



Advanced HIV disease care at Lighthouse clinics in Malawi - How far have we come?

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HIV LEARNING NETWORK
The CQUIN Project for Differentiated Service Delivery

L I G H T H O U S E

Objectives of the presentation

- Describe the setup of Lighthouse Trust clinics in Malawi and the role AHD care and other DSD play within the clinics
- Highlight the extent of AHD services currently delivered in Centers of Excellence and in supported districts
- Share some thoughts on the M&E of AHD services and the importance of training in this field

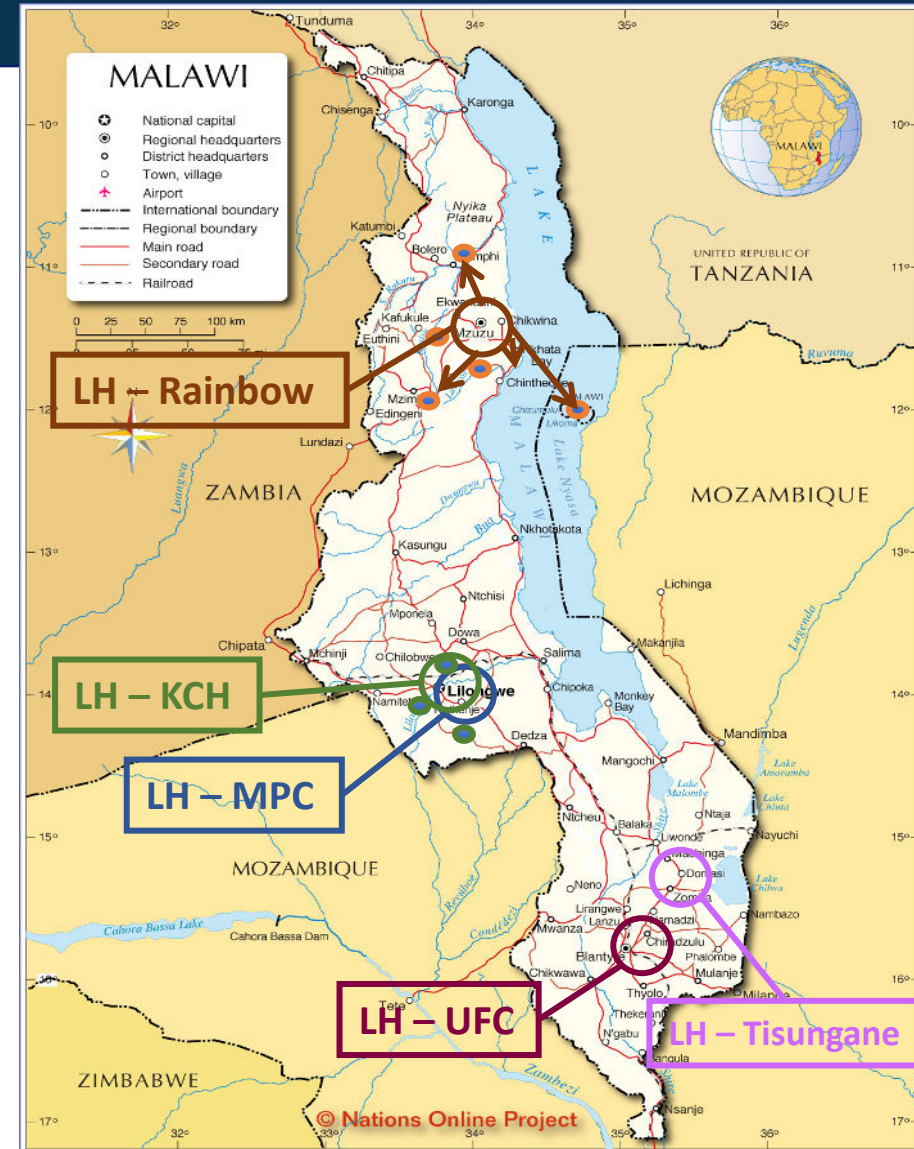
Lighthouse Clinic Trust operates five large referral level HIV/TB clinics and supports 5 districts in Malawi's North

