Will HIV Test and Start be the end of baseline CD4 monitoring? 57

CD4 functionality and impact of transition in a Resource Limited Setting, Zimbabwe

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BACKGROUND

- USAID-PEPFAR funded, Families and Communities for the Elimination of HIV (FACE HIV) program provides facility-based HIV Care and Treatment support to over 350 Ministry of Health and Child Care public health facilities in 22 Districts of Zimbabwe.
- Programmatic field reports cited 'downtime' of CD4 monitoring as a limiting factor for antiretroviral therapy (ART) initiation rates under 2013 clinical eligibility guidelines (CD4<500 cells/mm3 of WHO clinical stage 3 or 4).
- In June 2016, Zimbabwe started implementing a learning phase of new HIV treatment and care guidelines recommending starting ART in all people living with HIV (PLHIV) regardless of CD4 count or clinical stage – Treat All. New HIV treatment guidelines which still recommend baseline CD4 monitoring [1].

OBJECTIVE

To describe the availability of CD4 monitoring and identify existing bottlenecks to effective and efficient use of CD4 monitoring equipment prior to Treat All and early influence of Treat All on CD4 baseline.

The specific objectives of this program assessment:

1. To describe the availability of POC and conventional CD4 monitoring.
2. To document current and recent (previous 6 month) functionality of CD4 monitoring platforms.
3. To 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.
4. To describe changes in documented baseline CD4 prior to ART initiation during first month of Treat All.

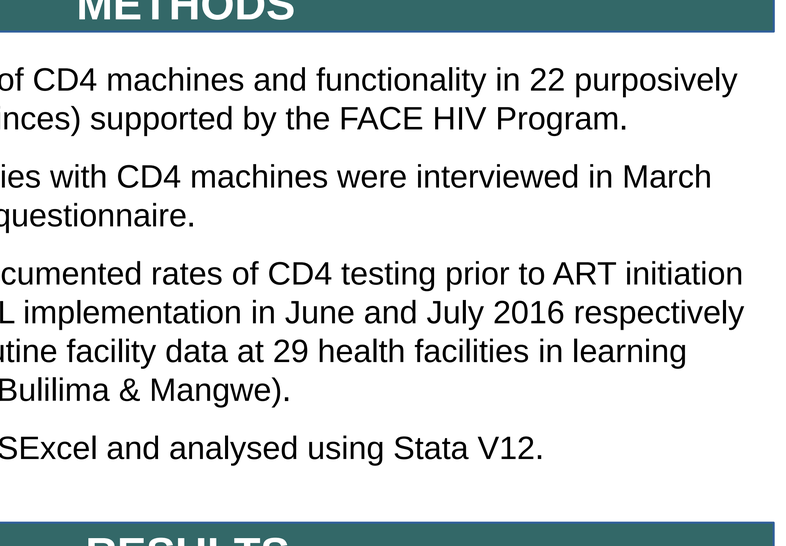
METHODS

- Programmatic inventory of CD4 machines and functionality in 22 purposively selected districts (5 provinces) supported by the FACE HIV Program.
- Health care staff at facilities with CD4 machines were interviewed in March 2016 using a structured questionnaire.
- After Treat All roll out; documented rates of CD4 testing prior to ART initiation pre- and post-TREAT ALL implementation in June and July 2016 respectively were abstracted from routine facility data at 29 health facilities in learning phase Districts (Mutare, Bulilima & Mangwe).
- Data was entered into MSExcel and analysed using Stata V12.

RESULTS

CD4 machine functionality

- At the time of the assessment 37% (57/154) CD4 Machines were not functioning: 50% (15/30) of conventional and 34% (42/124) CD4 POC machines were not functioning.
- In the previous 6 months, 81% of all CD4 machines had experienced a reagent stock out, breakdown or both (Table 1).
- There was large between-District variability of proportion of CD4 machines currently functioning (Table 1).



RESULTS continued

Table 1: CD4 machine assessment findings per province.

