

Exploring Bottlenecks to ART Initiation

CD4 Snapshot

An inventory of CD4 machine access and functionality in 5 Provinces of Zimbabwe



Image source: J.F.Kapnek Trust

OPHID Snapshot Brief No.2

June 2016



CD4 Snapshot Background

Exploring Bottlenecks to reaching the 2nd 90

Under current Guidelines for Antiretroviral Therapy (ART) for the Prevention and Treatment of HIV in Zimbabwe (MOHCC, 2013), ART initiation is recommended for all adults and adolescents with confirmed HIV diagnosis and with a CD4 count of ≤ 500 cells/mm³. Priority initiation is recommended for all PLHIV with severe/advanced HIV disease (WHO clinical stage 3 or 4) or CD4 count less than or equal to 350 cells/mm³. Under these guidelines, achieving the 2nd 90 – ensuring 90% of all PLHIV are on treatment requires decentralised access to CD4 monitoring.

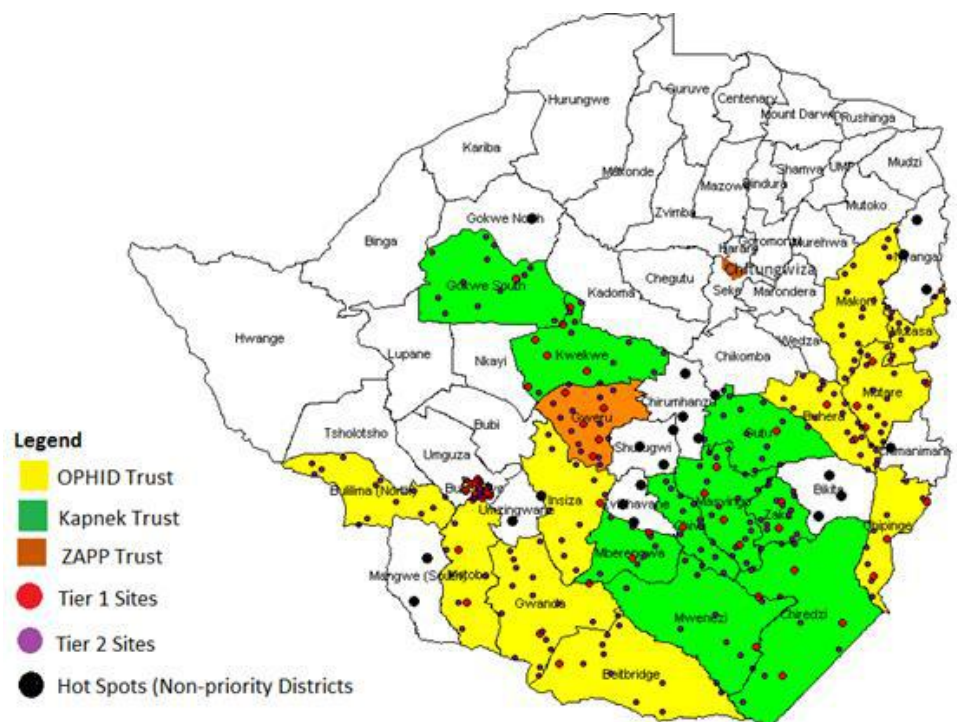


Image source: www.unaids.org

Accordingly, the Ministry of Health and Child Care (MOHCC) and its implementing partners, have undertaken a major push to expand access to CD4 Point of Care (POC) machines in an effort to ensure timely assessment and ART initiation among all PLHIV.

FACE HIV - Responding to MOHCC's Information Needs

OPHID, together with partners JF Kapnek Trust, and Zimbabwe AIDS Prevention Project Trust (ZAPPT) support the HIV Care and Treatment and PMTCT Programs of the MOHCC through the Families and Communities for Elimination of HIV (FACE HIV) program at over 330 health sites in Zimbabwe. Quarterly data review of routine indicators in April 2016 indicated lower than expected ART initiation rates among those newly diagnosed with HIV at



FACE HIV Program Coverage

FACE-supported sites. Reports from the field indicated CD4 machine breakdowns and stock-outs of CD4 commodities are impeding timely initiation of ART in many Districts.

