# Quality improvement of the viral load programme in Mopani District, Limpopo Province

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## Towards the HIV 90-90-90 target: A simple and low-cost intervention to improve viral load completion

The aim of initiating HIV-positive patients onto antiretroviral therapy (ART) is to have a durable viral load (VL) suppression leading to improved health outcomes. In 2015/2016, the US President's Emergency Plan for AIDS Relief (PEPFAR) adopted the Joint United Nations Programme on HIV/AIDS Fast-Track strategy and 90-90-90 targets for 2020. These targets are to ensure that 90% of all people living with HIV know their HIV status; 90% of all people with diagnosed HIV infection receive sustained ART; and 90% of all people receiving ART have viral suppression. When this three-part target is achieved, at least 73% of all people living with HIV worldwide will be virally suppressed. This is compared to the estimated 57% based on projections using current VL completion (VLC) rates.[1] To meet the 90-90-90 target, every person starting HIV treatment will need to have access to VL monitoring, which requires improved access and efficiency in VL testing. According to the 2015 ART guidelines, patients receiving ART should be monitored for VL at 6 months, 12 months and yearly while on treatment.

### Methods

#### Setting

Anova Health Institute (Anova), a partner to Mopani District Department of Health (DoH) in Limpopo Province, is providing support to, and working with primary health care (PHC) facilities in the district to reach the VL suppression targets using simple interventions to improve VLC.

An evaluation of VL testing of patients (adults) was conducted in all facilities in Mopani District between January and March 2014, prior to the introduction of nurse-initiated management of antiretroviral therapy (NIMART) mentorship. An ART file review tool was developed and utilised when conducting the audit and the main focus was on clinical management of patients. The aim was to evaluate the status of the facilities, specifically: the availability of HIV/ART/sexually transmitted infection (STI)/tuberculosis (TB) guidelines, identifying skills gaps; and the clinical management

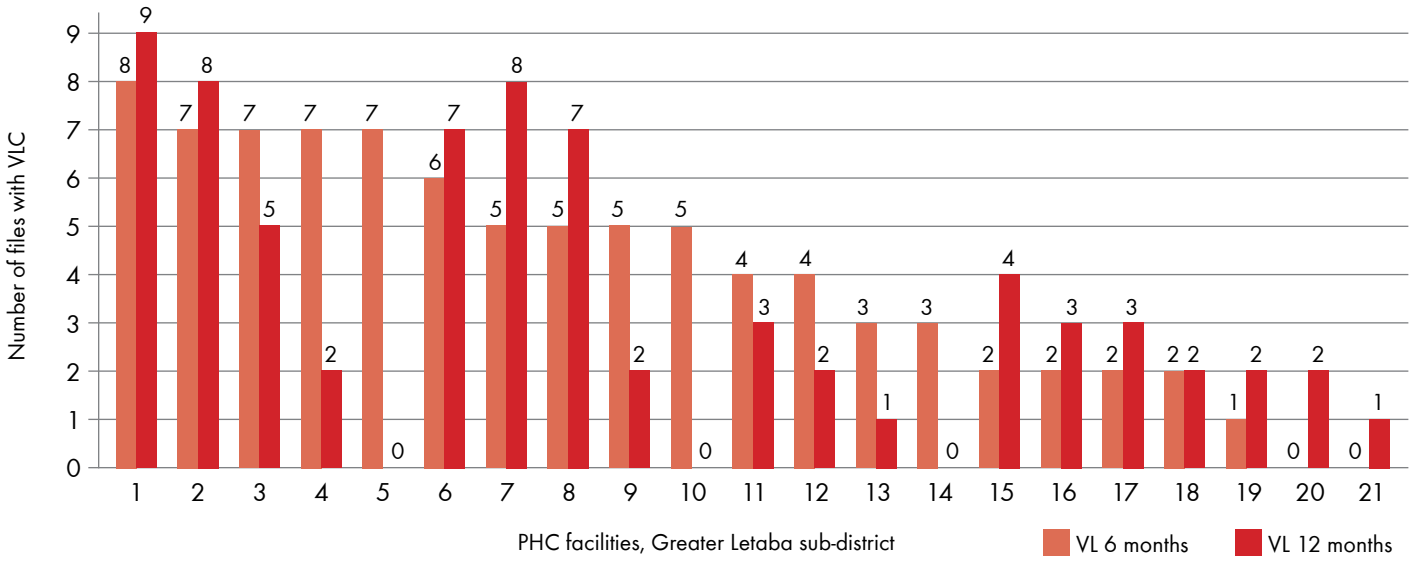


*Figure 1: Number of files with VLC at 6 and 12 months after ART initiation for the 2012 cohort in Greater Letaba sub-district.*

of patients on ART through file audits. Statistics showed that of the 50 298 patients on treatment, only 20 886 (41.5%) had VL testing within the preceding 12 months.[2]

'VL testing' within the cohort was defined as one month before, the month due and one month after; i.e. a 3-month grace period. This is accepted for clinical management of patients by the DoH in Mopani District. VL suppression was considered achieved with a VL <400 copies/ml.

