still do not feel psychologically ready to commit to treatment

# It doesn't stop here: Supporting PLHIV to start ART after discharge from hospitals

Success Story by Natasha Davies, Mthobisi Mchunu, Mfihlo Malungane, Mfihlo Malungane, Kate Rees and Melanie Bisnauth.

## Real individual success stories

*\*individuals names have been changed*

Sipho, age 40, was admitted to hospital but declined to start ART treatment. He was overwhelmed by being diagnosed with diabetes and hypertension and as well as HIV, all at the same time. The stigma that came with HIV made it more difficult for him to accept the diagnosis.

"I followed up on him to come back to be initiated after 3 weeks and reinforced this over the phone.

He was thankful for the encouragement and support and now is happy to be on ART."

Mpho, age 28, was admitted to the hospital and he also declined treatment initially.

"He was experiencing pain from lymphoma. Upon follow-up he decided to take treatment and went to the local clinic to be initiated. He came back to me to tell me that he slept better at night and has been taking his treatment nightly."

Tumi, age 43, felt unable to start treatment because she was in shock after being diagnosed HIV positive.

"She came 2 weeks later, after following up with her and explaining the importance of ART. After follow-up, she even promised to quit smoking to better improve her health holistically. Furthermore, when it came to disclosure to her family, she received support from the counselling and nurses like myself and she was quite happy to do so."

## 28 Day Linkage & Success Stories from Clients

Lucky, was admitted to the hospital and had Cryptococcal meningitis, declined ART because of the pain and suffering he was going through due to his illness. After he was discharged, a linkage officer called him weekly. "We had already established a relationship to continue with communication after discharge. After 4 weeks, Lucky came back to be initiated on ART." Thankfully to the encouragement of weekly calls from our linkage officer.

Dzunisani, age 53, was admitted to hospital with Drug Induced Liver Injury due to the TB treatment she had been taking. "Her TB treatment was stopped. She was discharged and completely refused to take ARVs due to trauma experienced on TB treatment.

I spoke to her sister most of the time as Dzunisani had told me she disclosed to her, explaining the importance of the ARVs that it will boost her immune system. Her sister helped her and 4 weeks later she came to the site with his sister and was initiated by the NIMART nurse on the ARVs.

Witness, aged 43, was admitted and diagnosed with HIV and TB. His wife tested HIV negative. He was discharged after 14 days but declined to start HIV treatment.

"I called him every week to check in with him to see if he wanted to initiate ART. On the 3rd week after discharge, he came back to the ARV site accompanied by his wife and was initiated on ARVs. He was initiated on 21 days follow up."

## So, what now?

These are some of the many success stories. Just like Sipho and Lucky, many people experience individualized issues that we need to address and help support, recognizing that same day initiation for ART does not always occur. Delays are common because of newly diagnosed TB, cryptococcal meningitis, renal or liver impairment, or because the client is dealing with psychological and mental health issues during an acute illness. The client may not feel well enough to initiate ART at the same time. Thus, the 28-day follow-up plan was introduced to support the PEPFAR/USAID goal of the 2nd 90, ensuring that we are supporting those who now know their HIV status to initiate, and remain on, ART. The 28-day follow-up process has been introduced at 7 hospitals in the City of Johannesburg, South Africa. One challenge in the hospitals remains with the 2nd 90 target – that 90% of people with HIV infection receive sustained ART. This is difficult to achieve because initiation prior to discharge is often not possible due to complicated HIV requiring treatment and clinical resolution before ART can be safely initiated.



## **3.2**

**Baseline CD4 counts are important for client care & ART programmes, even in the era of UTT.**

# Baseline CD4 counts are important for client care & ART programmes even in the era of UTT

Authors: RR Lilian, K Rees, M Mabitsi, JA McIntyre, HE Struthers, RPH Peters  
Policy Brief Prepared by Melanie Bisnauth

## Introduction

Even though antiretroviral therapy (ART) is widely available in South Africa, clients still get sick and die from HIV-related conditions. According to the World Health Organization, there has been no improvement in the number of deaths due to AIDS in South Africa between 2013 and 2017 [1], highlighting the need for interventions to address morbidity and mortality.

### Did you know?

Clients who present late for HIV care with low baseline CD4 counts or advanced clinical disease are more likely to get sick or die [2-5] and it is therefore essential to prioritise these clients for targeted interventions to improve their outcomes.

## Why did we want to look at this?

This study described ART initiation and mortality over time, with a focus on clients presenting for care with low CD4 counts, to identify interventions to reduce HIV-associated morbidity and mortality.

## What was our approach?

- We analysed routine TIER.Net data from Johannesburg Regions C,D,E and G and Mopani District.
- TIER.Net records were included in the analysis for HIV-infected adults who were 15-80 years of age, were initiating ART for the first time between 2004 and 2017, and had a baseline CD4 count on record.
- We investigated trends in baseline CD4 count and mortality, and described the clients who initiated ART with low baseline CD4 counts (below 200 cells/mm<sup>3</sup>) in 2017.



## What did we find out?

203 131  
records from  
Johannesburg were  
analysed

101 814  
records from  
Mopani were  
analysed

Median baseline CD4  
count increased from  
2004 to 2017 in both  
districts –  
69 to 263 in  
Johannesburg and 101  
to 293 in Mopani

The increase is in line  
with national  
guidelines that have  
repeatedly raised the  
CD4 cut-off for ART  
initiation



# Baseline CD4 counts are important for client care & ART programmes even in the era of UTT

Authors: RR Lilian, K Rees, M Mabitsi, JA McIntyre, HE Struthers, RPH Peters  
Policy Brief Prepared by Melanie Bisnauth

However, a large number of clients initiating ART still have a CD4 count below 200 and this has not improved in recent years (Figure 1).

