

Cepheid Xpert HIV-1 Qual test is accepted by caregivers and health workers for Early Infant Diagnosis in Mulanje, Malawi.



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Introduction

Prevention of mother to child transmission of HIV (PMTCT) remains a key intervention in the elimination of newborn and Child HIV infection.

To achieve the UNAIDS 90-90-90 targets, Malawi has implemented various PMTCT services such as HIV testing and counselling, antiretroviral drugs for treatment and prophylaxis, safer delivery practices, education and support for safer infant-feeding practices (1).

- Malawi was the first country to adopt Option-B plus in 2012 which resulted in reduction of MTCT.
- The country has now embraced a test and treat all strategy.

Early diagnosis of HIV infection in infants (EID) is a critical component of PMTCT programmes as it leads to early initiation of ART.

- Early initiation of ART decrease early infant mortality by 76% and HIV progression by 75% (2)

Approximately 40,000 HIV-exposed infants are born each year in Malawi and are given a 6 week course of Nevirapine (3)

Diagnosis in infants requires HIV DNA/RNA PCR as maternal antibodies interfere with diagnosis below 18 months but PCR is not readily available because it is costly, requires skilled staff and specialised laboratory.

In Malawi, key challenges in EID programmes are the use dried blood spot (DBS) and HIV PCR which have turn-around-times (TAT) of between 2 to 3 months but also a 33% of lost to follow-up (3).