For the pilot project, data directly from the file audits were used. For the evaluation of the roll-out of the project, all data used were sourced from Tier.net.[2] Findings from file audits in one of the sub-districts, Greater Letaba, with 21 primary health care (PHC) facilities, revealed that of the files reviewed, 40% of patients had VL testing in the 6-month period and 34% of patients within the 12-month period.

In response to this evaluation, the nurse mentors undertook a quality improvement (QI) evaluation process. Using the fishbone tool, Anova analysed the skills audits completed and observations made during support visits at each of the 21 facilities. From this process, challenges were identified as contributing to low VLC (Table 1).

*Table 1. Identified contributors to low VLC in 21 PHC facilities – Mopani District, 2014*

| | |
|---|---|
| **Patient factors**<br>• Relatives collecting treatment<br>• Clients uninformed of importance of VL monitoring<br>• Low socio-economic status – clients missing appointments | **Staff factors**<br>• Missed opportunities<br>• Data not captured<br>• Clinical stationery not fully utilised<br>• Clinical notes, not communicating to self or others |
| **Systems**<br>• Courier challenges on weekends<br>• Lack of communication between clinics | **Operations and equipment**<br>• Lab consumables not ordered or a shortage thereof |

The answer to 'What change can we make that will result in improvement?' led to the development of the sticker project as a cross-cutting resolution to many of the challenges.

## Sticker pilot project

Keeping track of the month in which the patient is due to have a VL test was one of the main problems. Twelve colours were identified and each allocated to a month in the calendar year to allow for easy identification. Each colour represents an ART-start month, which is also a blood-monitoring month. The sticker was placed on each file and a copy of the coded chart was placed in each consultation room. Patient education on the importance of VL testing was then conducted.

It was decided to pilot this project in the two worst-performing PHC facilities (14 and 21) in Greater Letaba sub-district for a 3-month period from January to March 2015. A series of steps was followed to implement the project:

1. Secure buy-in: meet facility staff, provide feedback on the baseline assessment and explain the importance of the project

2. Reference chart: place sticker chart on the notice board in all consultation rooms
3. Work with data capture; sorting files (removing inactive files) and identifying defaulters
4. Put VL month stickers on files according to start month and audit files for clinical management
5. Feedback report to the clinic staff with improvement plan:
    - VL recording and capturing according to SOPs

**Ease of implementation of the sticker project**

The sticker project can be introduced anywhere utilising the 12 colour stickers representing each calendar month. It can be applied to other chronic clients to identify their review months. Each facility needed only 12 differently coloured sticker boxes. The process can easily be incorporated into the daily activities and routine of existing staff; therefore, no extra personnel are needed.

**Analysis**

The sticker project was rolled out from June 2015. From July 2014 to June 2015 (pre-intervention), the VLC within 12 months increased by 2.1% and within the cohort grace period by 6%. From June 2015 to March 2016 (pilot and implementation), the VLC within 12 months increased by 15.9% and within the cohort grace period by 20.5%, showing an improvement in quality of VLC.