To respond to both MOHCC and FACE HIV Program needs, a CD4 snapshot assessment was designed and implemented by FACE-HIV Program's Technical Advisor together with OPHID's Knowledge Management and Impact Analysis Unit.

Goals and Objectives of CD4 Snapshot Assessment

Goal: The goal of the snapshot assessment was to establish existing functionality of CD4 monitoring equipment in the Provinces where the FACE HIV Program implements.

Specific Objectives:

1. **COVERAGE:** Describe **the availability of POC and conventional CD4 monitoring.**
2. **FUNCTIONALITY:** Document current and recent (previous 6 month) **functionality of CD4 monitoring platforms.**
3. **BOTTLENECKS AND BARRIERS:** Identify existing **bottlenecks and barriers to effective and efficient use of CD4 monitoring equipment** for determining ART eligibility in line with existing MOHCC policies and targets.

Limitations of CD4 Snapshot – A Rapidly Changing Scenario

The strength of OPHID’s Snapshot assessments such as the CD4 snapshot – their timely collection, analysis and feedback to MOHCC and partners - are also their primary limitation. As MOHCC and partners invest heavily in scaling up health care worker and logistical capacity to provide HIV testing, treatment and monitoring to all PLHIV, a rapidly evolving health system capacity context is at play. It is likely that since the snapshot assessment was conducted, existing capacity and bottlenecks have changed. However, the Snapshots provide OPHID, MOHCC and partners with a useful baseline from which to track future progress, while highlighting key programmatic ‘take home’ messages.

Acknowledgements

The Organisation for Public Health Interventions and Development (OPHID) Trust expresses its gratitude and appreciation to the leadership of the Ministry of Health and Child Care and Families and Communities for Elimination of HIV (FACE HIV) in Zimbabwe program partners J.F. Kapnek and Zimbabwe AIDS Prevention Project Trust (ZAPPT) for their support and participation in the CD4 Snapshot Assessment in each of the Districts where it operates.

We gratefully acknowledge the support of the President’s Emergency Plan for AIDS Relief (PEPFAR) through USAID for the FACE -HIV Program in Zimbabwe (AID-613-A-12-00003). This support enables OPHID and FACE HIV consortium partners J.F. Kapnek Trust and ZAPPT) to directly support over 330 high priority health facilities across the country within the Zimbabwe National HIV Care and Treatment Program of the Ministry of Health and Child Care.

*Families and Communities for
Elimination of HIV - FACE HIV
Program*

*Together we will end the AIDS
Epidemic in Zimbabwe by 2030*



CD4 Snapshot Key Findings

Who: FACE HIV Consortium Program officers (OPHID, ZAPPT and Kapnek) at 154 health facilities with either Point of Care (POC) and/or conventional machines.

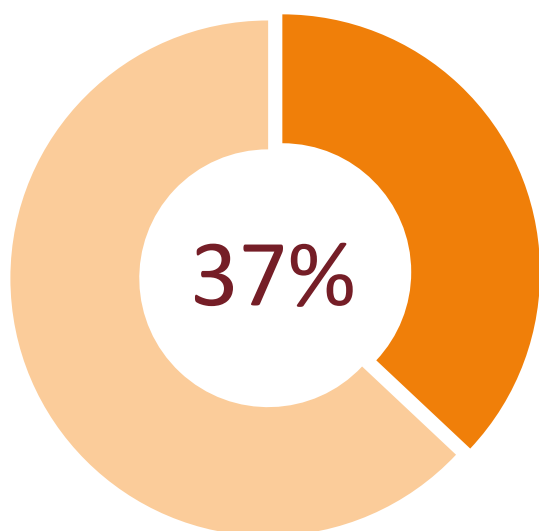
When: May 2016

Where: 5 Provinces (Bulawayo, Manicaland, Masvingo, Midlands, Matabeleland South)