Lighthouse clinic at **Kamuzu Central Hospital** in Lilongwe was founded in **2001**, is funded by **PEPFAR** through **CDC** since **2003** and was recognized as **Centre of Excellence** for HIV care in **2004** by the WHO

Currently Lighthouse Trust established Centres of Excellence in all Malawian referral hospitals:

- **Kamuzu Central Hospital, Lilongwe (LH-KCH)**
- **Bwaila Hospital, Lilongwe (LH-MPC)**
- **Queen Elisabeth Central Hospital, Blantyre (LH-UFC)**
- **Zomba Central Hospital (LH-Tisungane)**
- **Mzuzu Central Hospital (LH-Rainbow) – under development**

The Centres of Excellence treat more than **60,000 HIV patients with ARVs** and including other supported spoke sites this number exceeds **130,000**



Integrated and differentiated care models at Lighthouse

All CoE sites offer **integrated service delivery**:

- Comprehensive HIV care
- Comprehensive TB care
- Kaposi's sarcoma diagnosis and treatment
- Cervical cancer screening and treatment (cryotherapy/thermococoagulation)
- Nutritional and psychosocial counselling and support
- **Differentiated service delivery**
 - 6 multi-monthly refills
 - Teen clubs
 - Nurse led-Community ART program
 - Advanced HIV disease care

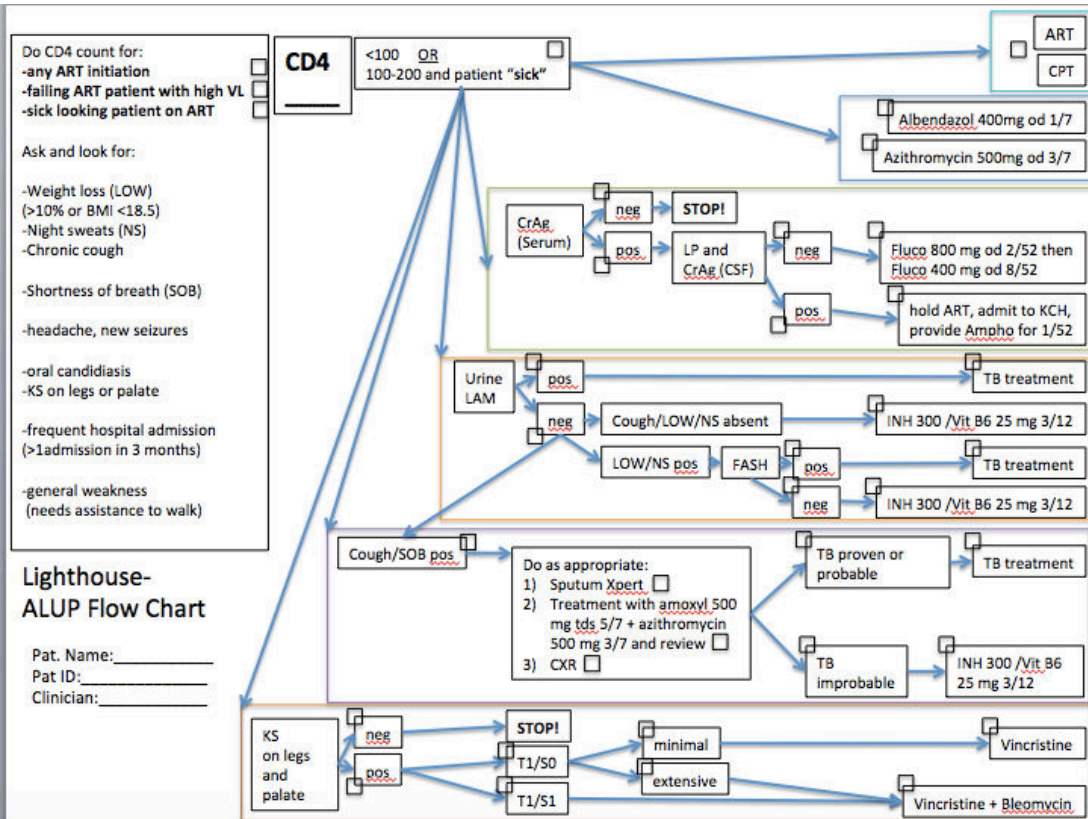


Advanced HIV care at Lighthouse KCH was established in 2016

After results of the REALITY trial were published the “ALUP algorithm” was implemented (which can still be found the AHD toolkit –CQUIN website)

