Remote Assistance Facility B

Viral Load Results Reporting and Interpretation Cascade
# Team Members

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Team member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champion/sponsor</td>
<td></td>
</tr>
<tr>
<td>Team leader</td>
<td></td>
</tr>
<tr>
<td>QI expert/coach</td>
<td></td>
</tr>
<tr>
<td>Data Manager</td>
<td></td>
</tr>
<tr>
<td>Frontline Members</td>
<td></td>
</tr>
<tr>
<td>Other team members</td>
<td></td>
</tr>
</tbody>
</table>
Background

• The CCC services were started in 20XX. There has been a total of 11,556 ever enrolled, with 3,565 currently on care. Out of these, over 93% are virally suppressed. There are approximately 100 clients seen daily.
# Stakeholder Analysis
*(Stakeholder analysis Grid)*

<table>
<thead>
<tr>
<th>SATISFY</th>
<th>ENGAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- County Government</td>
<td>- APHIA Plus</td>
</tr>
<tr>
<td>- MCAs</td>
<td>- AMPATH-Plus</td>
</tr>
<tr>
<td>- Reference Lab</td>
<td>- MEDSUP</td>
</tr>
<tr>
<td></td>
<td>- SCASCO</td>
</tr>
<tr>
<td></td>
<td>- CASCO</td>
</tr>
<tr>
<td></td>
<td>- Colleagues</td>
</tr>
<tr>
<td></td>
<td>- GIS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MONITOR</th>
<th>INFORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Peripheral Health Facilities</td>
<td>- Clients</td>
</tr>
</tbody>
</table>
THE STORY OF OUR PROJECT
## Project Summary

<table>
<thead>
<tr>
<th>What are we trying to accomplish?</th>
<th>How will we know if a change is an improvement?</th>
<th>What change will we make that will result in an improvement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure better management of our CCC clients</td>
<td><strong>AIM Statement</strong>&lt;br&gt;To increase the percentage of hard copy viral load results in the patient’s files from 42% in September, 2018 to 90% by March, 2019.</td>
<td><strong>Intervention</strong>&lt;br&gt;- Daily printing of VL results.&lt;br&gt;- Students routinely assigned to file the hard copy VL results under supervision.</td>
</tr>
<tr>
<td><strong>Metric:</strong>&lt;br&gt;Numerator: Number of hard copy VL CCC patient results in the files.&lt;br&gt;Denominator: Number of Viral Loads results received.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This project is about ensuring that hard copies of the viral load results are availed in the patient’s files. As a result of these efforts, monitoring of clients’ viral load suppression will be achievable. It’s important because we are concerned about timely clinician interpretation of results and clients overall health.

Success will be measured by showing improvement in the percentage of hard copy viral load results available in the files. What we need from you is a viral load result printing machine dedicated to the CCC laboratory.
Old Process Map - Movement

The First Step Towards Improvement

LARC

This extreme spaghetti movement needed urgent intervention through this project
## Process Mapping

### The First Step Towards Improvement

<table>
<thead>
<tr>
<th>Process Step</th>
<th>What Happens?</th>
<th>Who is Responsible?</th>
<th>Duration</th>
<th>Forms/logs</th>
<th>Opportunity for Improvement</th>
</tr>
</thead>
</table>
| **HTS Room** | • Testing for identification  
• Rapid test done if positive a confirmative test  
• Client then referred to the ccc for care. | HTS counselor | 45mins to 1hr | • MOH 362 register  
• Referral forms  
• Linkage registers  
• Locator forms | Avail registers at the room |
| **Adherence Room** | • Retest done by a different person for confirmation  
• Counseling on ARTs  
• Health education on the advantages of the clinic  
• File opening for registration | Nurse ASC | 1hr -1.5 hours | • File  
• Treatment register  
• Confirmatory register | Avail job-aids |
| **Booking Office** | • Clients pick numbers  
• File retrieval  
• Clients triage | Peer educator | 5-10mins | • Diary  
• Cards  
• DAR  
• Pens/Cards | Update the next VL dates |
| **Nurses Desk** | • Arrangement of files  
• Triaging  
• Refer to clinician | Nurse | 5mins | • Files  
• Pens | Take all vital signs |
### Process Mapping
The First Step Towards Improvement... cont