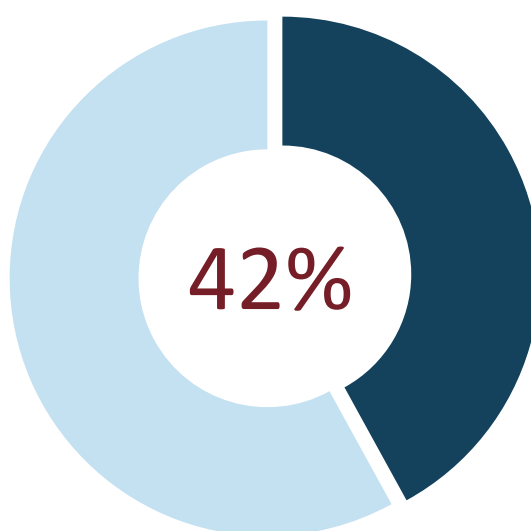
CD4 Machine Functional Status & Breakdowns

Among 124 CD4 POC & 30

Conventional CD4 Machines:



Machines not working as of
May 2016



Machines with breakdown
in past 6 months

Matabeleland South Province had highest rate of reported breakdowns at 65% (Table 1)

50% Conventional CD4 Down

15/30 conventional CD4 machines serving District and Provincial-level health facilities were not functioning at the time of survey.

Most frequently cited reasons for breakdown of conventional machines: no reagents, no lab scientist to operate the machine, pump not functioning and machine broken down for reasons unknown/due for service.

34% CD4 POC Down

42/124 CD4 POC machines were not functioning at the time of survey.

Reasons for breakdown of CD4 POC machines: error messages/not reading cartridges, no cartridges or reagents, no electricity, printer down.

Matabeleland South

Province badly affected – with **4 Districts reporting no functioning CD4 machines** (Bulilima, Mangwe, Matobo and Umzingwane) - 14/14 machines not functioning (Table)

94% of CD4 machines in Mat. South had experienced a stock out or breakdown in the past 6 months.



Length of breakdown



1 week to 2 years: Range of period of machine breakdown

St Anne's mission in Mangwe district - machine broke down in 2014; new machine which was delivered in March 2016 came without a power pack and was not functioning yet at the time of the assessment.

118 days

Average length of breakdown.

Reported stock out in last 6 months

63% stock out

POC cartridges or reagents in past 6 months

Stock out of POC machine cartridges was more prevalent than the reagents for the conventional machine.

2 weeks to 16 weeks: Range of length of stock out (average of 8 weeks)



81% of all CD4 machines

Experiencing a **stock out, breakdown or both** in the previous 6 months.

District variation in performance

Of CD4 machine functionality, with **all machines in 11/25 (44%) of Districts sampled** reporting service interruptions due to breakdown or stock outs in the previous 6 months.

Reasons for CD4 machine breakdown

- Machine breakdown with no known cause
- Faulty cables and power packs
- Machine not switching on
- Machine returning from service faulty
- Error messages 904 & 805
- Stock out of PIMA beads
- Not opening to process cartridges and when it opens it gives error messages
- Cartridges jamming inside the machine
- Failing an external quality control check

