

## LIGHTHOUSE PROJECT ECHO®:

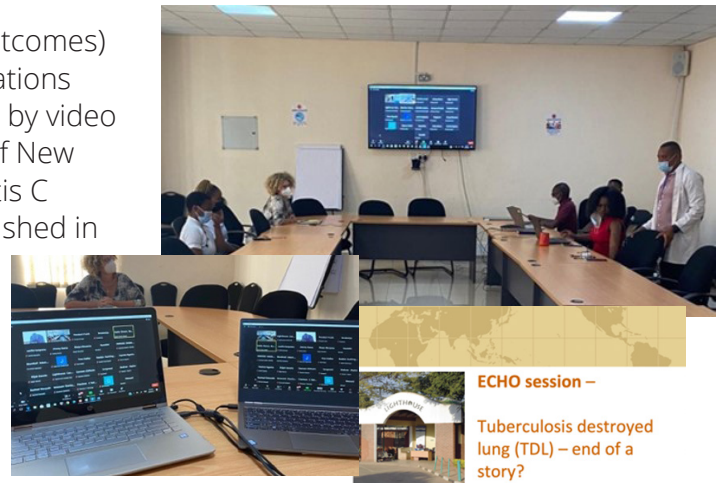
### CAPACITY BUILDING FOR COMPLEX HIV CARE AND TREATMENT

#### *Background*

Antiretroviral therapy (ART) was established as a powerful tool to prevent HIV morbidity and mortality. A decline in AIDS deaths from 71,000 in 2004 to 12,000 in 2020 was observed in Malawi<sup>1</sup> but despite this success, epidemiological models estimate that annual number of deaths among people living with HIV (PLHIV) will increase again and reach over 20,000 by 2025.<sup>2</sup> To curb this second wave of deaths, clinical expertise to provide the increasingly complex care required by an aging ART cohort is essential. Failing ART regimens, drug resistance development, non-communicable co-morbidities, and a still substantial rate of tuberculosis (TB) and advanced HIV disease are among the clinical problems for health care workers (HCWs). Continuing medical education (CME) for clinical officers (COs) and nurses, the main ART providers in Malawi, is of paramount importance. COs and nurses are trained for three years at College of Health Sciences or Nursing and are responsible for primary healthcare tasks including ART provision. HIV-related medicine is not a focal area in their curriculum, so HIV-specific training is essential for effective management of complex HIV patients.

#### **LIGHTHOUSE (LH) PROJECT ECHO®**

Project ECHO (Extension for Community Healthcare Outcomes) was developed to improve care for underserved populations using a hub-and-spoke approach of knowledge-sharing by video conferencing. The model, developed at the University of New Mexico and was initially shown to be effective in hepatitis C care in the United States (US), was subsequently established in various settings worldwide. ECHO was piloted at LH in November 2018. Since the emergence of COVID-19, mitigation measures have led to an increased dependence on remote trainings like ECHO, which has now become an integral part of clinical mentorship. Today, the LH Project ECHO has established itself as a standing weekly training event mainly covering HIV and TB related topics but as well leveraging the platform to address current relevant topics such as COVID and monkey pox. Sessions are conducted at the end of the workday on Thursdays to allow for provider participation without compromising patient care. The ECHO facilitator takes a few minutes for announcements, 25 minutes are dedicated to didactic presentations by an expert and 10 minutes for discussion. Finally, a clinical case is presented (10 minutes for presentation and 10 minutes for discussion and recommendations from experts). An IT officer attends each meeting to provide technical support.



LIGHTHOUSE



#### *LH Project ECHO Objectives*

- Provide a platform for sharing critical, timely, and life-saving information and data with HCWs in different locations
- Facilitate peer-to-peer interactions among local, regional, and international experts using real-time, video-conferencing technology

## LH Project ECHO Participation

LH conducted 101 ECHO sessions between April 2020 and December 2022 with a total 6,396 participating HCWs. Participation per session fluctuated between 30 and 138 participants (averaging 64 participants/session). Most didactic presentations were grouped by themes (see *Table 1*); in between the series, individual topics and updates were covered. There were 95 clinical cases discussed during the sessions. The number of presentations per expert varied between single sessions by invited external speakers to a maximum of 27 by I-TECH-employed experts. Speakers presented from Malawi, South Africa, Uganda, United States, United Kingdom, and Germany.

**Table 1. ECHO Session Series and Participation**

Series Topic	Series Duration	# Sessions Per Series	# Participants per Series
COVID-19 Infection	30 Apr – 4 Jun 2020	6	410
Retention in ART Services	2– 30 Jul 2020	5	350
Advanced HIV Disease	13 Aug – 17 Sep 2020	6	415
Pediatric HIV	22 Oct – 26 Nov 2020	6	319
Basic Clinical HIV	14 Jan – 25 Feb 2021	7	306
HIV & Oncology	1 Apr – 6 May 2021	5	242
TB or Not TB	12 Aug – 7 Oct 2021	8	427
Aging ART Cohorts – Problems Ahead?	Nov – 16 Dec 2021	4	280
Liver, Kidney, and Heart Problems	10 – 31 Mar 2022	7	473
Mixed Topics from the Field (incl. Hep B)	2 Jun – 14 Jul 2022	6	574
HIV & Pregnancy	29 Sep – 10 Nov 2022	7	438

## LH Project ECHO Costs

Operational costs mainly consist of the working timeshare of the ECHO team (coordinator and IT support, approximately US\$50/session) and the internet data (approximately US\$15 for the hub and four participating institutional spoke sites). The time experts spend preparing the didactic presentations and being available during ECHO session is provided in kind and is therefore not quantified. With an average of 64 participants per session, the cost to LH is approximately US\$1.02 per participant per session.