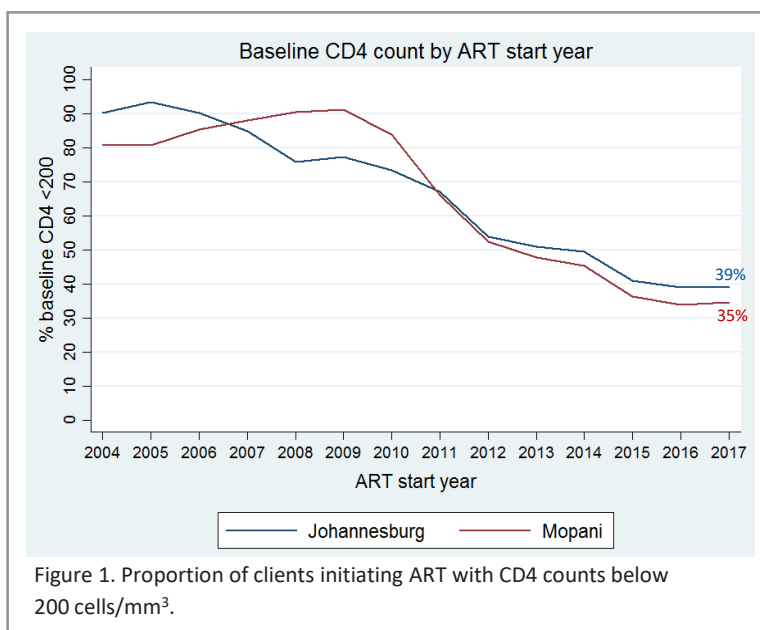
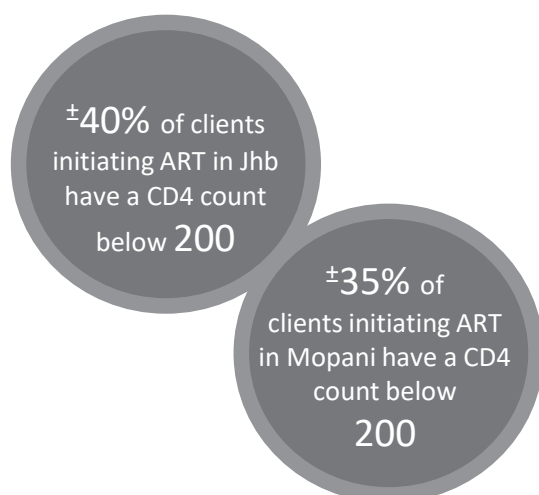
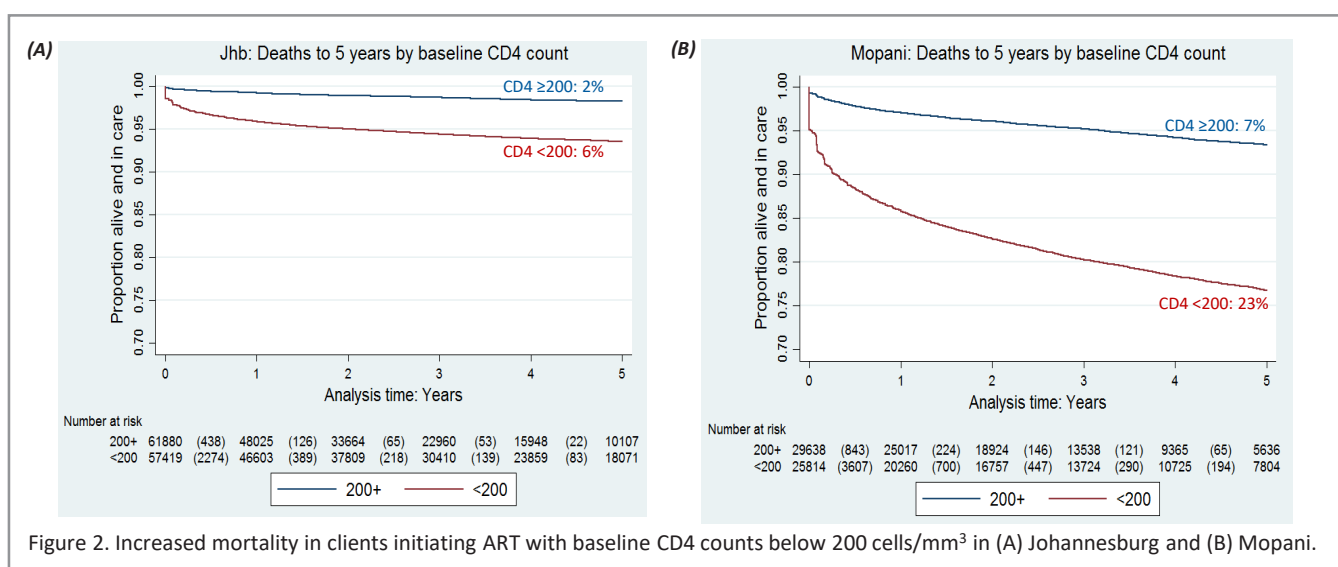


Figure 1. Proportion of clients initiating ART with CD4 counts below 200 cells/mm<sup>3</sup>.

Clients with low baseline CD4 counts have significantly increased mortality compared to clients who initiate ART with higher CD4 counts. In Johannesburg, 6% of clients with baseline CD4 counts below 200 died after 5 years, compared to 2% of clients with baseline CD4 counts greater than 200. In Mopani, 23% of clients with baseline CD4 counts below 200 died after 5 years, compared to 7% with CD4 counts above 200 (Figure 2).



# Baseline CD4 counts are important for client care & ART programmes even in the era of UTT

Authors: RR Lilian, K Rees, M Mabitsi, JA McIntyre, HE Struthers, RPH Peters  
Policy Brief Prepared by Melanie Bisnauth



Presentation  
with low CD4 count in  
2017 was associated with  
older age, male gender,  
hospitalisation and advanced  
clinical disease



## SO WHAT?

All clients with baseline CD4 counts below 200 should receive cotrimoxazole preventive therapy (CPT) to prevent bacterial infections, but this is not being implemented – in 2017, **only 23% of clients with baseline CD4 counts below 200 received CPT in Johannesburg and 26% in Mopani.**

## TAKE-HOME MESSAGES

Baseline CD4 counts are critical for patient care and ART programme monitoring.

### FOR PATIENT CARE

It is essential to focus on clients presenting with low CD4 counts to improve their outcomes.

1

Although median CD4 is rising over time, many clients still initiate ART with low CD4 counts.

2

Clients who initiate ART with low CD4 counts are more likely to have poor outcomes, including death.

3

Interventions like CPT can prevent the diseases that lead to death in these clients, but they are rarely prescribed.

### FOR ART PROGRAMMES

ART programmes should emphasise baseline CD4 as a monitoring tool.

1

Baseline CD4 counts should be requested for all clients.

2

Proportion of clients starting ART with CD4 counts below 200 should be monitored routinely.

3

Programmes should target people who are likely to initiate treatment with low CD4 counts in order to improve early engagement in care: men, older clients, those presenting to hospital and those with advanced disease.

# Baseline CD4 counts are important for client care & ART programmes even in the era of UTT

*Authors: RR Lilian, K Rees, M Mabitsi, JA McIntyre, HE Struthers, RPH Peters  
Policy Brief Prepared by Melanie Bisnauth*

## For further information, please refer to the source of publication below:

Lilian RR, Rees K, Mabitsi M, et al. Baseline CD4 and mortality trends in the South African human immunodeficiency virus programme: Analysis of routine data. *S Afr J HIV Med.* 2019;20(1), a963.  
<https://doi.org/10.4102/sajhivmed.v20i1.963>

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4. Johnson LF, Mossong J, Dorrington RE et al. Life expectancies of South African adults starting antiretroviral treatment: collaborative analysis of cohort studies. *PLoS Med* 2013; 10: e1001418.
5. Luma HN, Jua P, Donfack OT et al. Late presentation to HIV/AIDS care at the Douala general hospital, Cameroon: its associated factors, and consequences. *BMC Infect Dis* 2018; 18: 298.

Find out more at:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6676982/>



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### 3.3

**CD4 monitoring needs to be improved to enhance quality of care in the ART programme.**

# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

Authors: RR Lilian, N Davies, L Gilbert, K Rees  
Policy Brief Prepared by Melanie Bisnauth.

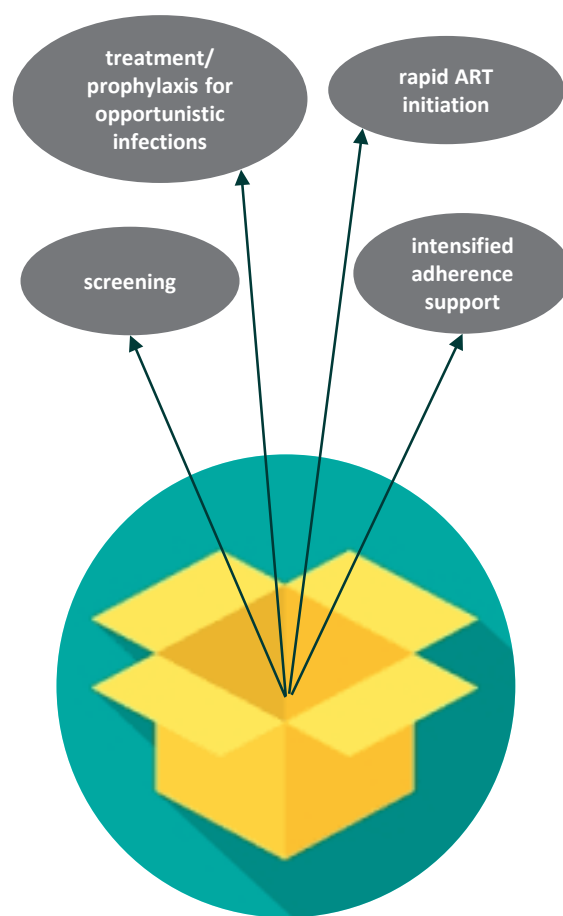
## Background

Adult patients are considered **to have advanced HIV disease** if their CD4 count is below 200 cells/mm<sup>3</sup>. These patients are at risk of opportunistic infections and are more likely to die.