Patients initiating ART or failing on ART are screened with CD4 and subsequent CrAg and LAM reflex POC-test if results < 200 cells/ml (initially < 100 cells/ml)

CoE clinics are equipped with point of care labs for side effects management (Crea, LFT), POC-VL for “targeted VL” and CD4 point of care machines



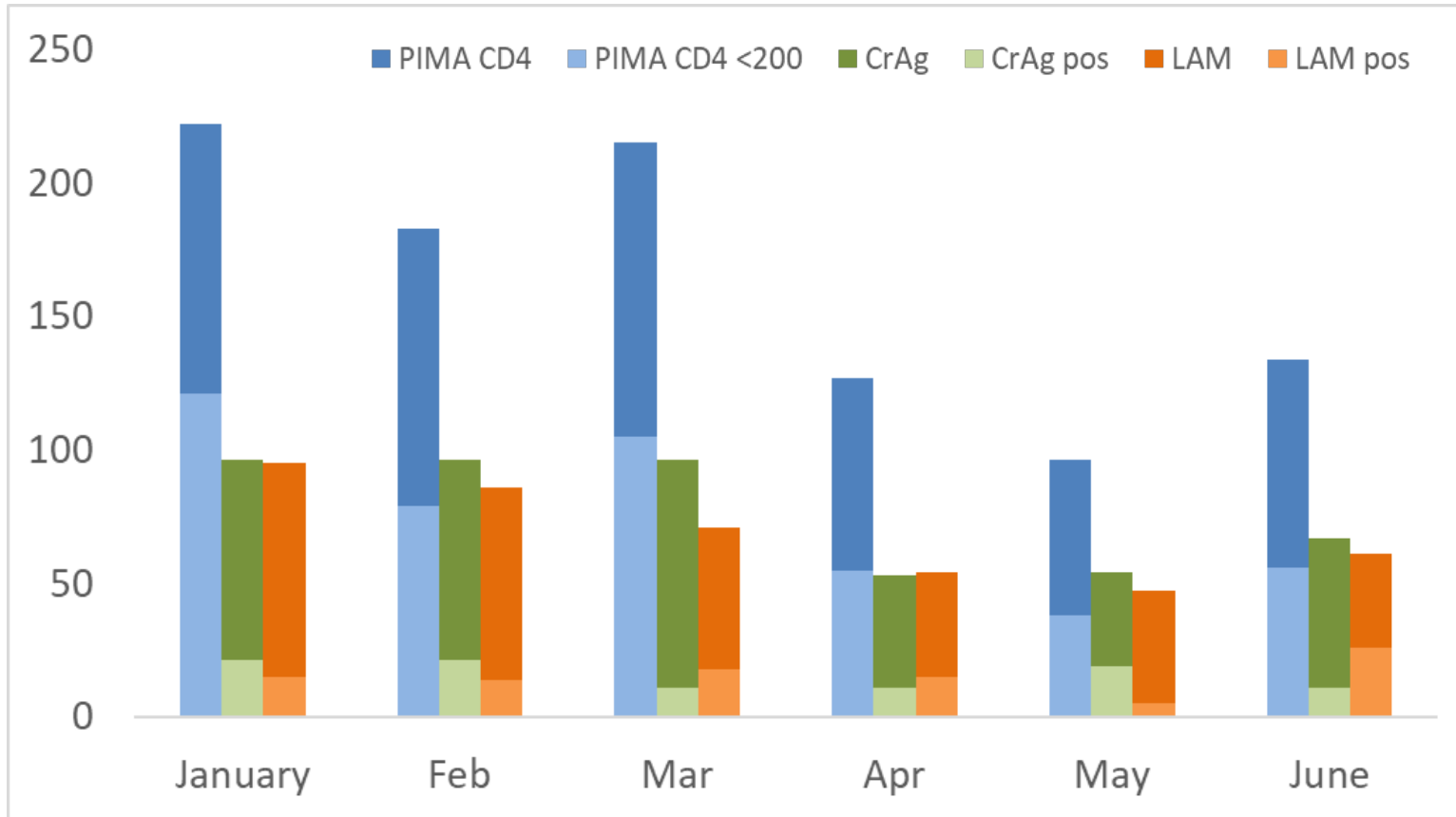
ALUP = Advanced, Late, Unstable Patients

