Direct Assistance Facility B

Viral Load Results Interpretation and Patient Management
## 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>
Facility Background

A faith based organization established in 1997

• We serve a vulnerable population of close to 500,000 persons.
• We are a Level 3 facility with a work force of 82 local staff, 5 foreign staff and 50 CHV’s

Previous improvement efforts: Integration of MCH

Our HIV burden

• # on ART: 2779
• Number of VL tests 300/month
• Suppression rates- 94.5

Community needs

• Uptake of family planning
• Comprehensive Maternity Services
# Stakeholder Analysis

<table>
<thead>
<tr>
<th>Name</th>
<th>Level of Support</th>
<th>Key Interests / Issues</th>
<th>Assessment of Impact (H, M or L)</th>
<th>Action Items / Strategy to Influence</th>
<th>Key Communication Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>SK</td>
<td>E Funds and policies</td>
<td>H Funds</td>
<td>Through presentations &amp; narrative reports</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>E Policies</td>
<td>H Policies</td>
<td>Reports</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td>E Funds and technical assistance</td>
<td>H Funds and TA</td>
<td>Project progress and emails</td>
<td></td>
</tr>
<tr>
<td>Patients</td>
<td>E</td>
<td>Health services</td>
<td>H Clinic attendance</td>
<td>Logs and calls</td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>E</td>
<td>Development and implementation of SOP’s and guidelines</td>
<td>H Implementation of SOP and guidelines</td>
<td>CME and reports</td>
<td></td>
</tr>
<tr>
<td>NHRL</td>
<td>E</td>
<td>Timely feedback of results</td>
<td>H Feedback</td>
<td>Emails and portal log in</td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>N</td>
<td>Collaboration and being part of the team</td>
<td>M Disseminating information</td>
<td>Meetings</td>
<td></td>
</tr>
<tr>
<td>Safecare</td>
<td>SP</td>
<td>Quality improvement</td>
<td>M Assessment reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suppliers</td>
<td>SP</td>
<td>Ensuring that commodities are available</td>
<td>H Timely supply of commodities</td>
<td>Calls and emails</td>
<td></td>
</tr>
<tr>
<td>Safety tech</td>
<td>SP</td>
<td>Infection prevention and waste management</td>
<td>H Waste management</td>
<td>Physical collection of waste</td>
<td></td>
</tr>
</tbody>
</table>

R = Resistant, SK = Skeptical, N = Neutral, SP = Supportive, E = Enthusiastic
The Story of Our Project
The Story of Our Project

Before

• Upon receiving results:
  • Poor communication of results from lab.
  • Clinicians giving longer appointments (ranging between 30-90 days).
  • There would sometimes be no communication between clinician’s and adherence team, hence patients would miss EAC, there was no timeline for SI to update the results in the EMR.

After

• Improved communication process.
  • Upon receiving results, the lab personnel prints in three copies and shares one copy with SI, the other with adherence then flags the High VL results and share with viremia clinic lead. Lab updates the VL log, SI updates EMR and adherence updates the EAC register.
  • Adherence lead calls all HVL patients immediately.
  • Viremia clinic lead updates viremia register and confirms the same (HVL line list) with adherence lead.
  • When patient reports to the clinic the adherence team and clinician informs him/her of their results and what it means, and EAC is commenced.
  • For those whose phones go unanswered physical tracing is done.
## Project Summary

**What are we trying to accomplish?**

**Overarching Goal**

Patients with high VL attending EAC timely.

**AIM Statement**

Decrease percentage of patients with high VL not attending EAC within 30 days of receiving results from 47.7%, to 10% by March 2019.

**Metric**

\[
\text{Metric} = \frac{\text{# of patients with HVL not attending EAC within 30 days of receiving results}}{\text{Total # of patients with HVL results}} \times 100
\]

**How will we know if a change is an improvement?**

**What change will we make that will result in an improvement?**

**Intervention**

Restructure the patient notification process

1. Shorten TCA to within 30 days for all VL patients
2. Call patients same day upon receipt of HVL results, and physical tracing for those whose phone calls don’t go through after three attempts in a week.
This project is about improving follow up of patients with HVL not attending EAC within 30 days. As a result of these efforts, we will achieve timely attendance of EAC for clients with HVL.

It’s important because we are concerned about:
- Patients with HVL missing timely EAC will impact on our suppression rate.