**Advanced clinical care (ACC)** should be provided to patients with advanced HIV disease. According to the [World Health Organization](#), ACC is a package of screening, treatment and/or prophylaxis for opportunistic infections, rapid initiation of antiretroviral therapy (ART) and intensified adherence support (1). This encompasses screening for cryptococcal antigen (CrAg) in patients with CD4 counts below 100 to enable early diagnosis and treatment of cryptococcal meningitis, as well as diagnosis of tuberculosis (TB) in symptomatic patients. Interventions to protect against infections include cotrimoxazole prophylaxis (CPT) for patients with CD4 below 200 and TB preventive therapy (TPT).

**CD4 testing** to identify patients with advanced HIV disease should be performed for everyone before starting ART (baseline CD4 testing) and 12 months after ART initiation. CD4 testing should also be repeated 6-monthly in patients with virological failure, as these patients may require ACC interventions if their CD4 count falls below 200 cells/mm<sup>3</sup> while receiving ART.

Some patients who are virally suppressed on ART may still have low CD4 counts. These patients are known as **immunological non-responders** because ART does not improve their immune function even though it does suppress the HIV virus. It is important to repeat CD4 testing after ART initiation so that these patients can be identified to receive appropriate ACC care and clinical management.



**Advanced Clinical Care**

## The Objective: Why did we want to look at this?

CD4 counts are a critical marker of immune function and an important tool to guide clinical care.

This analysis describes CD4 testing at baseline and subsequent to ART initiation to identify possible areas for intervention to improve implementation of CD4 monitoring and subsequent patient management. It is essential that CD4 results are reviewed, and appropriate action taken to improve patient outcomes.

# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

Authors: RR Lilian, N Davies, L Gilbert, K Rees  
Policy Brief Prepared by Melanie Bisnauth.

## What was our approach?

We analyzed routine TIER.Net data exported in February 2020 for the following 5 districts: Johannesburg, Sedibeng, Capricorn, Mopani and Cape Town. The Cape Town dataset only included 15% of facilities in the district, as the remaining facilities do not use TIER.Net.

TIER.Net records were included in the analysis for **HIV-infected adults** who were **15-80 years of age** and **who had initiated ART from 2004 onwards**. Records with data quality concerns were excluded from the analysis.

We investigated **trends in baseline CD4 counts** and described **CD4 testing subsequent to ART start**. Although CD4 monitoring guidelines have changed over time, we assessed current guidelines regarding CD4 testing after ART start. We also **described immunological non-responders, defined as patients who had been on ART for more than 4 years who had a suppressed viral load (VL) and a CD4 count  $\leq 350$ .**

## What did we find out?

### Baseline CD4 Testing

Baseline CD4 testing in patients newly starting ART has decreased markedly in recent years across all districts (Figure 1). This is likely due to the implementation of Universal Test and Treat from September 2016, which specifies that CD4 test results are no longer needed to assess ART eligibility. In 2019, one-third to two-thirds of patients did not have a baseline CD4 test – patients starting ART with CD4 counts below 200 who should have received ACC would therefore have been missed.

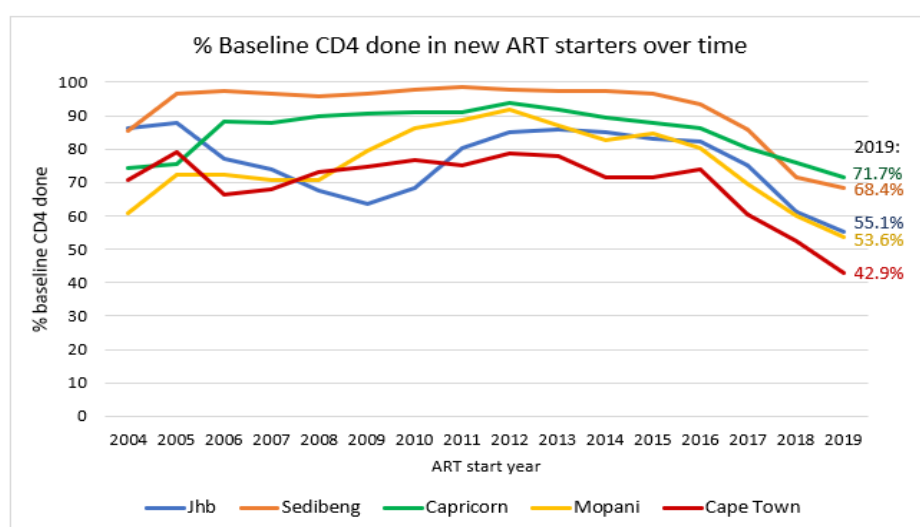


Figure 1: The proportion of new ART starters receiving baseline CD4 testing over time.

# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

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## What did we find out?

### Baseline CD4 Testing

In 2019, a large number of patients were still initiating ART with CD4 counts  $\leq 200$ , ranging from 1 502 patients in Cape Town to 15 950 patients in Johannesburg (Figure 2a). This represent 30%-40% of patients with a baseline CD4 count on record (Figure 2b). Around 60% of patients-initiated ART with CD4  $\leq 350$  in 2019, ranging from 58.4% in Sedibeng to 62.1% in Mopani. Although this is an improvement compared to earlier years, this represents a large proportion of patients who are still starting ART with low CD4 counts i.e. people infected with HIV are not initiating treatment early enough, before the development of advanced disease.

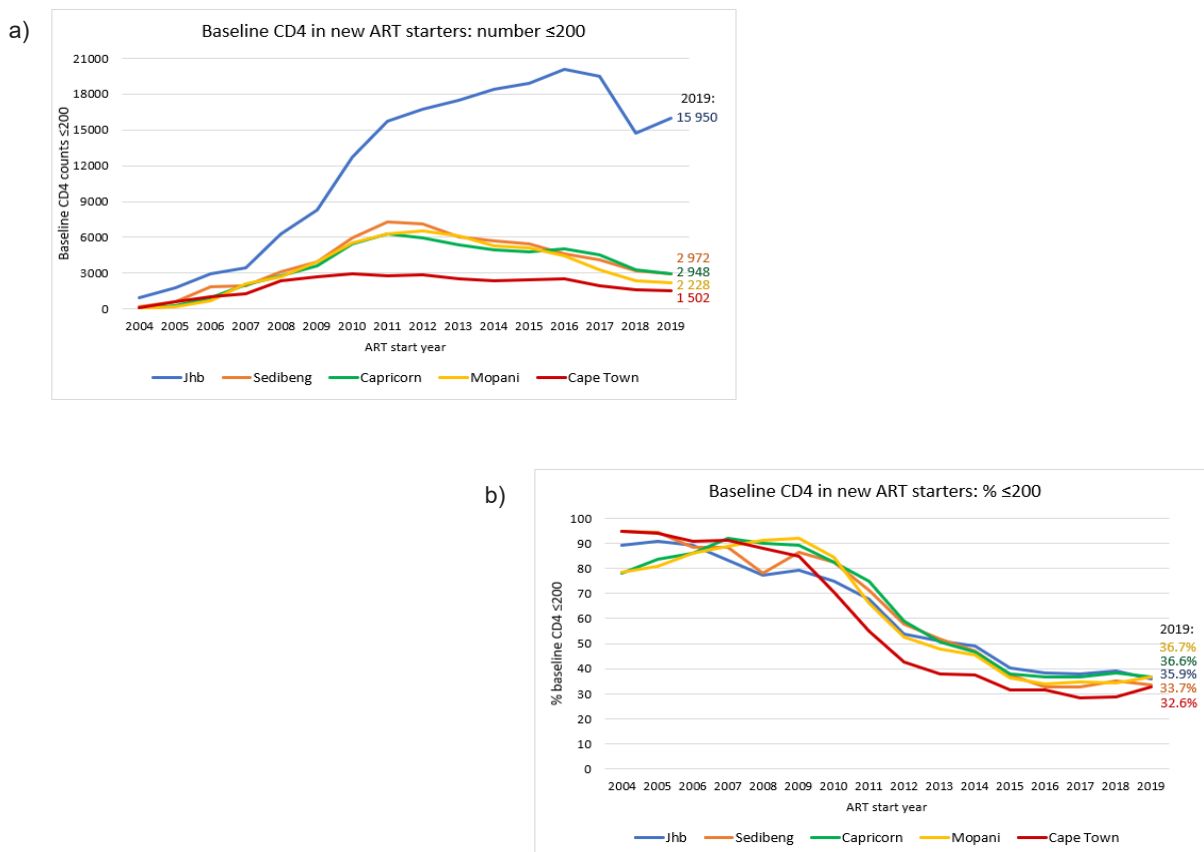


Figure 2. a) Absolute number and b) proportion of baseline CD4 counts in new ART starters with CD4  $\leq 200$  cells/mm<sup>3</sup>.



# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

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## What did we find out?

### Baseline CD4 Testing

CPT is very poorly implemented, with less than half of the patients with baseline CD4  $\leq 200$  receiving CPT across all districts in 2019 (Table 1).

Table 1. Implementation of guidelines and CD4 outcomes by district.

	Johannesburg	Sedibeng	Capricorn	Mopani	Cape Town subset (15% of facilities in the district)
Number of patients included in the analysis	760 103	173 538	173 807	193 740	138 933
<b>CPT at ART start</b>					
Proportion of new ART starters with baseline CD4 $\leq 200$ who received CPT in 2019	9.4%	27.6%	41.4%	26.1%	8.2%
<b>CD4 testing subsequent to ART start</b>					
Proportion of patients with a CD4 test subsequent to baseline on record	39.4%	49.8%	57.1%	34.2%	47.4%
Proportion of patients with a subsequent CD4 test on record whose count was $\leq 200$	13.6%	13.5%	15.2%	18.1%	14.4%
Proportion of patients with a subsequent CD4 test on record whose count was $\leq 350$	35.5%	33.2%	34.5%	40.6%	35.4%
Guideline regarding 12-month retesting: Proportion of patients on ART for 12-18 months with a subsequent CD4 test on record	21.3%	23.7%	37.9%	8.0%	10.2%
Guideline regarding testing after unsuppressed VL: Proportion of non-suppressed patients on ART for $>12$ months with a CD4 test on record any time subsequent to baseline	50.3%	63.3%	70.7%	49.8%	70.1%
<b>Immunological non-responders (suppressed VL but CD4 <math>\leq 350</math>)</b>					
Proportion of immunological non-responders out of those with a suppressed VL	20.9%	21.1%	16.4%	26.7%	29.1%
Proportion of immunological non-responders whose CD4 count was $\leq 200$	28.6%	32.7%	26.4%	40.9%	39.0%

# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

Authors: RR Lilian, N Davies, L Gilbert, K Rees  
Policy Brief Prepared by Melanie Bisnauth.

## What did we find out?

### CD4 testing subsequent to ART start

Between 30%-60% of patients had a subsequent CD4 test on record (Table 1) i.e. 40%-70% of patients never had their CD4 repeated.

This means that patients who needed CPT or extra clinical management **would not have been identified**

Guidelines regarding CD4 testing are **poorly implemented**

### Guidelines regarding CD4 testing subsequent to ART start –

- Routine re-testing 12 months after ART start in all patients: This guideline was very poorly implemented, with less than 40% of patients who had been on ART for 12-18 months having a repeat CD4 test on record.
- CD4 testing in patients with unsuppressed VL: Only 50%-70% of patients with an unsuppressed VL had a repeat CD4 test. This is likely an overestimation, as it is not limited to CD4 tests performed *after* the unsuppressed VL. Patients who are not virally suppressed are more likely to have a low CD4 count and would therefore need ACC – these patients would be missed if their CD4 tests are not done.

Overall, 13%-20% of patients who had a CD4 test repeated after starting ART had a CD4 count  $\leq 200$  and 30%-40% had a CD4 count  $\leq 350$  (Table 1).

If we initiate 100 000 patients on ART in a year, & for every 100 patients who start ART 13-20 have a most recent CD4  $\leq 200$ , then **13 000-20 000 patients** would have a CD4  $\leq 200$  and require ACC

# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

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## What did we find out?

### CD4 testing subsequent to ART start

Characteristics of patients with low CD4 counts are presented in Figure 3. We need to target these patients, including males and older clients, so that appropriate clinical management and CD4 monitoring can be provided.

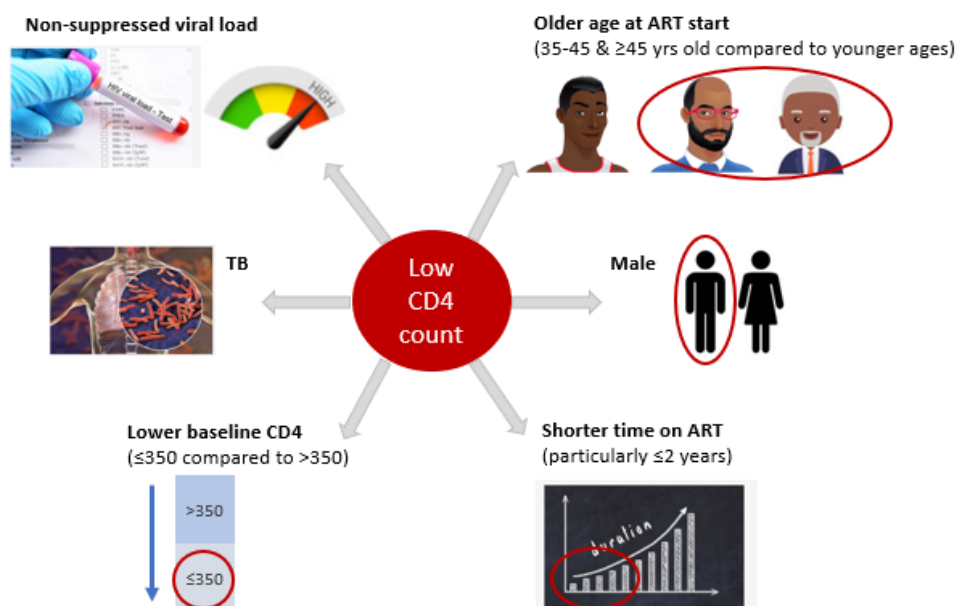


Figure 3. Characteristics of patients with low ( $\leq 200$  &  $\leq 350$ ) CD4 counts subsequent to starting ART.

### Immunological non-responders

Up to one-third of patients who were virally suppressed were immunological non-responders i.e. their CD4 counts remained  $\leq 350$  (Figure 4). Among these immunological non-responders, 25%-40% had a CD4 count  $\leq 200$  (Table 1). These patients were already well established on ART but still needed ACC interventions including CPT, continued CD4 monitoring and close clinical management.

Immunological non-response is more likely in patients starting ART with low CD4 counts. Since a noteworthy proportion of patients still start ART with low baseline CD4 (Figure 2), these patients are at risk of long-term immunological non-response and are therefore more likely to get sick and die. Immunological non-response is also more likely in patients on second-line ART, older patients, males and those with TB. These patients should be identified for CD4 monitoring and ACC interventions where needed.

# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

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## What did we find out?

### Immunological non-responders

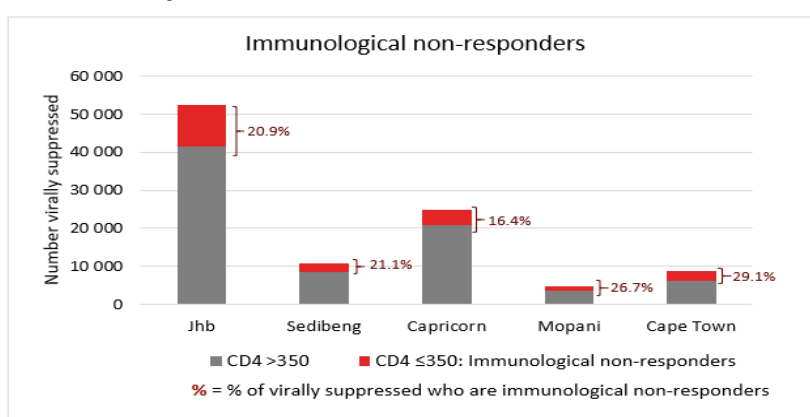


Figure 4. Proportion of immunological non-responders among virally suppressed patients on ART >4 years.