LH supports AHD inpatient care in referral hospitals where AHD is frequent

- Extensive inpatients HIV testing services
- Provision of all AHD tests in the ward
- Treatment advice and consultation for the teams
- GeneXpert MTB/RIF as well as CXR facilities are available through the central hospitals
- Ultrasound to diagnose EPTB (FASH scan) is available in all clinics and used for in and outpatients



Trend of Lighthouse KCH AHD services 2020



- PIMA CD4 is regularly used and yield of AHD fluctuated between 40 and 54%
- The number of CrAg and LAM tests approx. mirrors the AHD yield
- The average yield of the reflex-tests was
 - CrAg 20% (range 11-35%)
 - LAM 22% (range 11-42%)
- The changes due to COVID in April onwards reduced service utilization significantly

AHD lab data – Comparison of the referral level clinics

	PIMA CD4	PIMA CD4 <200	CrAg	CrAg pos	LAM	LAM pos	Yield%	CD4	CrAg	LAM
KCH-LH	977	454	462	94	414	93	46,5%	20,3%	22,5%	
Bwaila-MPC	1276	360	343	15	356	41	28,2%	4,4%	11,5%	
QECH-Umodzi	1474	598	601	42	637	72	40,6%	7,0%	11,3%	
ZCH-Tisungae	881	220	317	33	355	56	25,0%	10,4%	15,8%	
MCH-Rainbow	535	167	166	6	236	57	31,2%	3,6%	24,2%	

- The large Lighthouse clinics did 5143 CD4 (35% <200), 1889 CrAg (10% pos) and 1998 LAM (16% pos) tests from January to June 2020
- The proportion of patients with AHD differ significantly - highest in LH and Umodzi based in the larger Lilongwe KCH and Blantyre QECH referral hospital
- LH KCH Lilongwe has substantially more CrAg positives while this is very low in Bwaila-MPC (which is mainly a “walk-in” clinic) and Rainbow MCH in the North
- Also LAM positivity is higher in the LH KCH – but surprisingly also high in Rainbow clinic in the North which geographically has a lower TB prevalence in general

AHD implementation in Northern District Hospitals January-June 2020



CD4 65 (41%) – CrAg 55 (16%)
– LAM 70 (11%)

**CD4 535 (31%) – CrAg 166 (4%)
– LAM 236 (24%)**

CD4 41 (32%) – CrAg 18 (6%)
– LAM 41 (15%)

CD4 116 (37%) – CrAg 40 (8%)
– LAM 51 (20%)

CD4 0 (-%) – CrAg 0 (-%)
– LAM 0 (-%)

- Four of five district hospitals operate ADH diagnostics
- Although absolute numbers are smaller in district hospital than in the **referral hospital** the yield is not negligible
- “Remote districts” (Likoma) still pending implementation
- It is planned to roll-out AHD services (PIMA/CrAG/LAM) 13 more rural hospitals in the near future (COVID permit)