Success will be measured by showing improvement in:
- % of patients with HVL attending EAC within 30 days.

What we need from you –
- We would like to cascade lessons learnt to include other departments i.e. our TB program and your collaboration and ownership of the process to make part of our QI activity.
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>
<tbody>
<tr>
<td>Clinicians booking the client according country guidelines</td>
<td>Book in the EMR</td>
<td>Clinicians</td>
<td>Continuous</td>
<td>EMR</td>
<td>Reduced missed opportunities</td>
</tr>
<tr>
<td>Patients show up for viral load</td>
<td>They are grouped, confirmed for VL booking and escorted to the lab</td>
<td>Triage staff</td>
<td>1 hour</td>
<td>Viral load request form, viral load diary</td>
<td>Enter the MFL code with client ID in the order forms</td>
</tr>
<tr>
<td>Sample collection and processing</td>
<td>Samples processed and store in the freezer for a week then shipped after remote log in with sample manifest</td>
<td>Lab team</td>
<td>3 hours</td>
<td>Viral load shipment log and Viral load request forms</td>
<td></td>
</tr>
<tr>
<td>Process Step</td>
<td>What Happens?</td>
<td>Who is responsible?</td>
<td>Duration</td>
<td>Forms/logs</td>
<td>Opportunity for Improvement</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sample transport</td>
<td>Sample transported to NHRL every Monday</td>
<td>Designated driver</td>
<td>30 minutes</td>
<td>Viral load request form, Shipment manifest form</td>
<td>Sample collection twice per week</td>
</tr>
<tr>
<td>Viral Load testing</td>
<td>Sample verified and tested</td>
<td>NHRL lab technologists</td>
<td>10 working days</td>
<td>Shipment form, Receiving log, Results dispatch log</td>
<td>Communicate the reason for no results and delayed results.</td>
</tr>
<tr>
<td>Result feedback and patient management</td>
<td>Lab receives results, verifies and flags high viral loads.</td>
<td>Lab in charge and adherence nurse and clinician</td>
<td>30 minutes</td>
<td>high viral load register, Batch summary forms, viral load tracking log, EAC register</td>
<td>Improve lims server availability, Patients getting results within 30 days.</td>
</tr>
</tbody>
</table>
### Process Mapping

#### The First Step Towards Improvement

*(Show your process table. Provide sufficient detail of the entire process. Highlight the area/s for 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>
<tbody>
<tr>
<td>Result feedback and patient management</td>
<td>Upon receiving HVL results the adherence team makes entries of the results in EAC register and shares the same list with Viremia clinic focal lead, then make calls to inform patients of their results and the need to visit the clinic as soon as possible for EAC to be initiated. It was noted that this was not happening as many clients had enough refills and so no need of visiting the clinic hence the need to shorten TCA, and develop an SOP for calling patients back for EAC</td>
<td>Adherence team lead</td>
<td>Within the day of results receipt</td>
<td>EAC register, Viremia register</td>
<td>Information relaying to improve</td>
</tr>
</tbody>
</table>
• Gap (Problem Statement):

“Patients with high VL not attending EAC timely, within 30 days”.
• **Voice of Customer (VOC)**
  • Who is your customer?
    • Our customers were Patients on ART
    • Yes the right customers were selected
  • Tool used to collect the VOC
    • We used a Questionnaire
  • Collection Process
    • Sample size was 146
    • Distributed within a period of 30 days.
    • Filled questionnaires dropped by individual patient anonymously at a designated box at the reception
  • Results (Display)
  • What did you learn? How did you apply what you learned in your intervention?
Define Measure Analyze Improve Control

• Results (Display)

• “Unaonaje Huduma Zetu Ki Jumla?” (How are our services)  
n=146

<table>
<thead>
<tr>
<th>Questions</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mbaya sana</td>
<td>0.7%</td>
</tr>
<tr>
<td>Mbaya</td>
<td>4.8%</td>
</tr>
<tr>
<td>Nzuri</td>
<td>45.2%</td>
</tr>
<tr>
<td>Nzuri sana</td>
<td>33.6%</td>
</tr>
<tr>
<td>Bora</td>
<td>13.7%</td>
</tr>
<tr>
<td>No response</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
"Ni Sehemu Gani ya Huduma Inachukua Muda Wako Sana?" (Which service point is taking long to get served)