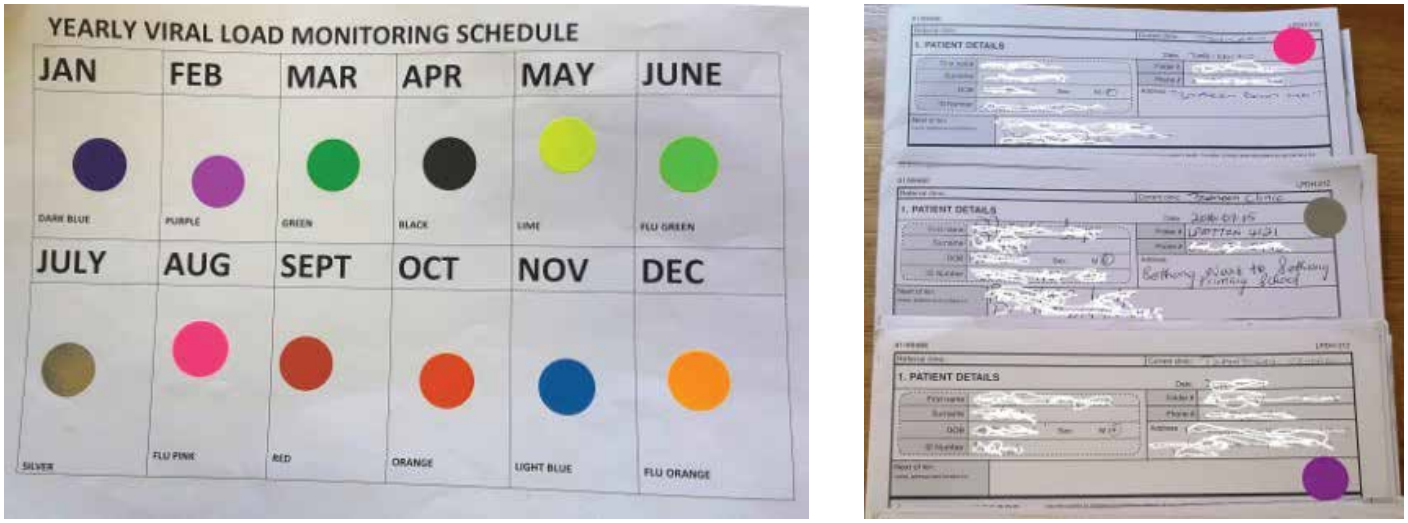


*Figure 2: (a) Monthly colour-coded VL sticker chart; (b) patient charts with stickers (patient details removed).*

- defaulter tracing
- identify and discuss challenges
- in-service training as required
- mentoring plan
- monthly support visits to each facility.

**Pilot project results**

There was a significant improvement in both the 6- and 12-month cohorts as illustrated in Figure 3. Based on the initial results and feedback from clinic staff and nurse mentors, the decision was taken to roll out the sticker project to all 111 PHC facilities in Mopani District. By June 2015, the sticker project had been cascaded out to 88 PHC facilities in Mopani District, and by May 2016, 110 of the 111 PHC facilities had introduced the project.

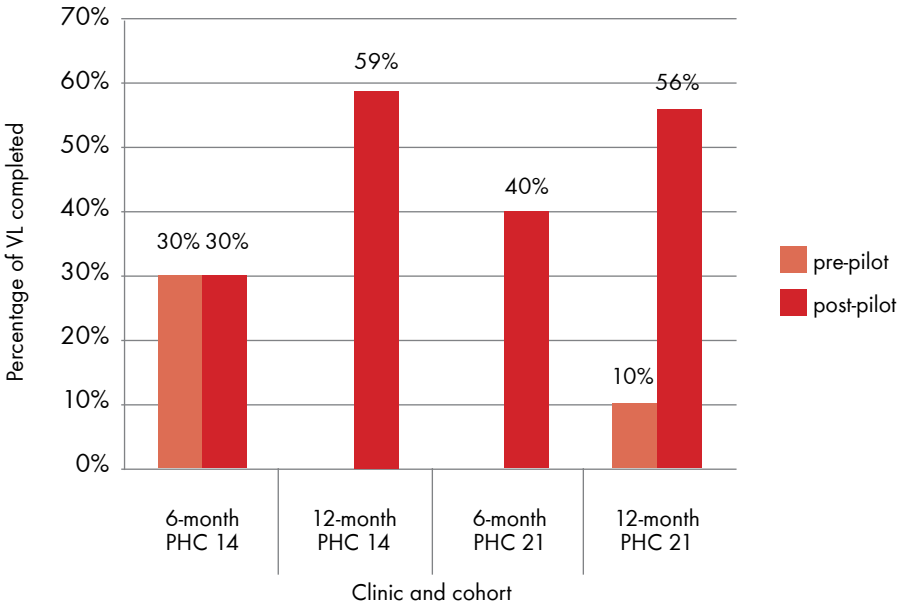


*Figure 3: VLC for the 6- and 12-month cohorts pre and post sticker pilot project roll-out in clinic 14 and 21.*