<table>
<thead>
<tr>
<th>Process Step</th>
<th>What Happens?</th>
<th>Who is responsible?</th>
<th>Duration</th>
<th>Forms/logs</th>
<th>Opportunity for Improvement</th>
</tr>
</thead>
</table>
| Clinician Room | • Counseling on ARVs and clinic revisits  
• WHO staging  
• Booking appointment for clients next visit  
• Drug prescription  
• Lab request is written by the clinician and client is referred to the lab | Clinicians | 20-45mins | • File  
• EMR  
• Green cards  
• Pens | Improve on confidentiality |
| Laboratory | • Viral load Sample collection  
• Sample packing for transportation to the testing lab  
• Remote login  
• Download and printing of results  
• Documentation of vl results in the vl register | Lab tech | 10-15mins | • Lab request form  
• Lab register  
• Tracking log | Develop SOPs  
Avail printer |
| Records | • Booking  
• Giving TCAs  
• Filing of VL results | HRIOs | 5-10mins | • Appointment diary  
• DAR | Avail all registers  
File results promptly |
| Pharmacy | • Dispensing drugs  
• Counseling for those who are mal and obese | Pharmacist | 10-15mins | • EMR  
• Request form | Report the VL flags from NASCOP |

The Problem area identified

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[Public Health Informatics Institute](https://www.phinstitute.org)
New Process Map - Movement
The First Step Towards Improvement

Entrance → File Retrieval → Triage → Laboratory → Clinician → Waiting → Nutrition → Booking → Exit
• Gap (Problem Statement):
Following our baseline investigation, we found that only 42% of files had VL hard copy results which negatively affects our quality of service.
Voice of Customer (VOC)

- VOC 1 Survey was done on Sept. 2018 on 15th and 16th on patients to gauge the magnitude of the problem in regards to service provision.
- A follow up VOC 2 was carried out on 22nd March, 2019 to assess the impact of the project.
- Random convenient sampling was utilized to target the 26 willing respondents in VOC 1 and 19 in VOC 2.
- A simple questionnaire with 5 questions, Two in Likert scale, Two closed-ended while one was open-ended.
- The questionnaires were in two versions, Swahili and English to negate any language barriers.
- Respondents were allowed to fill the questionnaires within 30 minutes which was an adequate time.
voice of customer (voc) questionnaire sample
Voice of Customer

Question 1: Service Rating Generally

<table>
<thead>
<tr>
<th>Category</th>
<th>VOC 1 - Plain Colour</th>
<th>VOC 2 - Shaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>53%</td>
<td>18%</td>
</tr>
<tr>
<td>Professionalism</td>
<td>30%</td>
<td>18%</td>
</tr>
<tr>
<td>Courtesy</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Friendliness</td>
<td>85%</td>
<td>70%</td>
</tr>
</tbody>
</table>

- Unsatisfactory
- Satisfactory
- Excellent

VOC 1 - Plain Colour
VOC 2 - Shaded
Voice of Customer (VOC) cont...

Question 2: Areas to Improve

- Speed: VoC 1 (55%) vs. VoC 2 (31%)
- Privacy: VoC 1 (11%) vs. VoC 2 (17%)
- Triage: VoC 1 (11%) vs. VoC 2 (10%)
- All is Well: VoC 1 (42%) vs. VoC 2 (22%)
Lessons from the VOC

• Questions 3 and 4 (not projected) showed high approval for the site as preferred and also recommended site in both VOCs.

• There was fair performance in speed, average performance in courtesy and good performance in friendliness.

• Question 5 (not projected): Rating of the services on the day of the survey showed an average of 50% in VOC 1 but slightly better in VOC 2 at 64%.

• Generally, more clients expressed more satisfaction with services in VOC 2 compared to VOC 1.
• **Metric Selected**
  
  Numerator: Number of hard copy VL results in the files.
  Denominator: Number of Viral Load results received.

• **Baseline Data**
  
  42% of files have VL hard copy results
### Data Collection Process

#### Data Collection Tool

<table>
<thead>
<tr>
<th>Data Collection Plan</th>
<th>Date of Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC No.</td>
<td>VL result received</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Data Collection Plan

<table>
<thead>
<tr>
<th>What</th>
<th>Who</th>
<th>How</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline data</td>
<td>HRIO</td>
<td>File abstraction</td>
<td>Once</td>
</tr>
<tr>
<td>Project data review</td>
<td>LARC team</td>
<td>Collection and analysis</td>
<td>Monthly/ Every 3 days</td>
</tr>
</tbody>
</table>
• Data Collection Process
The data was initially collected monthly and analyzed but the frequency was increased to twice per week cover for the lost collection points in order to achieve a minimum of 25 collection points in the project.