$n = 146$

<table>
<thead>
<tr>
<th>Question</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwa Meza (Triage)</td>
<td>21.9</td>
</tr>
<tr>
<td>Kwa Pressure (Nurse)</td>
<td>19.9</td>
</tr>
<tr>
<td>Kwa Daktari (Consultation)</td>
<td>18.5</td>
</tr>
<tr>
<td>Kwa Laboratory (Laboratory)</td>
<td>11.6</td>
</tr>
<tr>
<td>Kwa Dawa (Pharmacy)</td>
<td>9.6</td>
</tr>
<tr>
<td>Blank</td>
<td>1...</td>
</tr>
</tbody>
</table>
• Results (Display)

“Unajua Umuhimu wa Kupima Kiwango Cha Virusi Mwilini?” (Do you the Importance of Viral Load test)

n=146

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hapana</td>
<td>2.7%</td>
</tr>
<tr>
<td>Ndio</td>
<td>94.5%</td>
</tr>
<tr>
<td>Blank</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>No</th>
<th>Yes Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hapana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ndio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blank</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Results (Display)

“At what time would you like to have your viral load sample to be collected?”

n=146

- 93.8% at 8 am
- 5.5% at 2 pm
- 0.7% blank

Question: "Ungependelea Wakati wa Kutolewa Damu ya Kupima Kiwango cha Virusi Iwe Wakati Gani?"
“Ungependelea tufanye marekebisho wapi?” (Which department would you like us to improve on)

n=146

- Consultation rooms
- Pharmacy
- Blank
- Kid naa
- Triage
- Kid meza
- Kid pressure
- Hakuna
- Lab
- None
- Add more
- Differentiated Care Module (Express)

Percentage:

- Consultation rooms: 36.3%
- Pharmacy: 9.6%
- Blank: 7.5%
- Kid naa: 8.2%
- Triage: 8.2%
- Kid meza: 8.2%
- Kid pressure: 4.8%
- Hakuna: 8.2%
- Lab: 6.8%
- None: 0.7%
- Add more: 0.7%
- Differentiated Care Module (Express): 8.9%
• **Voice of Customer (VOC)**
  - What did you learn? How did you apply what you learned in your intervention?
    - Team work was essential
    - Patients were receptive about the process

• **Challenge**
  - Coming up with the relevant questions, i.e. the language, unbiased questions.
- Metric Selected

\[
\text{# of patients with HVL not attending EAC (within 30 days) of receiving results} \\
\text{Total # of patients HVL results received} \times 100
\]

- Baseline Data
  - 47.7% (were not attending EAC within 30 days)
• **Data Collection Process**
  - How many data points for baseline?
    - We had seven data points
  - Timeframe of data collection. How frequently did you collect your data?
    - We were collecting our data on a monthly basis due to TAT and EAC timeframe (Enhanced Adherence Counseling EAC)
  - baseline & project data?
    - Baseline 47.7%
    - Ongoing 8%

• **Data Analysis**
  - How did you interpret your data?
    - Using a run chart
    - What did you learn about the magnitude of the problem?
Lessons Learned

Successes

Just do it completed
Full support by the management.
Good Teamwork
Completed voice of customer
Communication platform.
Sensitization to the entire team.

Challenges/Solutions

• Holding meetings on time
  • Prepared a meeting rota
• Having every team member attending meeting was a challenge
  • Ensured that the timing was appropriate for every member
• Developing Aim statement.
  • We brainstormed and consulted faculty member and TA
• No funds for the project
  • We got support form our management
Results not shared within departments consistently

Delay in notifying patients with high viral load results

Prescribing TCA’s more than 30 days even for VL patients

High VL clients not attending EAC within 30 days upon result release

Political instability
Unscheduled visits

No SOP’s on VL information
Guideline not adhered to

Printers
Internet
Computers
Power surge/ failure
Stationery
• **5 WHY on People**

• **Results not shared within departments consistently**
  - **WHY**-Anyone could print results and update their own log, register, and EMR
  - **WHY**-There was no focal person
  - **WHY**-There was no SOP on results sharing

• **Delay in notifying patients with high viral load results**
  - **WHY**-Clinicians never used to sensitize patients to come for VL results within 30 days
  - **WHY**- There was no focal person to make follow up
  - **WHY**- Result management was not standardized
  - **WHY**- Guidelines were not followed