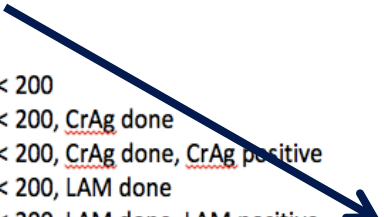
Some considerations on M&E of AHD

- AHD services need to be monitored – but health care workers in ART programs already suffer from overburden of multiple registers
- **“Registeritis = every pet initiative in the clinic needs a special, new register” – DHA estimates that there are an endless line of more than 60 registers for the HIV program alone – “severe registeritis”**

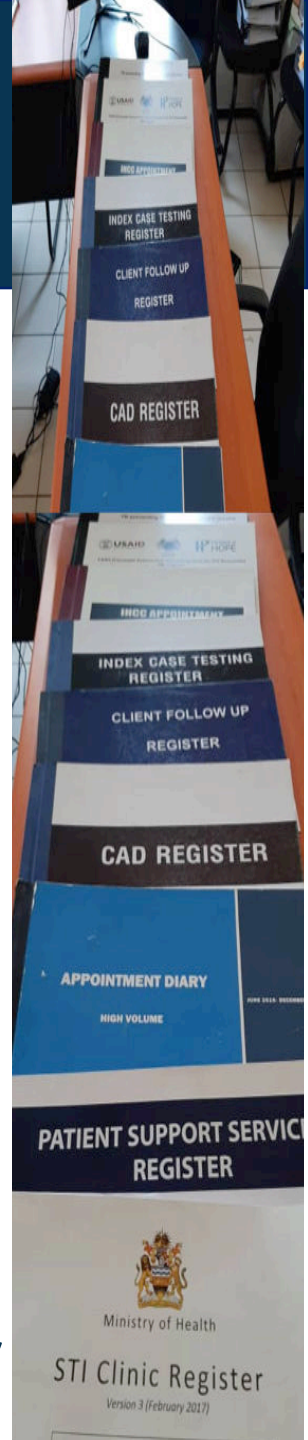
- LH is currently developing a reasonably comprehensive AHD monitoring system from **existing** registers and especially from **existing** electronic data systems (e.g. EMRS, lab machines)
- Transitions between services delivery points e.g. lab-clinic, clinic-hospital make it hard to capture patient data. Therefore we are currently ending our AHD cascade at the CrAg/LAM test **results** (not LP done, treatment given, etc...)

1) AHD cascade for newly initiating in CoEs (excluding inpatient data, excluding patients on ART tested CD4)

ART_NEW
CD4 test done in ART_NEW
CD4 test done in ART_NEW < 200
CD4 test done in ART_NEW < 200, CrAg done
CD4 test done in ART_NEW < 200, CrAg done, CrAg positive
CD4 test done in ART_NEW < 200, LAM done
CD4 test done in ART_NEW < 200, LAM done, LAM positive
(NB: On demand this data should be available disaggregated by sex and age)

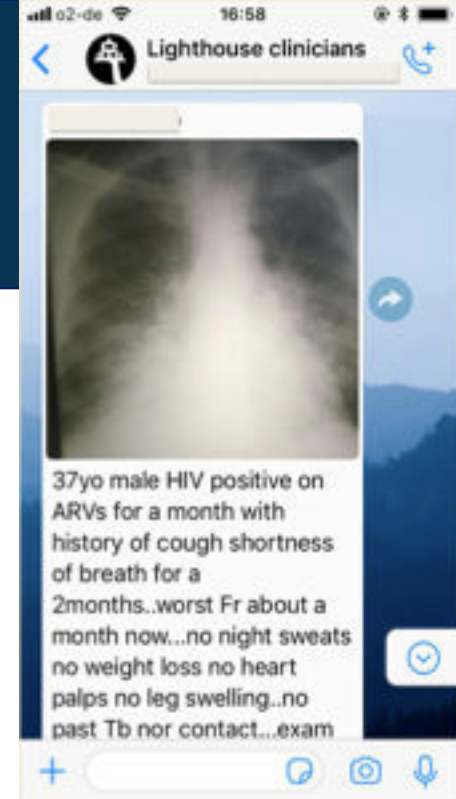
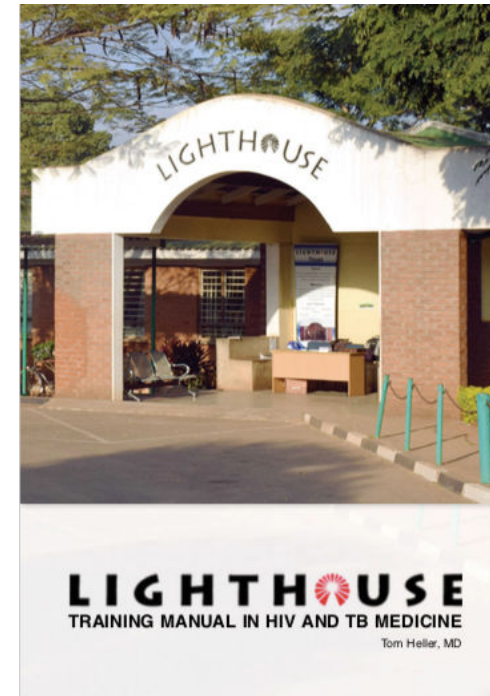