## So what?



It is concerning that guidelines regarding CD4 monitoring are being poorly implemented across all districts. This has multiple implications for patient care and outcomes (Table 2).

Table 2. Implications of poor implementation of guidelines.

Guideline	Implications of poor implementation
Baseline CD4 testing	If baseline CD4 testing is not done, patients with low CD4 counts who need CPT, CrAg testing, TPT and ACC are not identified.
Early ART initiation	Patients who do not start ART early enough have low CD4 counts at baseline. These patients are more likely to have continued low CD4 counts and to be immunological non-responders, increasing their risk of illness and death.
Repeat CD4 testing	If repeat CD4 testing is not done, patients with low CD4 counts who need ACC are missed, increasing the risk of poor outcomes.

# CD4 monitoring needs to be improved to enhance quality of care in the ART programme

*Authors: RR Lilian, N Davies, L Gilbert, K Rees  
Policy Brief Prepared by Melanie Bisnauth.*

## What Can We Do?

There are several areas for intervention that can support improvements in the quality of patient care:

1

Healthcare workers need to be educated regarding the importance of CD4 testing as a tool to guide clinical care. The importance of implementing guidelines for CD4 testing at baseline, routinely 12 months after ART initiation and when patients have an unsuppressed VL needs to be emphasized.

2

A package of ACC interventions for patients with advanced disease needs to be standardized and linked to regular measurements of CD4 counts. Patients with CD4  $\leq 200$  need to be enrolled into ACC to prevent morbidity and mortality. Ongoing file audits should be conducted to assess whether this is being implemented

3

Men are at higher risk of low CD4 counts and immunological non-response than women, emphasizing the need for male friendly and male focused comprehensive services.

4

South Africa's HIV population is aging, and older age is associated with poorer immunological response. There is a need to focus on elderly patients, including performing CD4 monitoring to identify those who need ACC.

5

TB is also associated with lower CD4 counts and poor immunological response. Efforts to identify and treat TB are essential.

6

We need to continue to engage with communities to emphasize the importance of starting ART early through increased uptake of different HIV testing modalities and improved linkage to care.

Find out more at:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6676982/>

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## **4.1**

**IPT decreases rates of new TB cases in Anova's Johannesburg APACE programme.**

# IPT decreases rates of new TB cases in Anova's Johannesburg APACE programme

Authors: Caroline Makura & Kate Rees  
Policy Brief Prepared by Melanie Bisnauth.

## Background

The South African Antiretroviral Treatment Guidelines 2013 state that all people living with HIV, in whom active TB has been reasonably excluded, should complete a course of IPT. Unfortunately, this is not fully adhered to partly due to implementation challenges, including clinician confidence in the safety of IPT and clinician forgetting to repeat IPT prescriptions. Additional data challenges also include stationery issues where proper recording of IPT use does not occur which makes showing the true impact of IPT interventions difficult.



## What was our approach?

Using HIV and TB TIER.Net data, the aim of this analysis was to determine the effect of IPT, on the risk of developing TB over 5 years of follow-up.



## What did we find out?

Table 1 shows that overall, patients with no IPT history reported up to 5 times more new TB cases compared to those put on IPT at ART initiation and patients put on IPT 1 month after ART initiation reported up to 4 times more new TB cases (risk reported over 5 years follow up from ART initiation).

**Table 1: TB onset risk by timing of IPT administration**

IPT at ART initiation	Developed TB after ART initiation		Adjusted Hazard Ratio * (95% CI)	P value
	No (N, %)	Yes (N,%)		
<b>Within 1 month ART initiation</b>	51,468 (100%)	212 (<1%)	1	
<b>1month after ART</b>	45,751 (97%)	1,480 (3%)	3.81 (3.19-4.56)	<0.001
<b>No IPT</b>	134,650 (93%)	9,670 (7%)	4.81 (4.06-5.71)	<0.001

\* Adjusted by gender, age at ART initiation, WHO clinical staging, baseline CD4 count and CPT administration

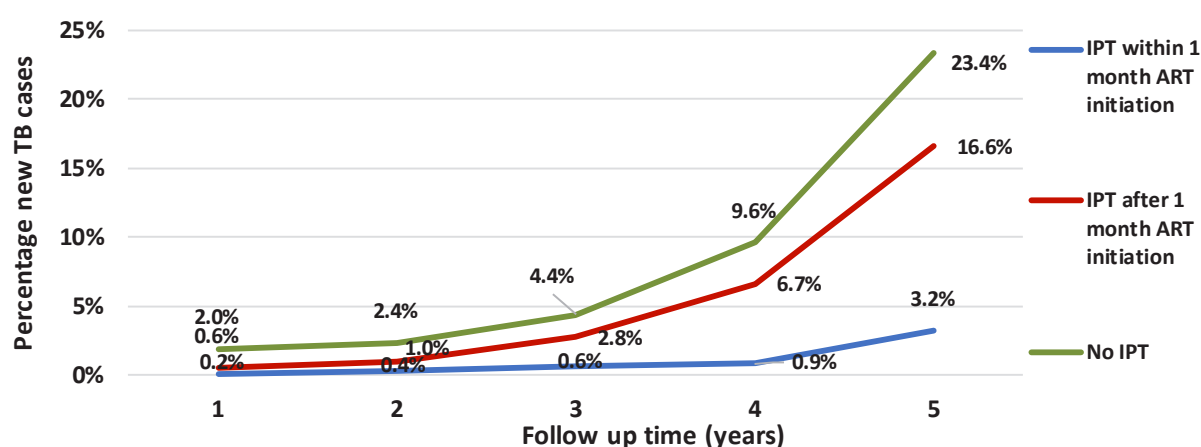


# IPT decreases rates of new TB cases in Anova's Johannesburg APACE programme

Authors: Caroline Makura & Kate Rees  
Policy Brief Prepared by Melanie Bisnauth.

**Figure 1** shows that those that were put on IPT at ART initiation developed fewer TB cases over 5 years after ART initiation followed by those put on IPT more than 1 month after ART initiation. Those with no IPT history developed the most TB cases. The risk of developing TB for those with no IPT history was greatest at 4 and 5 years after ART initiation with reported increases of 5% and 14% respectively.

**Figure 1: Rates of developing TB by IPT administration timing**



## What can we do?

- 1 To reduce the number of new TB cases, ensure eligible patients are initiated on IPT as soon as possible after ART initiation.
- 2 Clients who have not received IPT at ART start still benefit from IPT, and all eligible clients who have not already taken a course of IPT should receive it.
- 3 We should continue to work on strengthening recording. This will enable a clearer understanding of the differences in likelihood of developing TB between those who have completed their IPT and those who have not.

## So What?

A change in healthcare worker perception is needed if IPT is to be more widely used. Effort must be put in to ensure clinical teams initiate eligible patients on IPT (the sooner the better however, the benefits of IPT are still evident in those put on IPT well after ART) as those on IPT reported fewer new TB cases compared to those never put on IPT.