• **Prescribing longer TCA’s even for VL patients**
  - **WHY**- Clinicians had not been sensitized on shortening TCA’s for VL patients
  - **WHY**- There was no SOP on VL patient bookings
IMPACT / EFFORT GRID  A Tool for Prioritizing Opportunities

Just Do It
Avoid use of white out in the EAC diary
Print out legible results from LIMS
Use of the MFL in the lab order forms

Projects - Detailed planning and work
Categorized into three:
a) Too many writing to be done (Log books)
b) Follow up of patients with (HVL and those need a redraw)
c) Tracking of missing results (Lab and NHRL), deficient sample referred process (Mismatch)
We settled for B, Follow up of patients

Just Do It if Impactful

Maybe some day

Easy to Do

DIFFICULT TO DO

IMPROVE

ANALYZE

MEASURE

DEFINE

IMPACT

MAJOR IMPROVEMENT

MINOR IMPROVEMENT

EFFORT
Define

Measure

Analyze

Improve

Control

Just Do It 1
PID (ccc #) should be complete with the MFL code

Facility staff not to use white-out

LIMS summary report format should be eligible and printed by batch

Results not shared within departments consistently

Just Do It 2
5S - BEFORE

5S - AFTER

Define  Measure  Analyze  Improve  Control
5S - BEFORE

5S - AFTER

Define → Measure → Analyze → Improve → Control

5s Audit Score

% Scores

<table>
<thead>
<tr>
<th>Score</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sort</td>
<td>20</td>
</tr>
<tr>
<td>Set</td>
<td>20</td>
</tr>
<tr>
<td>Shine</td>
<td>20</td>
</tr>
<tr>
<td>Standardize</td>
<td>40</td>
</tr>
<tr>
<td>Shine</td>
<td>20</td>
</tr>
</tbody>
</table>

% Scores

<table>
<thead>
<tr>
<th>Score</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sort</td>
<td>60</td>
</tr>
<tr>
<td>Set</td>
<td>60</td>
</tr>
<tr>
<td>Shine</td>
<td>60</td>
</tr>
<tr>
<td>Standardize</td>
<td>60</td>
</tr>
<tr>
<td>Shine</td>
<td>60</td>
</tr>
</tbody>
</table>
Before

Prescribing longer TCA’s even for VL patients

After
Define
Measure
Analyze
Improve
Control

Visual Management
• Small Test of Change (PDSA #1)

- **ACT**
  - Adopt the shortened TCA to 30 days for all VL clients

- **PLAN**
  - LARC team lead to sensitize Clinicians to shorten TCA for VL patients to 30 days.

- **STUDY**
  - Reduce the number of days clients missed attending EAC from 20% to 9% between Aug – Sept 2018

- **DO**
  - Clinicians prescribing 30 days drugs for VL patients
• Small Test of Change (PDSA #2)

- We will adopt calling, and will be modified with alternatives
- The response after the calls increased from 9% to 10% between Sept – Oct 2018
- The Adherence nurse to notifying patients on the same day upon receipt of HVL results
- The adherence nurse calls all the clients with HVL immediately
**Intervention – ‘After State’ Process Map**

**Define**
- Clinician books clients for VL according to country guidelines.

**Measure**
- Triage staff confirms bookings and escorts patients to the lab.

**Analyze**
- Sample collection and processing, sample labelling, and lab order form filling by lab staff and clinician.

**Improve**
- Clinician able to view results timely.

**Control**
- Remote logging of samples and sample manifest printing.
- Lab verifies logged samples against physical samples and package for shipping with two copies of manifest.

**New Process**
- Clinician books clients for VL according to country guidelines.
- Triage staff confirms bookings and escorts patients to the lab.
- Sample collection and processing, sample labelling, and lab order form filling by lab staff and clinician.
- Clinician able to view results timely.

**Process Improvement**
- Training clinicians on shortening TCA to 30 days.
- Patient sanitization on shortened TCA and importance of VL monitoring.
- SOP for calling patients using a script developed and shared to all adherence team.
- Call patients immediately upon receipt of HVL results.
- Physical tracing for those whose phone calls don’t go through.

**Update results in EMR by SI team done timely now as we are working with a 30 days’ timeline.**

**Adherence team**
- Now contacts patients to visit facility to discuss results with clinician and adherence team and EAC initiated.
- Adherence makes physical contacts for all unanswered calls.