Province	CD4 machine type		No. of machines non-functional (May 2016)	Machines reporting cartridge/reagent stock out	Reported machine breakdown	Machines reporting breakdown &/or stock out
	Point of care	Conventional				
Bulawayo	11	2	3 (23%)	10 (91%)	3 (23%)	11 (85%)
Manicaland	26	5	4 (13%)	18 (58%)	8 (26%)	23 (74%)
Masvingo	27	7	12 (35%)	17 (50%)	15 (44%)	25 (74%)
Mat. South	23	8	20 (65%)	26 (84%)	11 (35%)	29 (94%)
Midlands	37	8	18 (40%)	26 (58%)	29 (64%)	36 (80%)
Total	124	30	57 (37%)	97 (63%)	66 (42%)	124 (81%)

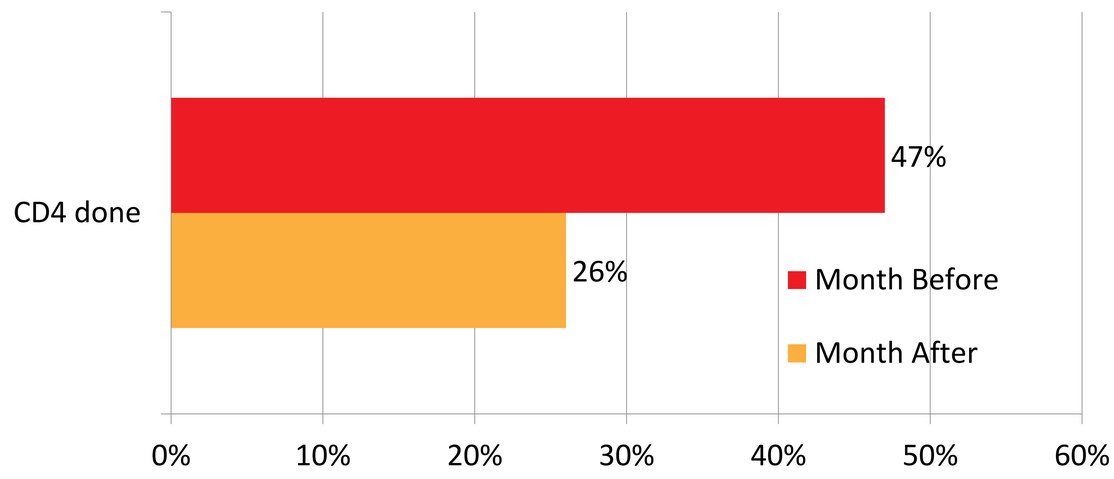
CD4 Machine Breakdown and Test Commodity Stockouts

- 63% of facilities reported stock out of CD4 POC cartridges or reagents in past 6 months
- Average length of break down was 118 days (range 1 week to 2 years)
- Stock out of POC machine cartridges was more prevalent than the reagents for the conventional machine.
- Average length of stock out was 8 weeks (range 2-16 weeks)

Impact of Treat All on CD4 Monitoring

- The proportion of patients initiated on ART that received baseline CD4 monitoring significantly reduced the month after Treat All began ($p < 0.001$).

Figure 1: Rate change in proportion of patients with documented CD4 testing prior to ART Initiation before and after 'Treat All' (N=597)



CONCLUSIONS

- We report frequent breakdown of both POC and conventional CD4 machines and a significant decline in documented baseline CD4 in newly initiated patients following the start of Treat All in Zimbabwe.
- Findings indicate potential value of Treat All strategy for increasing the number of PLHIV on ART and attainment of the 2nd 90.
- As national scale up of VL monitoring continues, we recommend cost-effectiveness analyses to determine optimal investment for improving functionality of existing CD4 equipment to support baseline monitoring of patients on ART as recommended in Zimbabwean national guidelines.

REFERENCES

1. MOHCC. 2016 Consolidated ART Guidelines. Harare: Ministry of Health and Child Care, Zimbabwe; 2016

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