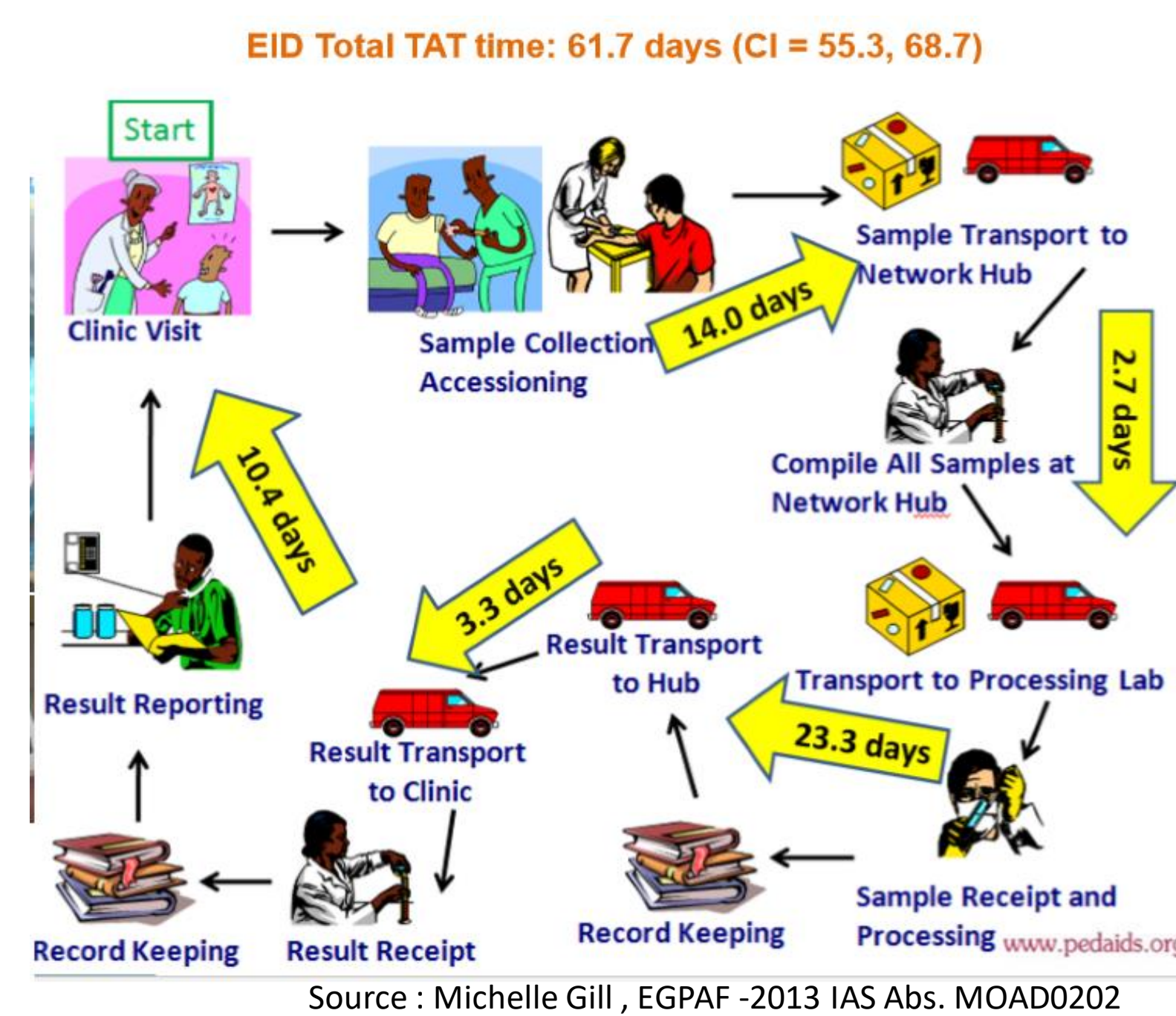


Fig 1 : EID in Malawi



Fig 2 :Cepheid GeneXpert platform for Xpert HIV

POCTs like Cepheid Xpert HIV-1 Qual assay (Xpert HIV), prequalified by WHO in 2016 (4), overcomes challenges of conventional PCR such as reducing TAT of HIV test results to median TAT <1 day yet as specific and sensitive as conventional PCR.

Research question

For this particular sub study, we aimed to answer the question "Is Xpert HIV) whole blood (WB) protocol accepted in Malawi by caregivers and health workers in Mulanje District Hospital (MDH)?"

Methods

This qualitative study was nested in a study assessing the feasibility and performance of Xpert HIV Whole Blood (WB) protocol in Malawi which recruited 680 participants from July to September 2018.

Main study's aims were to assess Xpert HIV's performance in comparison to PCR :

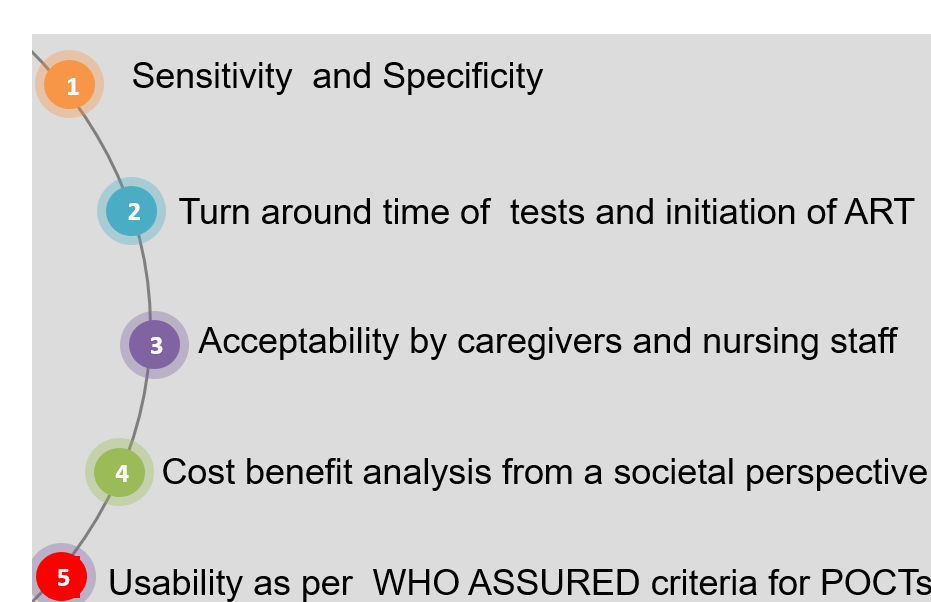


Fig 3 :Objectives of the Xpert HIV main study

This sub study employed qualitative methods to understand caregivers and healthcare providers experiences with this novel point of care HIV diagnostic technology.

Sixty in-depth interviews were conducted with caregivers of children accessing health care and 5 nurses at MDH .

Interview guides had 4 main areas:

- a) Community perceptions towards Xpert HIV,
- b) Perceptions about time to receive test results,
- c) Acceptability and decision making and
- d) Potential social harms/concerns about Xpert HIV.

The interviews were recorded, translated, transcribed and uploaded onto NVIVO software for data coding.

Thematic analysis was used to analyse data.