Some participants at the hub and institutional spoke sites join sessions together as a group using video conferencing (1-6 participants per site); however, the majority of participants join using individual devices. The amount of data required to connect to one full ECHO session is 425MB, which equals approximately US\$1.20 per participant per session.

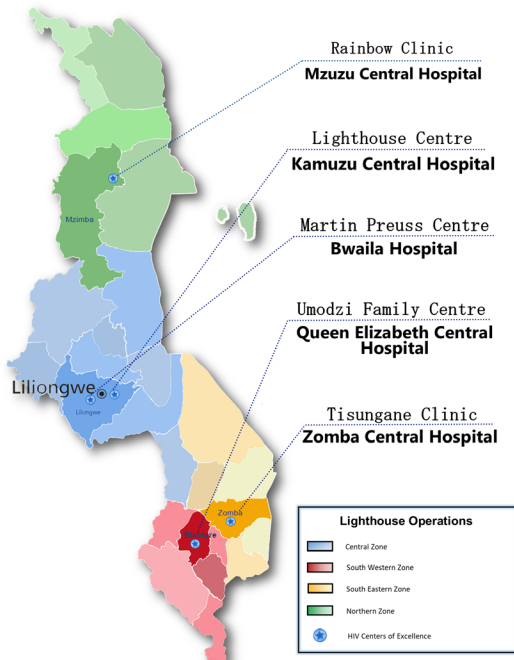
## SUMMARY OF FINDINGS

- 6,396 HCWs attended 101 ECHO sessions presented by local and international experts including I-TECH Technical Advisors.
- The operational costs for ECHO trainings of US\$1.02 for one hour per participant compare favorably to costs of other trainings conducted in our setting.
- Conventional training costs range from US\$7.30-15.30 per hour, depending on the location of the training. The provision of financial incentives, like sitting allowances and per diems, contribute to the higher costs of conventional trainings in Malawi. Per diems are an important mechanism for reimbursing work-related expenses and can help to motivate workers, but they can also have negative effects, create conflict, lead to neglect of work, have distorted impacts on program design, and create opportunities for corruption.<sup>3,4,5</sup>
- The experience of LH Project ECHO has shown that participants are willing to participate in trainings without allowances and even to spend small amounts of private resources on the data required to attend relevant CME sessions.
- LH Project ECHO has developed a robust virtual training entity for CME with a wide outreach in Malawi's HIV care community.

## ABOUT LIGHTHOUSE TRUST

LH is a World Health Organization-recognized clinic for integrated HIV prevention, treatment, and care in Malawi. LH primary clinic started in Lilongwe in 2001 on the grounds of Kamuzu Central Hospital, but today LH serves approximately 60,000 ART patients at five centers in geographically distant areas (*see Map*). In addition to referral level care, LH supports smaller urban and rural clinics in the Lilongwe district. LH is an established HIV education site and has been involved in capacity building in pre- and in-service trainings for staff from the Ministry of Health as well as non-governmental organizations and implementing partners for many years.

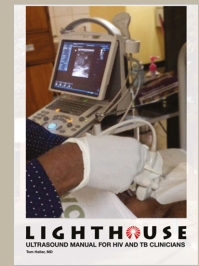
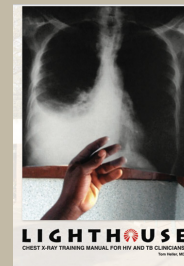
### Map Showing the Distribution of the Lighthouse Centers of Excellence



Map courtesy of Lighthouse Trust

### I-TECH & LH DEVELOPED ECHO TRAINING MATERIALS

I-TECH staff at LH also lead the development of context-specific clinical training materials for HIV and TB care. Staff created the "Lighthouse Case manual", "Lighthouse CXR manual" and "Lighthouse FASH ultrasound manual."



The manuals are currently available to download from the [Lighthouse website](http://Lighthouse website).

## REFERENCES

1. [UNAIDS: Country Fact Sheet Malawi](#)
2. National AIDS Commission: Malawi National Strategic Plan for HIV and AIDS 2020-2025. Sustaining gains and accelerating progress towards epidemic control, 2020. Lilongwe, Malawi.
3. [Perceptions of Per Diems in the Health Sector: Evidence and Implications.](#)
4. [Benefits and Drawbacks of Per Diems: Do allowances Distort Good Governance in the Health Sector?](#)
5. [How are Health Professionals Earning their Living in Malawi?](#)

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