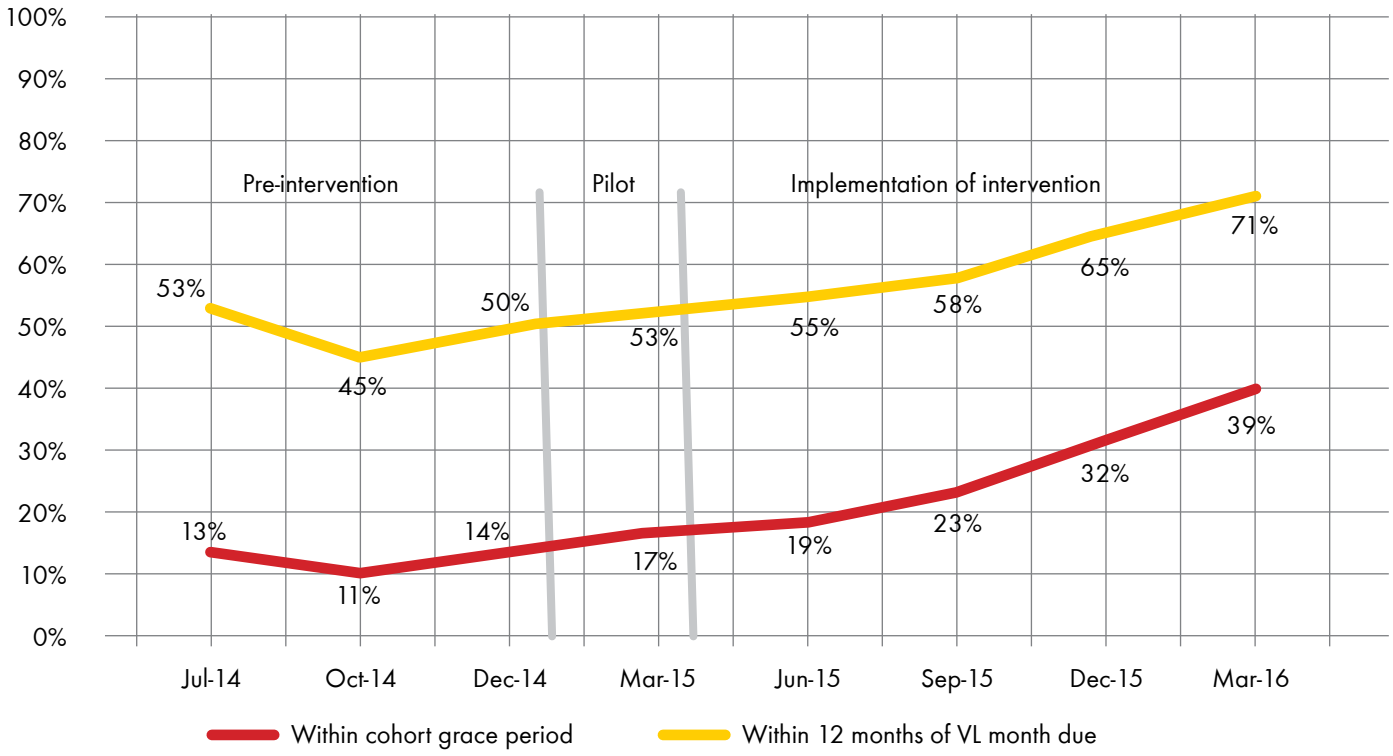


*Figure 4: Mopani District – VLC for all cohorts, July 2014 to March 2016.*

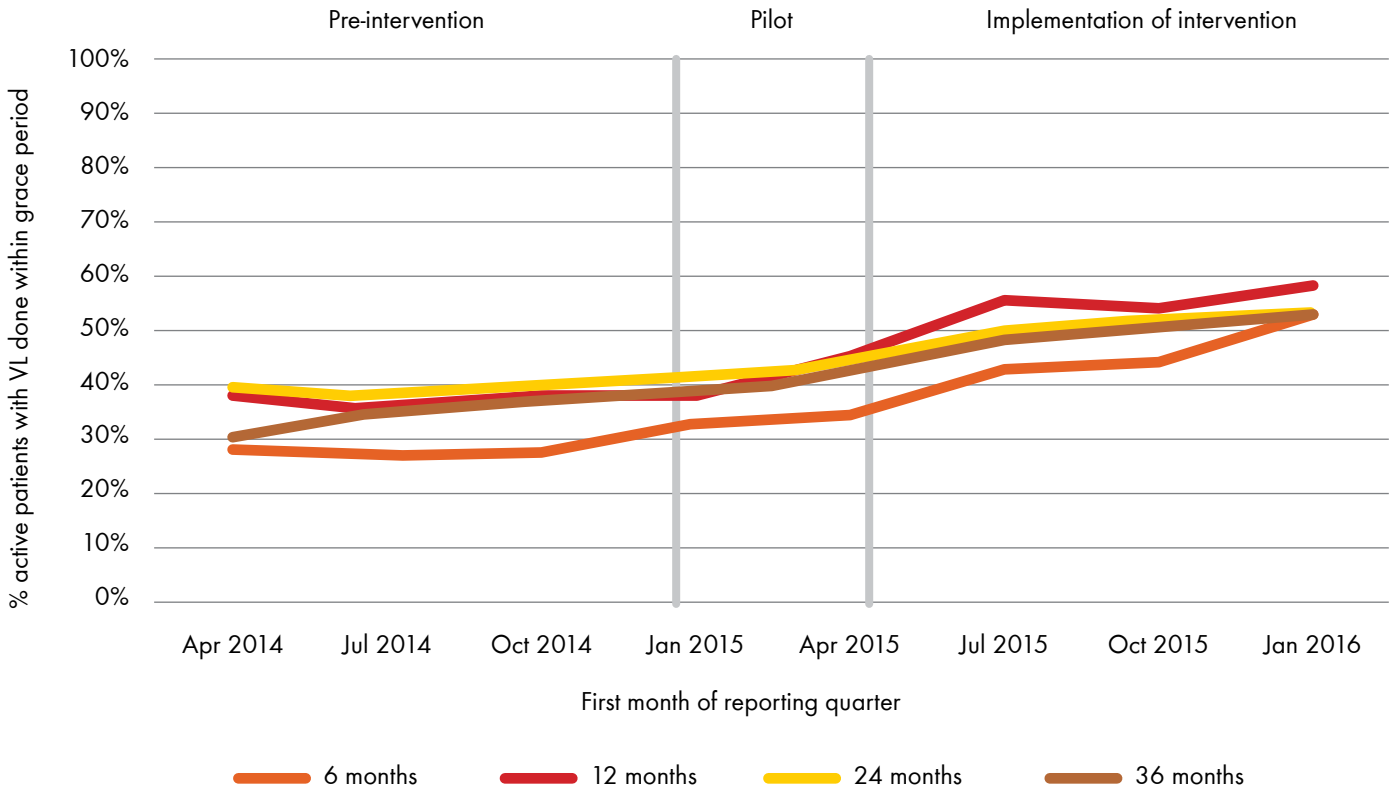


*Figure 5: VLC within grace period by cohort for Mopani District.*

*Table 2: VL suppression for Mopani District, January to March 2016*[2]

| Remaining in care 31/03/2016 | Unsuppressed VL | Suppressed VL | All VL done within 1 year | % performance | % from target (90%) |
|---|---|---|---|---|---|
| **67 054** | **9 137** | **42 839** | **51 976** | **82%** | **92%** |

Figure 5 illustrates the trend of improvement in cohort VL monitoring in Mopani District with the introduction of the sticker project.

### Viral suppression

The improvement in VLC is reflected in the Mopani District VL suppression rate of 82%, which is 92% of the target of 90%. Of the 67 054 patients remaining in care, 22.5% are not having VL testing.

### Balancing measures

A number of additional positive spin-offs were observed from the sticker project:

- Mentors extracted all files and removed old files, creating more space for filing
- Enhanced PHC re-engineering/facility collaboration as community health workers were tracing defaulters and clients who had missed appointments
- Tracing of clients was more effective leading to a greater number of clients returning for treatment
- Increased number of clients who were virally suppressed, and who were easily enrolled into ART adherence clubs
- Nurse mentors established clinical issues that were specific to each facility and are addressing these challenges.

### Limitations

Change as a result of the project was more difficult to assess with the long roll-out period. There was no transport to laboratories on weekends, resulting in facilities not taking VL blood samples on Fridays, Saturdays and Sundays (which affects the VLC rate).

## Conclusion

Only one PHC facility, of the 111 in the district, has not introduced the project since its roll-out in June 2015. This project can make a significant difference in any PHC facility as it requires minimal expenditure and training and does not require additional personnel. This process can readily be applied to any chronic disease management programme. Its simplicity and low cost ensures its sustainability.

If the picture continues to improve at the same pace, Mopani District will achieve 90% VLC before the target date of 2017.

The sticker project is a simple and easy-to-implement system that significantly improved our VL programme.

**Acknowledgements:** Department of Health, Mopani District; US President's Emergency Plan for AIDS Relief (PEPFAR); Grace Segage, Anova Health Institute; Anova Health Institute staff.

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1. UNAIDS. 90-90-90: An Ambitious Treatment Target to Help End the AIDS Epidemic. UNAIDS, 2014. http://www.unaids.org/en/resources/documents/2014/90-90-90
2. University of Cape Town. Tier.net version 1.9.2.0. 2016.