Results

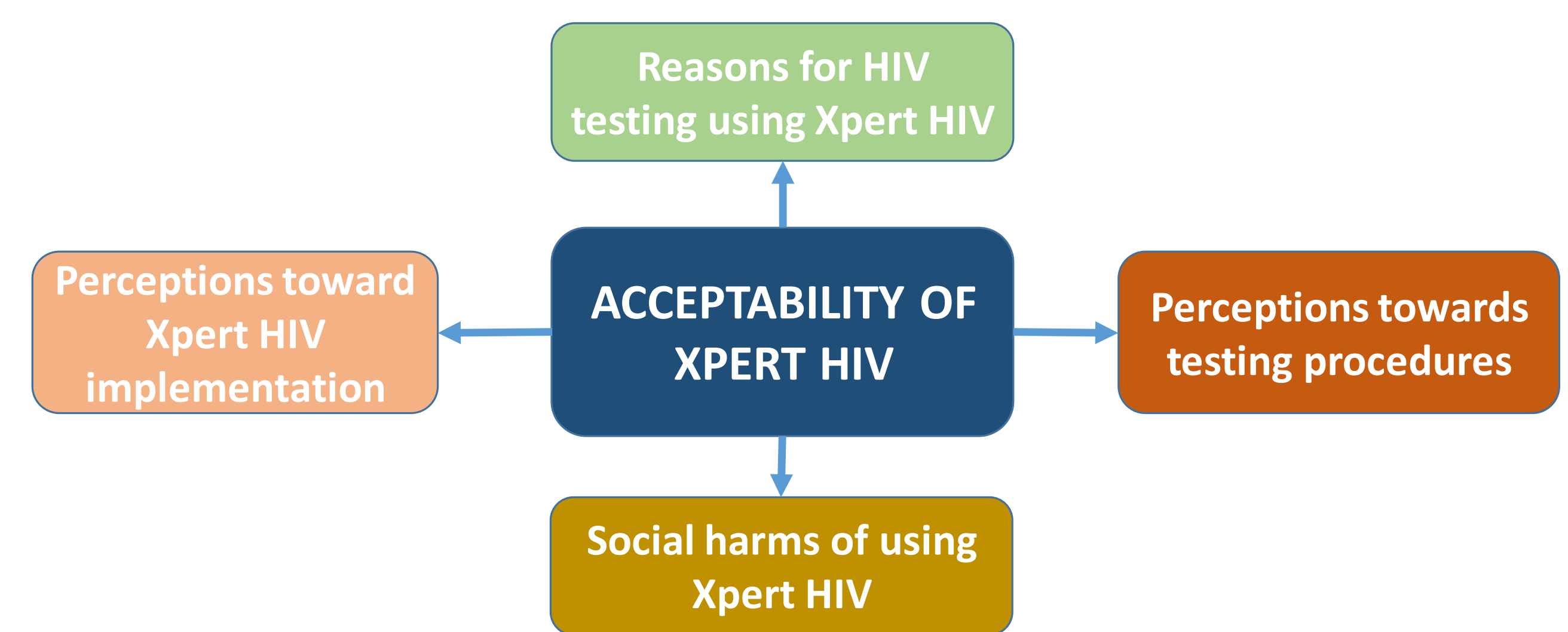


Fig 4 :Perceived acceptability of Xpert HIV

Overall acceptability of Xpert HIV

- Half of the caregivers had no concerns regarding the blood-taking process as they felt overall knowing the HIV status was beneficial to their child's health.
- Overall, Xpert HIV was accepted by both, caregivers and healthcare providers, because of quick results (TAT), subsequent prospect of early initiation of treatment, reduced number of hospital visits and the subsequent travel costs to the health facility.

Caregivers motivations for HIV testing using Xpert HIV

Some caregivers felt infants faced an increased danger of catching HIV because they are often in contact with sharp objects that can cut them and transmit HIV.

Other parents felt interactions with other children could expose children to the risk of HIV.

"We want to know about the blood results of the child, because a child plays with different things, such as razor blades." [Caregiver]

"A child is a child and can contract the disease [HIV/AIDS] through many things, including from their friends." [Caregiver]

Another commonly reported reason why caregivers had their babies tested for HIV was because they used the baby to validate their previously known test result. The following quote illustrates uncertainty about ones HIV status and knowledge about window period:

"Sometimes you could be in the window period, so you need to test the child [to see whether the status is different from yours]. [Caregiver]

Perception toward Xpert HIV implementation

If implemented at the community health facility level, most caregivers believed that people would be pleased because it would mean increased access to HIV services addressing the issue of walking long distances:

"We would be happy because the HIV testing service has come closer to us, unlike accessing it from a long distance." [Caregiver]

We would be happy because if the hospital is away from you, it is difficult for you to access these HIV testing services. [Caregiver]

Health workers perceptions towards Xpert HIV procedures

Xpert HIV was accepted by health workers due to the quick TAT of results, which they felt might reduce mortality and morbidity.

"I feel good because...this method is fast and it will help us to save lives in time." [Health worker]

"Other [health] workers will be happy with the process because the results do not take long time to be out." [Health worker]

"I feel good, more especially when people are coming and they are willing to have this test." [Health worker]

Perceived Xpert HIV social harms

A minority of caregivers expressed worry when drawing blood samples stating that it was a painful procedure (6/60) while others.

Discussion and Conclusions

- To attain the 90-90-90 targets, efforts addressing challenges related EID should consider use of POCTs like Xpert HIV.
- Xpert HIV WB protocol was acceptable to both caregivers and healthcare providers in Mulanje, rural Malawi.
- Implementation of this novel HIV diagnostic technology requires maximizing its capabilities while recognizing and aptly responding to context specific issues

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