Table. CD4 Snapshot Survey Findings by Province and District

Province	District	Type of CD4 machine		Machines Currently NOT Functional (May 2016)	Reported # stock outs	Reported machine breakdown	Breakdown &/or SO (% machines in District/Prov.)
		POC	Conventional				
Bulawayo		11	2	3 (23%)	10 (91%)	3 (23%)	11 (85%)
Manicaland	Buhera	5	0	0 (0%)	2	2	3 (60%)
	Chipinge	7	0	1 (14%)	6	1	7 (100%)
	Makoni	6	1	1 (14%)	3	3	5 (71%)
	Mutasa	3	3	1 (17%)	3	1	4 (67%)
	Mutare	5	1	1 (17%)	4	1	4 (67%)
	TOTAL	26	5	4 (13%)	18 (58%)	8 (26%)	23 (74%)
Masvingo	Chiredzi	5	0	2 (40%)	1	4	4 (80%)
	Chivi	3	1	0 (0%)	3	0	3 (75%)
	Gutu	3	1	1 (25%)	0	2	2 (50%)
	Masvingo	7	1	4 (50%)	7	4	8 (100%)
	Mwenezi	5	2	3 (43%)	4	4	5 (71%)
	Zaka	4	2	2 (30%)	2	1	3 (50%)
	TOTAL	27	7	12 (35%)	17 (50%)	15 (44%)	25 (74%)
Matabeleland South	Beitbridge	3	1	1 (25%)	1	2	3 (75%)
	Gwanda	5	2	1 (14%)	6	1	6 (86%)
	Insiza	5	1	4 (67%)	6	4	6 (100%)
	Bulilima	5	0	5 (100%)	5	0	5 (100%)
	Mangwe	1	2	3 (100%)	2	1	3 (100%)
	Matobo	2	1	3 (100%)	3	2	3 (100%)
	Umzingwane	2	1	3 (100%)	3	1	3 (100%)
	Total	23	8	20 (65%)	26 (84%)	11 (35%)	29 (94%)
Midlands	Churumhanzu	4	3	1 (14%)	1	0	2 (29%)
	Gokwe South	6	0	3 (50%)	4	5	6 (100%)
	Gweru	6	1	1 (14%)	3	5	6 (86%)
	Kwekwe	6	2	3 (38%)	2	3	5 (71%)
	Mberengwa	4	0	2 (50%)	3	4	4 (100%)
	Shurugwi	6	1	4 (57%)	7	7	7 (100%)
	Zvishavane	5	1	4 (67%)	6	5	6 (100%)
	Total	37	8	18 (40%)	26 (58%)	29 (64%)	36 (80%)
Total		124	30	57 (37%)	97 (63%)	66 (43%)	124 (81%)

Snapshot Take-Homes

The CD4 snapshot assessment findings reported in this brief present some alarming findings regarding the current functionality of CD4 monitoring equipment serving PLHIV in 25 Districts of 5 Provinces sampled. While we acknowledge that the CD4 snapshot findings, are just that, a snapshot – representative of a fluid landscape of MOHCC and partner activities. Regardless, the current snapshot indicates the following key findings for consideration by MOHCC in policy and programs:

1. CD4 Functionality Is not optimal – We found over 1/3 of CD4 machines were not functioning at the time of the survey and that 81% had experienced a breakdown or stock out in the previous 6 months. Such findings represent a major bottleneck to the efficient assessment of ART eligibility for PLHIV under current MOHCC policy.

2. High proportion of conventional machines broken down affects a large proportion of PLHIV. With ½ of all conventional CD4 monitoring machines situated at high-volume provincial, district and mission hospitals not functioning, eligibility assessments for a large number of PLHIV are currently impacted. Such findings, together with large sites reporting referral of patients newly diagnosed as HIV positive back to primary health sites for ART initiation, substantiate program data triangulation findings that new ART initiation rates at high volume centres are lagging behind.

3. Missed opportunities for maximizing efficient use of CD4 monitoring. With the vast majority of sites reporting stock out of key commodities for CD4 monitoring, additional efforts are required to ensure effective commodity procurement planning and maintenance of all CD4 machines supporting MOHCC health sites.

4. Treat All = Major opportunity for progress towards the 2nd 90. While clinical staging should still be conducted in the absence of CD4 monitoring to identify PLHIV eligible for ART, the inferred impact of such a high proportion of CD4 monitoring challenges documented upon achieving the 2nd 90 in Zimbabwe are clear. Such findings provide further support for MOHCC to transition to Treat All strategies which advocate for ART initiation among all PLHIV regardless of CD4 count or clinical stage.



Findings from this snapshot assessment have been valuable for mobilising site-level support to problem solve CD4 breakdown problems, including assisting with logistics for transportation of machines to Harare for servicing and development of site action plans for addressing bottlenecks to ensuring all newly diagnosed PLHIV are initiated on ART in line with MOHCC guidance.