• Data Analysis
The data collected was then fed into the spreadsheet which was then commanded to develop graphical presentations. The projections were presented to the LARC team biweekly for interpretations and adjustments to course.
ROOT CAUSE ANALYSIS OF THE MISSING HARD COPY VLs IN THE FILES

PEOPLE
- Low staffing at records office
- Lack of role assignment
- Competing tasks
- Workload

PROCESS
- NASCOP site is slow to access
- Delays when downloading results
- Results downloaded in bulk hence delaying the filing

MATERIALS/SUPPLIES
- Inadequate printing material due to poor planning by the user delays to give order at the required time.

ENVIRONMENT
- Limited waiting area

POLICIES/PROCEDURE
- Incomplete SOPs on VL handling
- Lack of SOP for filing results

EQUIPMENT
- Lack of printer for printing results

Missing the hard copy viral load results in the CCC clients'
IMPACT / EFFORT GRID  A Tool for Prioritizing Opportunities

**IMPACT**

- **Just Do It**
  - Avail registers
  - Prepare lab SOPs
  - Use job aids
  - Confidentiality
  - Update VL dates in the DAR
  - Constant Nut. supplement
  - Report VL flags to the clinician

- **Project**
  - Filing VL hard copy results

- **Do if Impactful**
  - Easy to do

- **Maybe Someday**
  - Employ more staff
  - Difficult to do

**EFFORT**

- Define
- Measure
- Analyze
- Improve
- Control
• Just Do Its
1. Avail all required registers at the identification stage ✓
2. To avail and mount job aids at the enrolment stage for efficient service ✓
3. To ensure that all vital signs are taken at the triaging stage ✓
4. To develop and print viral load SOPs by the lab tech ✓
5. To ensure a steady supply of nutritional supplements ✓
6. To improve on confidentiality during the clinicians review by partitioning the rooms In progress
7. The pharmacy to ensure that delayed NASCOP VL flags are notified to the clinicians ✓
LARC

5s Before

Define | Measure | Analyze | Improve | Control

5s After

Define | Measure | Analyze | Improve | Control

Students now assigned to update files routinely

VLs filed once in a while by the HRIOs

SOPs on the table

SOPs mounted on the walls

SOPs on the table

SOPs mounted on the walls
Define | Measure | Analyze | Improve | Control

5s Before

VLs at the HRIO waiting for collection

5s After...cont

Loose results awaiting filing

Now all hard copy results are routinely filed. This has made the clinician’s job easier.
Visual Management Changes

Define

Measure

Analyze

Improve

Control

Job aids at enrolment

Job Aids

Registers at Testing

VL SOP at Lab
Small Test of Change 1 (PDSA) - November

- Data was analyzed biweekly and presented monthly.
- VLs hard copy results hard risen from baseline of 42% to 75% by end of Nov.

- To download VL results
- To print the results
- To file the results
- To do PDSA

- Results accessed and downloaded daily.
- Daily filing by Students and HRIOs
- Data presentation and analysis

- Not Yet
Small Test of Change 2 (PDSA)- March

- **Define**
  - Accessing the VL portal daily and downloading results
- **Measure**
  - Daily filing by HRIOs
- **Analyze**
  - Data presentation and analysis
  - Data analyzed 2 times weekly.
  - VLs in files had risen from baseline of 42% to 81% by end of February
- **Improve**
  - To download VL results
  - To print the results
  - To file the results
- **Control**
  - Standardize the DOs
  - To download VL results
  - To print the results
  - To file the results
  - Accessing the VL portal daily and downloading results
  - Daily filing by HRIOs
  - Data presentation and analysis

Diagram:
- ACT
- PLAN
- STUDY
- DO
Baseline data was derived from 150 files abstracted from June, July and August which showed that only 42% of files had the VL hard copy results filed.
## Project Raw Data from Sept., 2018 to Mar., 2019

