The CQUIN Learning Network

Lighthouse ALUP and POC VL: Innovations and Experience

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HIV LEARNING NETWORK
The CQUIN Project for Differentiated Care

ICAP
GLOBAL. HEALTH. ACTION.
Columbia University
Mailman School of Public Health

“THE LIGHTHOUSE”

- WHO recognized Centre of Excellence, works in close coordination with the Ministry of Health
- First specialist centre in Malawi for the care and support of people living with HIV and AIDS
- Registered as a public Trust in 2001

The Lighthouse "Differentiated Care"

Based on the principle that "not one size fits all" but that patients have differing needs and requirements.

Examples:

- ***ALUP Package of Care***
- ***Point of Care (POC) Viral Load Testing***

The Lighthouse "ALUP Package of Care"

Lighthouse uses a threshold of CD4 < 100 cells/ml

Interventions:

- *Diagnostic:* Screen for disseminated TB (urine-LAM) and disseminated Cryptococcal infection (serum CrAg)
- *Prophylactic:* In patients with CD4 counts < 100 the REALITY trial showed that a bundle of prophylactic measures can significantly reduce early mortality

CD4 count done for
-any ART initiation ☐
-failing ART patient with high VL ☐
-sick looking patient on ART ☐

Ask and look for:

-Weight loss (LOW)
(>10% or BMI <18.5)
-Night sweats (NS)
-Chronic cough
-Shortness of breath (SOB)
-headache, new seizures
-oral candidiasis
-KS on legs or palate
-frequent hospital admission
(>1 admission in 3 months)
-general weakness
(needs assistance to walk)

Lighthouse-
ALUP Flow Chart 2.0

Date: _____
Pat. Name:_____
Pat ID:_____
Clinician:_____

CD4
_____

<100 OR
100-200 and patient "**sick**" ☐

☐ ART ☐ CPT

Albendazol 400mg od 1/7

Azithromycin 500mg od 3/7

Weight: _____
Height: _____
BMI:_____

>17 → **STOP!**

<17 → TF

CrAg (Serum)
- neg → **STOP!**
- pos → LP and CrAg (CSF)
  - neg → Fluco 800 mg od 2/52 then Fluco 400 mg od 8/52
  - pos → hold ART, admit to KCH, provide Ampho for 1/52

Urine LAM
- pos → TB treatment
- neg → Cough/LOW/NS absent → INH 300 /Vit B6 25 mg 3/12
- neg → LOW/NS pos → FASH
  - pos → TB treatment
  - neg → INH 300 /Vit B6 25 mg 3/12

Cough/SOB pos → Do as appropriate:
1) Sputum Xpert ☐
2) Treatment with amoxyl 500 mg tds 5/7 + azithromycin 500 mg 3/7 and review ☐
3) CXR ☐

- TB proven or probable → TB treatment
- TB improbable → INH 300 /Vit B6 25 mg 3/12

KS on legs, mouth, …
- neg → **STOP!**
- pos → Refer for chemotherapy

Refer for "Fundoscopy CMV retinitis screen"
- CMV neg → **STOP!**
- CMV pos → Gancyclovir i.o.

How immunosuppressed are our patients?

- Results from Lighthouse 1.1.2017-15.4.2017
  (approx. 100 new initiations/month, and 4,000 visits/month)

- Total CD4 counts done 424 (= approx. 120/month)
  - For new initiations: 236 patients (55%)
  - 1-6 month on ART: 7 patients (2%)
  - 6-12 month on ART: 15 patients (4%)
  - >12 month on ART: 119 patients (32%)

- New initiations: 236 => **CD4>100: 181 (77%) / CD4<100: 55 (23%)**

WHO Stage	>100	<=100
I or II	**122**	**27**
III or IV	**30**	**19**
Total	**152**	**46**

Lighthouse ALUP

- In depth analysis of 66 patients with CD4 count <100:
  - No O.Is (CPT, Albendazole, Azithromycin, IPT) 37 (56%)
  - TB diagnosed 14 (21%)
  - Cryptococcemia 8 (12%)
  - Cryptococcal meningitis 6 (9%)
  - KS 1 (1%)

Viral load monitoring

- Malawi's National HIV program relies on monitoring of Viral Load (VL) to monitor treatment success
  - This is "routine VL" monitoring, "targeted VL"
- Current VL turn around time is ~ 3 months
- Poses a substantial problem when dealing with targeted sample results, which may entice an immediate clinical action

Point of Care Viral Load Monitoring

- Support from from the Bill & Melinda Gates Foundation (BMGF) enabled Lighthouse to procure platforms and cartridges for POC VL tests (GeneXpert HIVquant)
- The POC-VL machine allows Lighthouse to process 10-20 VL samples per day
- This has changed the approach to “failing” patients

Lighthouse POC VL

- The POC-VL test is requested using a dedicated request form ("blue forms")
- On this form the clinician specifies amongst other data the reason for the test as well the time interval to receiving the result and the action that he or she takes in response to the result.

Lighthouse POC VL report for Jan - May, 2017

Current results:

General POC tests done

	Lighthouse
Total test –machine status	581
Successful	537 (92%)
Error or aborted	44 (8%)
Of those successfully, Sample type	537
POC-VL	529 (99%)
POC-EID	8 (1%)

Lighthouse POC VL

POC-VL tests with requests documented

Patients with available POC-VL request information ("blue form")	359 (62%)
Clinics sending POC-VL samples	
Lighthouse Clinic	259 (72%)
KCH ward	29 (8%)
N-CAP	71 (20%)

Comment: The proportion of patients with available data on the reasons and actions is lower than the total number of tests run. This is expected in a routine operations as forms have multiple possibilities to go "missing". The proportion of 62% at Lighthouse lies in the range we may have expected.

Lighthouse POC VL

VL status for all ***"blue forms"*** which were returned for data entry.

VL Status	Low (< 1,000 copies)	High (>1,000 copies)	Total
VL results	100	144	244

Lighthouse POC VL

"Action" taken on high result	LH (n=144)
Referral for adherence	15 (10%)
Switch to 2nd line	87 (60%)
No action	3 (2%)
Other	3 (2%)

POC VL: *Time from ordering VL to "Action taken" @ Lighthouse*

Action taken	Low VL result	High VL result	All
Same day	43 (66%)	70 (69%)	113
Next day	13 (20%)	16 (16%)	29
Later	9 (13%)	15 (14%)	24
Total	65	101	166

Comment: Out of 359 with blue forms, 166 had time and date of ***"action taken"*** documented

Lighthouse POC VL

Problems and way forward

- The biggest operational problem lies in the supply chain management of cartridges. As LH is the only clinic in the country doing the test on a larger scale, the supplier often has no stock available in the country
- Initially the expected number of tests to purchase was unclear, so it was difficult to estimate the demand. Internal slow procurement process also added to these obstacles.
- Now in a better position to predict the expected demand, we expect this problem to be less relevant in the future*; currently a 6months supply has been received.*

Lighthouse POC VL

The main problem from an investigational side is the low return of forms.

- Solution: The data manager will generate a list of patients who had a test done and the files of the patients will be assessed as it is assumed that a substantial number of forms were “filed” away without recording.

Thank you!