**SOP for calling patients back for MC, developed, shared and posted on wall**

**Results management improved by having lab print the results in triplicates and share with SI for EMR update and adherence team for HVL contact for EAC.**

**Lab flags HVL and shares with viroemia clinic lead, and viroemia lead confirms the same list with adherence**

**NHRL LAB ANALYSIS**
- NHRL staff receives the samples and verifies the sample quality and then signs and stamp one copy of manifest that is sent back to the facility.
- Analyses and releases results back to facility via LIMS and website.
Intervention – ‘Before’ State Process Map

- **Define**
  - Clinician books clients for VL according to country guidelines in EMR
  - Triage staff confirms bookings and escorts patients to the lab

- **Measure**
  - Clinician able to view results and the HVL patients go unnoticed for months due to long TCA

- **Analyze**
  - EAC booking is dependent on clinicians’ keenness and patient availability as guideline on EAC not followed
  - Update results in EMR by SI team not done timely
  - Results feedback for patient management anyone can print as no designated focal person appointed

- **Improve**
  - Sample collection and processing, sample labelling, and lab order form filling by lab staff and clinician
  - Remote logging of samples and sample manifest printing. Lab verifies logged samples against physical samples and package for shipping with two copies of manifest
  - NHRL staff receives the samples and verifies the sample quality and then sign and stamp one copy of manifest that is sent back to the facility.
  - NHRL staff analyses and releases results back to facility via LIMS and website

- **Control**
  - Sample collection and processing, sample labelling, and lab order form filling by lab staff and clinician
Tools for the Project
• Data Display

Run chart for EAC Clients attendance beyond 30 days for the Period Jan 2018 to March 2019
The project baseline of 47.7% was for a 6 months period.

Intervention began with PDSA 1.

As at now there has been delay in TAT and EAC for January patients began in Feb end this is due to transitioning to new regimen.
Challenges

• Holding meetings on time
• Having every team member attending meeting was a challenge
• Developing Aim statement.
• No funds for the project

Address challenges

• Prepared a meeting rota
• Ensured that the timing was appropriate for every member
• We brainstormed and consulted faculty member and TA
• We got support form our management
Lessons Learned

• Inter departmental communication and collaboration is very important.

• Meetings are vital and social media came in handy as a means of dispersing information and updating each team member.

• The use of the learning board kept us informed and also helped educate the rest of the staff members and visitors to.

• It is scale able to other departments.

• Use of tools makes it easy to implement the project.

• QI is iterative
## Action Plan

<table>
<thead>
<tr>
<th>TOPIC/GOALS</th>
<th>ACTION ITEM</th>
<th>BY WHO?</th>
<th>BY WHEN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fastrack VL and TB patients</td>
<td>Escort TB patients to the Lab</td>
<td></td>
<td>Daily</td>
</tr>
<tr>
<td>Created more space for the learning board</td>
<td></td>
<td></td>
<td>November</td>
</tr>
<tr>
<td>PDSA 2</td>
<td>Routine updates</td>
<td></td>
<td>December</td>
</tr>
<tr>
<td>Revised schedule for the meetings</td>
<td>Dates and time</td>
<td></td>
<td>January</td>
</tr>
<tr>
<td>Updating the learning and just do it</td>
<td>Routine updates</td>
<td></td>
<td>Monthly</td>
</tr>
<tr>
<td>Notifying patients with high viral load results</td>
<td>Routine</td>
<td></td>
<td>Same day of viral load results received</td>
</tr>
</tbody>
</table>
# Control Plan

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Viral Load Results Interpretation and Patient Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Owner</td>
<td>Project Coordinator</td>
</tr>
</tbody>
</table>

**Process Step:** Shortening Appointments to 30 days and Patient Notification Is there a vulnerable step that may revert to the “old way” over time? Yes. Giving longer appointments of more than 30 days, and delayed patient notification.

**Output:** Immediate notification of high viral load results and shortened appointments.

**Metric** – Define the metric: The number of high viral load patients attending EAC within 30 days of results received over the total number of high viral load results received.

**Acceptable Range** – From 47% to 10%

**How measured** – Data Collection Plan: Monthly data collection.

**Control or Reaction Plan**
If the metric goes out of range, what will be done? What is the first step?
We will go back to our PDSA and new process map and see where the gap has come from.

**Accountability**
- Who is responsible for measuring – Data Manager
- Where is the measure reported – Facility LARC Team Members and Learning Board
- To whom is it reported – Project Coordinator
- Who is ultimately responsible – Lab Technical Assistant