## References

- South African Antiretroviral Treatment Guidelines 2013
- Lester R, Hamilton R, Charalambous S, Dwadwa T, Chandler C, Churchyard GJ, Grant AD. Barriers to implementation of isoniazid preventive therapy in HIV clinics: a qualitative study. AIDS. 2010 Nov;24 Suppl 5:S45-48



## 4.2

**A model integrating tuberculosis and Covid-19 screening at primary care clinics in Johannesburg.**

# A model integrating tuberculosis and Covid-19 screening at primary care clinics in Johannesburg

Authors: Chipso Mutyambizi, Lynne Wilkinson, Kate Rees, Tom Boyles

Data shows that tuberculosis (TB) testing and treatment services were heavily impacted by the emergence of COVID-19. During the first month of lockdown in April 2020, South Africa experienced a more than 40% reduction in TB notifications. Avoidance of health facilities due to fear of contracting COVID-19, transport restrictions due to lockdowns, shifts of human resources to COVID-19, and primary healthcare service delivery changes impacted on access to healthcare including TB services. With the focus on testing, treating and infection prevention and control for COVID-19 increasing at the expense of TB, it became important to develop models of care that account for both infections.

An integrated primary facility approach to ensure appropriate TB testing was developed and implemented in 6 pilot facilities within Johannesburg district before being expanded to a further 100 within the district.

## Model description



### Why adopting the model was important?

1. To protect patients and healthcare workers from COVID-19 infection
2. To allow health facilities to continue to deliver health services
3. To facilitate COVID-19 and TB testing, referral, and management

Briefly the model applies color coding zones within clinics to enable patients and clinic staff to know which zone they were entering or exiting. The essential components of each zone are highlighted below:



#### YELLOW ZONE

- It is the single point of entry into the facility
- The first COVID-19 symptom screening station



#### ORANGE ZONE

- Cordoned section of the facility
- Second COVID-19 screening and management station
- HIV testing station
- TB and COVID-19 testing station



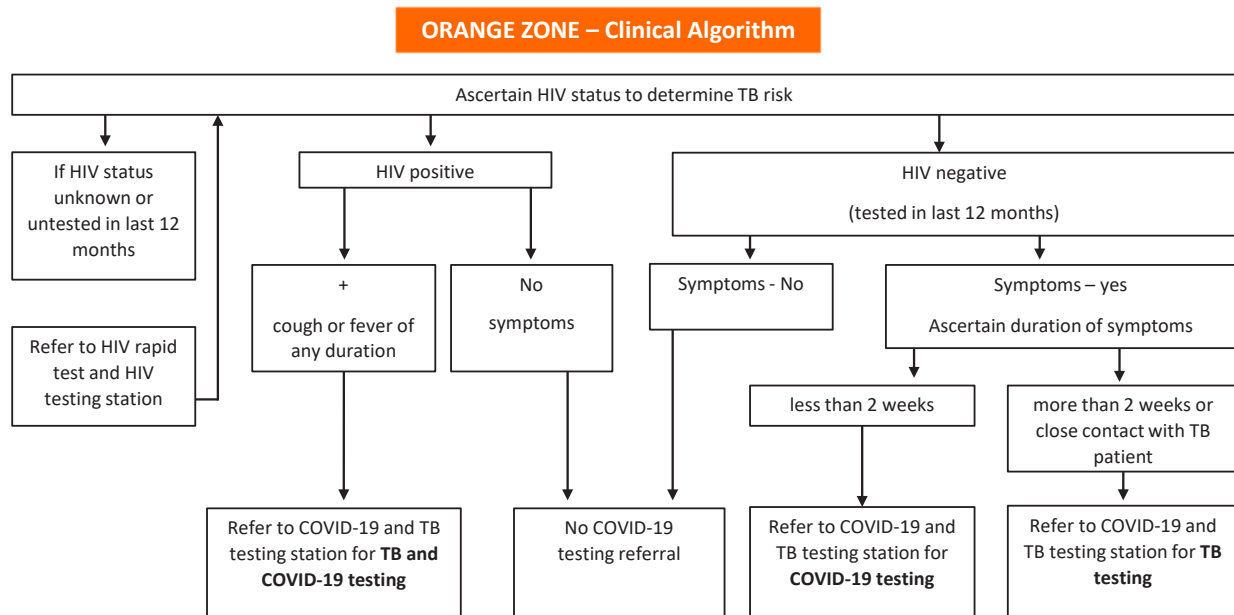
#### BLUE ZONE

- Zone in which all patients without COVID-19 symptoms are managed

# A model integrating tuberculosis and Covid-19 screening at primary care clinics in Johannesburg

Authors: Chipso Mutyambizi, Lynne Wilkinson, Kate Rees, Tom Boyles

Patients who screened positive for COVID-19 in the yellow zone proceeded to the orange zone and were investigated according to the following algorithm:



## Study purpose

This study explored the outcomes of a model integrating TB testing into COVID-19 services at two primary care clinics in SA. The study also looked at the factors that influenced a TB or COVID-19 test being conducted and the factors that influenced a positive COVID-19 test result.



**Study setting** - Data for this study was collected at two community healthcare centres (CHCs) serving high density urban areas.



**Data collection** - Data captured on clinical notes forms, COVID-19 registers and TB registers were captured into REDCap. Data was captured for patients visiting the orange zone between May to July 2020. When COVID-19 or TB results were not available on the relevant register, results were traced from the National Health Laboratory Service (NHLS) laboratory information system (LIS).



**Study variables** - Data extracted from the clinical forms included gender, COVID-19 symptoms checklist, symptom duration, reason for facility visit, HIV status, information on whether a TB or COVID-19 sample was sent for testing and the type of COVID-19 sample that was sent. Test results were extracted from the registers.



**Data analysis** - data was analysed in Excel and STATA version 14.

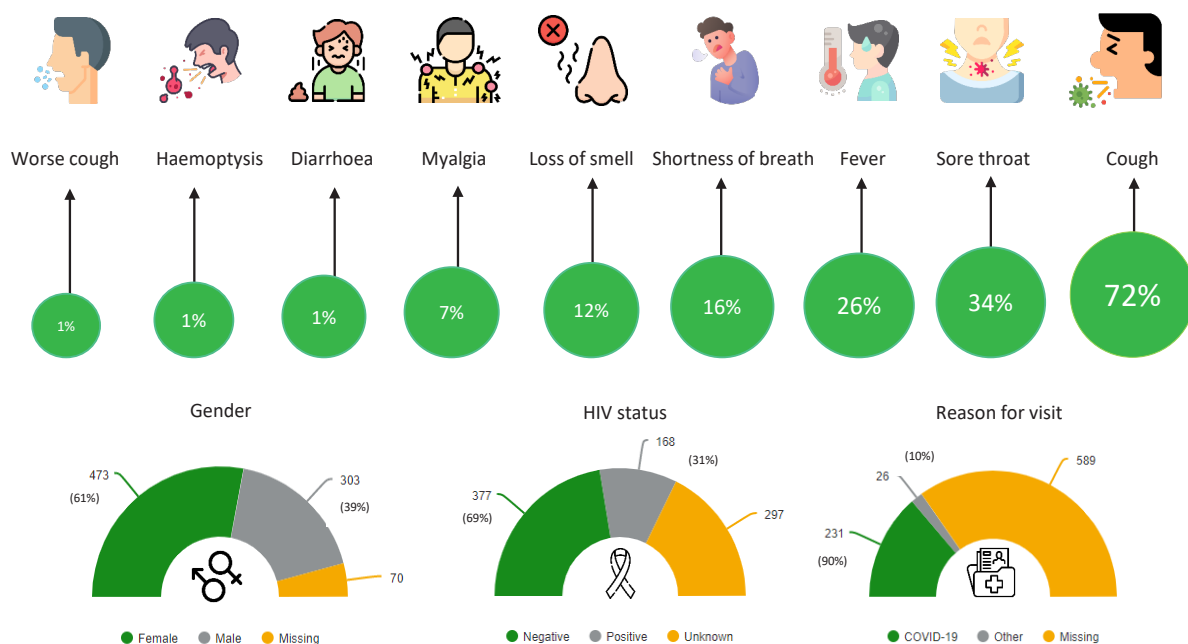
# A model integrating tuberculosis and Covid-19 screening at primary care clinics in Johannesburg

Authors: Chipu Mutyambizi, Lynne Wilkinson, Kate Rees, Tom Boyles

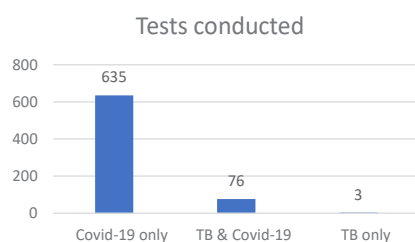
## What did we find out?