- Data quality is a difficult issue and our clinic and M&E teams are working on this actively



Training considerations for AHD

- Provision of tests is important – but it is equally important to train clinicians and nurses to adequately act upon the results
- Since LH operates clinics far apart, basic telemedicine needs to play an important role
 - WhatsApp clinician group
 - ECHO sessions
- Development of training material for AHD is an ongoing priority for Lighthouse
 - Case manual
 - Chest X-ray manual



Assessment

Orientation PA, R marker visible.	Airway The trachea is central.	and dense.
Exposure Although the right side seems adequate, and intervertebral discs are visible behind the heart, the left side seems overexposed and almost non-diagnostic, as lung markings are not visible.	Breathing Upper and middle zone clear and symmetric on both sides. In the right lower zone, ill-defined opacifications are seen. The costophrenic angle on the right is blunted due to a moderate pleural effusion. Normal pulmonary vascular marks. No signs of pneumothorax.	Diaphragm and Chest Wall The diaphragms are clear. Right slightly higher than left. No free air below the diaphragm. Bones and chest wall unremarkable.
Inspiration Adequate. Nine to 10 posterior ribs visible.	Circulation Heart is not enlarged. Heart borders are clear. Aortic arch normal. Right hilum enlarged, abnormal in shape.	Extras (lymph nodes, etc.) Enlarged LN in the right hilum; no enlarged LN in aortopulmonary window, paratracheal, or subcarinal areas. Apices: normal. Behind heart: normal. Behind diaphragm: normal.
Rotation Not rotated.		

Unilateral pleural effusion in a young adult is highly suggestive of TB, even more so when lymphadenopathy is also present. A sputum sample should be sent for AFB stain, and also for GeneXpert MTB/RIF testing, if possible. As the cough was non-productive, it may be difficult to obtain more than saliva. TB treatment should be started even if sputum cannot be obtained.

Diagnosis and Management
Sputum was sent, and came back negative for AFB. GeneXpert testing was not done (the patient was HIV negative, and lab policy at the time allowed it only for HIV-positive patients). Based on clinical suspicion, empiric TB treatment was started, and the patient improved clinically.

Pearls
In this patient, a hypersensitivity reaction is seen, presumably due to primary TB. His immune system functions well, so the immune cells actively attack the mycobacteria. This leads to the inflammatory effusion (which contains very few MTB) and the enlarged hilar lymph nodes, as well as to the immunological "back" in the skin. The skin changes are called erythema nodosum, which is a hypersensitivity reaction in the skin due to immune stimulation by MTB.

Training Manual for HIV and TB Clinicians

Summary

- Lighthouse has a history of AHD care and in the large clinics algorithms are well established
- Proportion of AHD is high and yield of CrAg and LAM is significant
- AHD services can be successfully rolled out in districts and further decentralized services are planned
- M&E and training in AHD are important points of consideration- which should not be forgotten over the provision of the relevant tests

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