<table>
<thead>
<tr>
<th>Month</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept</td>
<td>49%</td>
</tr>
<tr>
<td>Oct</td>
<td>72%</td>
</tr>
<tr>
<td>Nov</td>
<td>75%</td>
</tr>
<tr>
<td>Dec-04</td>
<td>76%</td>
</tr>
<tr>
<td>Dec-06</td>
<td>76%</td>
</tr>
<tr>
<td>Dec-10</td>
<td>73%</td>
</tr>
<tr>
<td>Dec-13</td>
<td>78%</td>
</tr>
<tr>
<td>Dec-18</td>
<td>78%</td>
</tr>
<tr>
<td>Dec-20</td>
<td>79%</td>
</tr>
<tr>
<td>Jan-03</td>
<td>80%</td>
</tr>
<tr>
<td>Jan-08</td>
<td>79%</td>
</tr>
<tr>
<td>Jan-10</td>
<td>83%</td>
</tr>
<tr>
<td>Jan-15</td>
<td>85%</td>
</tr>
<tr>
<td>Jan-17</td>
<td>67%</td>
</tr>
<tr>
<td>Jan-22</td>
<td>69%</td>
</tr>
<tr>
<td>Jan-24</td>
<td>71%</td>
</tr>
<tr>
<td>Jan-28</td>
<td>71%</td>
</tr>
<tr>
<td>Jan-31</td>
<td>73%</td>
</tr>
<tr>
<td>Feb-05</td>
<td>77%</td>
</tr>
<tr>
<td>Feb-07</td>
<td>71%</td>
</tr>
<tr>
<td>Feb-12</td>
<td>73%</td>
</tr>
<tr>
<td>Feb-14</td>
<td>76%</td>
</tr>
<tr>
<td>Feb-19</td>
<td>79%</td>
</tr>
<tr>
<td>Feb-21</td>
<td>80%</td>
</tr>
<tr>
<td>Feb-26</td>
<td>82%</td>
</tr>
<tr>
<td>Feb-28</td>
<td>83%</td>
</tr>
<tr>
<td>Mar-05</td>
<td>85%</td>
</tr>
<tr>
<td>Mar-07</td>
<td>87%</td>
</tr>
</tbody>
</table>
Project Data Display

Timeline

Baseline Hard Copy VL in Files - 42%
Target Hard Copy VL in Files - 90%

PDSA 1
March

One crucial LARC player reassigned on Jan 15th

PDSA 2
November

Plasma VL Optimization RRI started on Feb 5th
## Control Plan

### Project Title:
Filing of the Viral Load hard copy results in patient’s files.

### Project Owner:

### Critical Elements for Quality:

#### Process Step:
The health records officers and the students to be assigned routinely to file VL results.

#### Output:

### Monitoring over Time:

#### Metric:
Number of hard copy viral load results in the files / Number of VL results received

#### Acceptable Range:
60%-95%

#### How Measured:
Monthly

### Control or Reaction Plan:
Repeat of data collection within 2 weeks and reassess. Hold consultative meeting if data still lying outside acceptable range.

### Accountability:

- **Who is responsible for measuring:**
- **Where is the measure reported:** In the QIT meeting
- **To whom is it reported:**
- **Who is ultimately responsible:**

### Related Documentation:

- Process Map and Run Chart in the presentation.
Challenges

• Bureaucratic channels delay printer and cartridge purchase and room partitioning which hamper quality service

• One Labtech previously dedicated to CCC now reassigned to other areas without replacement.

• Client optimization based on plasma VL increased the workload especially to the remaining labtech.

Address Challenges

• Room partitioning forwarded to the incoming NGO (AMPATH Plus) for follow up.

• Plans underway to recruit a replacement.

• Rapid Response Initiative ending in a month’s time then hopefully thing will go back to normal.
Lessons Learned

- Through filling hard copies in the patients files we have reduced the number of patients who go home with wrong results.
- Minimal time is spent in spaghetti movement since we just check the VL results at the back of the file.
- With registers and job aids placed at the work stations, the time for new clients is quality and they are more confident with the services provided.
- The new VL SOPs allow for professional service provision.
- It has been easy for the Clinicians to quickly optimize clients, to start STF interventions and to promptly switch regimes without unnecessary delays.
- Simple job reassignments can greatly improve work output.
## Action Plan
### LARC 2.0 and beyond

<table>
<thead>
<tr>
<th>Goal</th>
<th>Action Item</th>
<th>By Whom</th>
<th>By When</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>To attain and maintain the percentage of hard copy viral load results in the patient’s files above 95%</td>
<td>1. To give feedback of LARC 2.0 end of project and beyond. To CCC, Hospital and AMPATH Plus</td>
<td></td>
<td>15th April, 2019</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. To print VL results</td>
<td></td>
<td>Everyday</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>2. To file the hard copy results daily</td>
<td></td>
<td>Everyday</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>4. Meet Monthly to assess LARC 2.0 impact and progress</td>
<td></td>
<td>Monthly</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
Thank you!

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