We report results for 846 patients who had clinical forms. This is what we found:

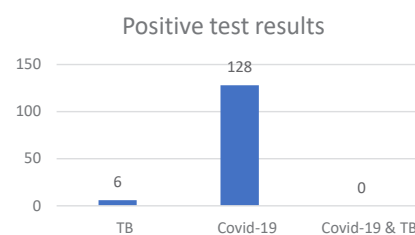
### Reported COVID-19 Symptoms and patient characteristics



### TB and COVID-19 tests and results



76 out of 846 (9%) patients were sent for both a TB and COVID-19 test

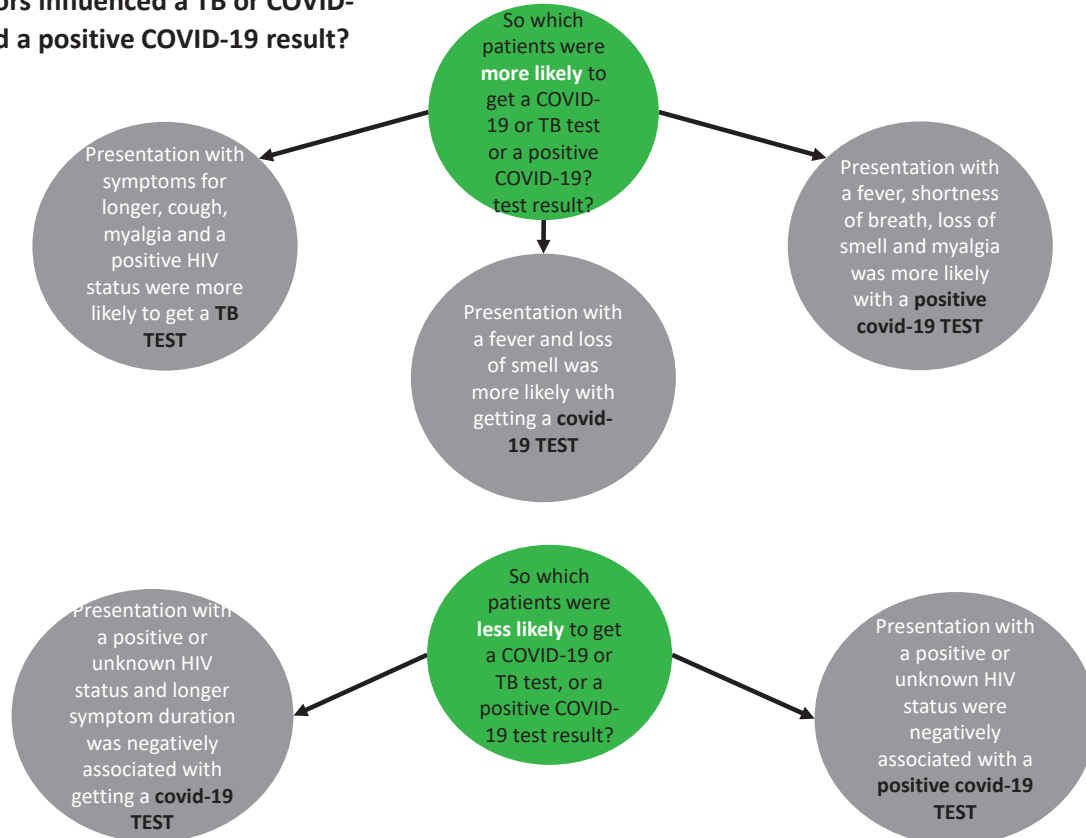


6 out of 79 (8%) patients who tested for TB were found to have TB  
128 out of 711 (18%) patients who tested for COVID-19 were found to have COVID-19

# A model integrating tuberculosis and Covid-19 screening at primary care clinics in Johannesburg

Authors: Chipso Mutyambizi, Lynne Wilkinson, Kate Rees, Tom Boyles

What factors influenced a TB or COVID-19 test and a positive COVID-19 result?



## Conclusion

The model implemented at these facilities helped with continuity of TB services as the COVID-19 pandemic continued to spread across the country. Our study showed the potential of the screening assessment and management tool in picking up TB cases. Our study also identified the factors that are associated with a COVID-19 or TB test and also a positive COVID-19 test result. Priorities should be placed on educating and encouraging health seeking behaviour at the onset of illness symptoms, and for health services to ensure continuity of services during Covid waves

## Take-home message

The reported clinical algorithm is a novel approach that can be implemented in facilities to ensure adequate TB services during the COVID-19 pandemic.

Find out more at:

<https://pubmed.ncbi.nlm.nih.gov/36546501>



## **5.1**

# **Promoting the wellbeing of healthcare workers at Anova Health Institute.**



# Promoting the wellbeing of healthcare workers at Anova Health Institute

Policy Brief Prepared by – Ndinda Makina, Natasha Davies, Kate Rees

## Key messages

- Healthcare worker (HCW) burnout has negative effects on:
  - quality of life,
  - quality of care provided,
  - the healthcare system.
- Protecting HCW workplace wellbeing is essential for well-functioning and responsive health systems.
- Programs on wellbeing should be informed by HCW.
- HCWs in this setting had low rates of burnout syndrome, but fairly high rates of emotional exhaustion, and working conditions that negatively impacted their wellbeing.
- Key demands contributing to work stress included excessive workload, work-life imbalance, lack of reward and recognition, lack of mental health support, and challenging relationships with external partners.
- To promote HCW wellbeing, this brief recommends creating a Wellness, Recognition, and Engagement Task Team to oversee wellness initiatives.



*Burnout is an occupational phenomenon “conceptualized as resulting from chronic workplace stress that has not been successfully managed characterized by sustained feelings of exhaustion, depersonalization, and professional inefficacy -The World Health Organization<sup>1</sup>*

# Promoting the wellbeing of healthcare workers at Anova Health Institute

Policy Brief Prepared by – Ndinda Makina, Natasha Davies, Kate Rees

## Introduction

Healthcare workers (HCWs) experience demands related to their work making them at risk of burnout- a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment. Moreover, the COVID-19 pandemic has placed an additional burden on HCWs<sup>2</sup>. The effects of burnout are potentially very serious for workers, their clients, and the health system.

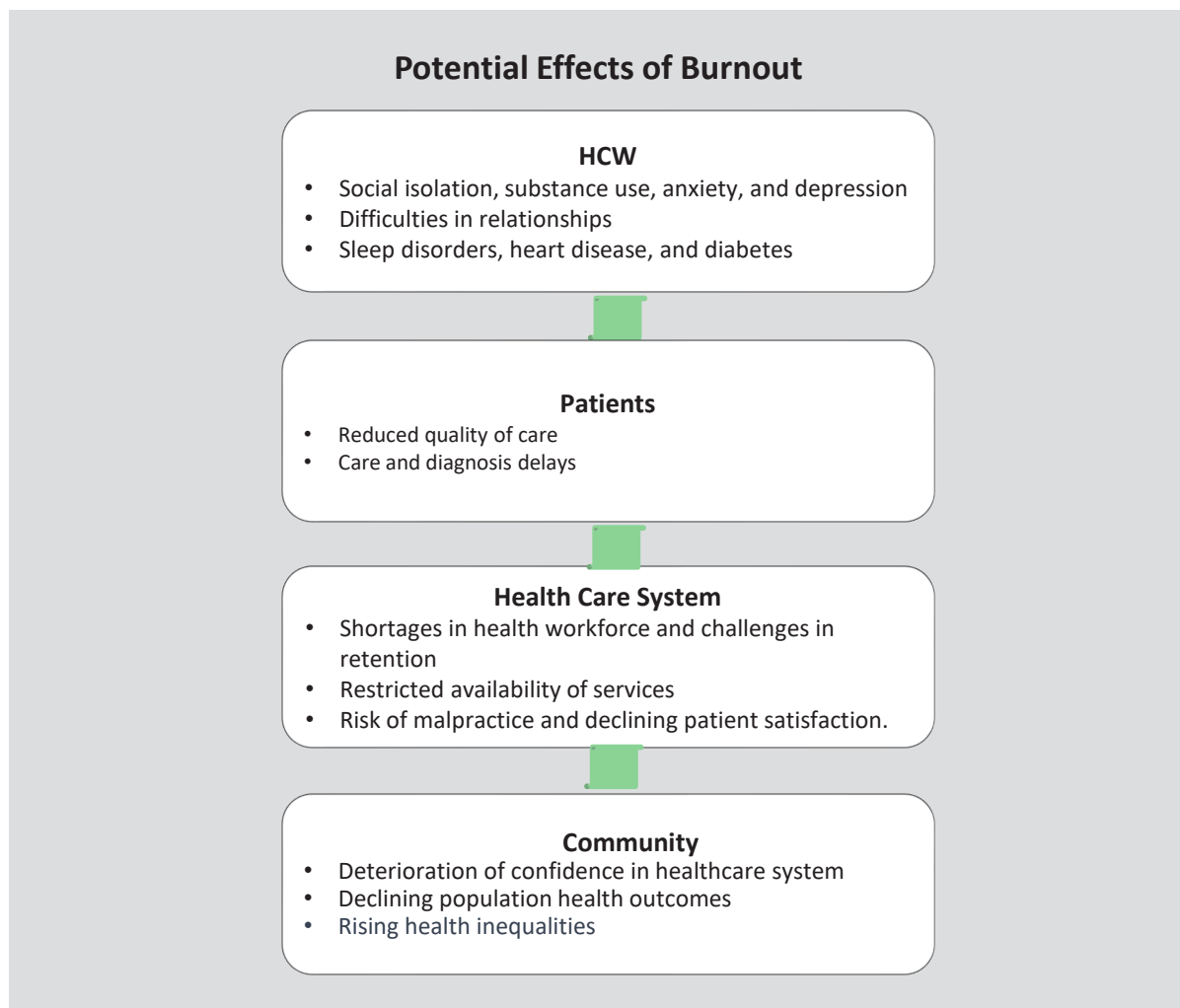


Figure 1 - List of varied consequences that are associated with HCW burnout.<sup>3</sup>

# Promoting the wellbeing of healthcare workers at Anova Health Institute

Policy Brief Prepared by – Ndinda Makina, Natasha Davies, Kate Rees

## What did we do?

We conducted a study to:



Measure burnout amongst Anova healthcare workers.



Explore why Anova healthcare workers may be experiencing symptoms of burnout.



Inform best practices amongst healthcare workers to prevent potential burnout in the future.

## What was our approach?



Survey to measure burnout (Emotional exhaustion, Personal accomplishment, and Depersonalization)



Interview some of the survey participants



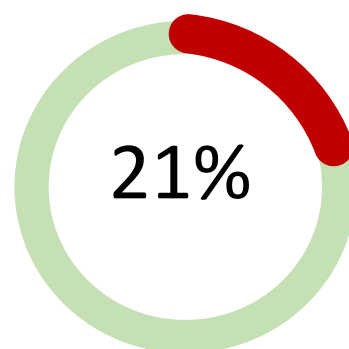
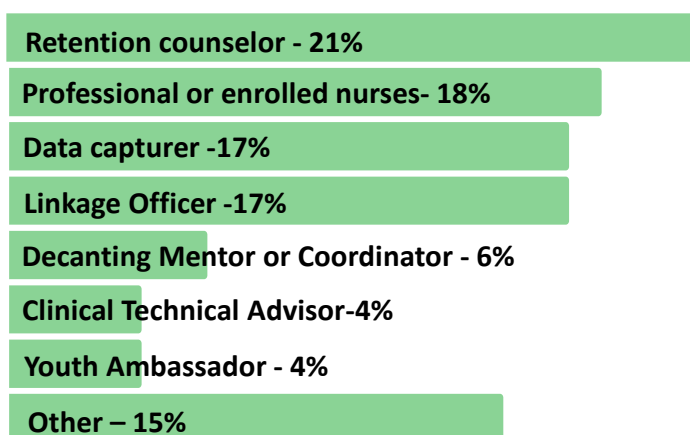
Disseminate findings and recommendations

# Promoting the wellbeing of healthcare workers at Anova Health Institute

Policy Brief Prepared by – Ndinda Makina, Natasha Davies, Kate Rees

## Survey Results

- Twenty percent (n=194) of the HCWs participated in the survey
- Most were female (n=152)
- The majority of the participants were non-roving staff (worked in one facility at a time)



Twenty-one percent of the participants were roving

- Overall burnout was low among HCWs (0.5%).
- Emotional Exhaustion was nearly **2 times more** common among roving HCWs than in non-roving HCW

21% had high emotional exhaustion



24% low professional accomplishment



6% high depersonalization



*More than 1 in 5 HCWs had high emotional exhaustion.*

*Emotional exhaustion is the first stage leading to burnout<sup>4</sup> so this is a warning sign that burnout could follow.*

# Promoting the wellbeing of healthcare workers at Anova Health Institute

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## INTERVIEW RESULTS

### 1. Working conditions

The majority of participants referred to working conditions as a source of stress. This included workload, work-personal life imbalance, lack of mental health support, nature of funding affecting job security, and emotional effect of interacting with patients.

### 3. Management practices

Management practices included career development and recognition. Some felt that management did not give them sufficient praise and recognition, implying a sense that some roles were seen as unimportant and not respected. Regarding salary, many participants reported that the remuneration received for their work is not equal to the effort they put into their roles or skill set possessed.

## 3 Job demands stressing Health Care Workers



*‘when the line is too long, I feel overwhelmed, because the patients also start complaining that they have been here for this long’*

### 2. Work Relationships

The relationship with other organizations was reported as difficult by most respondents, with only a few considering them to be positive. Respondents reported being undervalued and treated unfairly.



**Our qualitative analysis focused on understanding the interaction between job demands and workplace wellbeing, and exploring how job demands may be alleviated by job or personal resources to identify potential methods for promoting wellbeing in healthcare work setting**

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**Job resources promoting the wellbeing of HCW** On the positive side, the study found that despite the reported job demands, the majority of the HCWs were resilient. The following job resources were cited to have played a positive role in their wellbeing

**Meaningfulness of work** – The rewarding nature of the role was an important source of wellbeing among participants. All participants described this as an important aspect of their job. Participants indicated that they found purpose and meaning in their work through making a positive difference in the lives of patients.

## *Message from the field*

*“I am a bridge to the clinic.... it makes me happy because it means that I can change someone’s life. - **Female Youth Ambassador***

## *Message from the field*

*“With the sisters I work with, I will not lie; we work together, and we have managed to come up with our way of doing things. - **Female Retention Counsellors***

## **Relationship with Colleagues within their organization**

– All participants described a great experience of support from their team and were positive about their relationships with their peers. This relationship appeared to be one of the key sources of support and encouragement for many interviewed.

**Autonomy** – Another source of wellbeing was the perception of autonomy, most felt able and motivated to put constructive suggestions related to how they run their tasks to their line managers.

## **Conclusion**

We found low rates of burnout syndrome, but fairly high rates of emotional exhaustion, and working conditions that negatively impacted wellbeing. Our study highlights a need for the organization to address the key drivers of burnout, as well as foster the identified resources to promote HCW wellbeing.

## **Way forward**

To promote HCW wellbeing we recommend creating a Wellness, Recognition, and Engagement Task Team who will oversee the:

- Implementation of a full engagement survey
- Facilitate access to wellness days through Healthy Company
- Conduct wellness initiatives, including debriefing sessions covering hot topics

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