



POSITIONING OF TB DX : TIERED SYSTEM, INTEGRATED APPROACH

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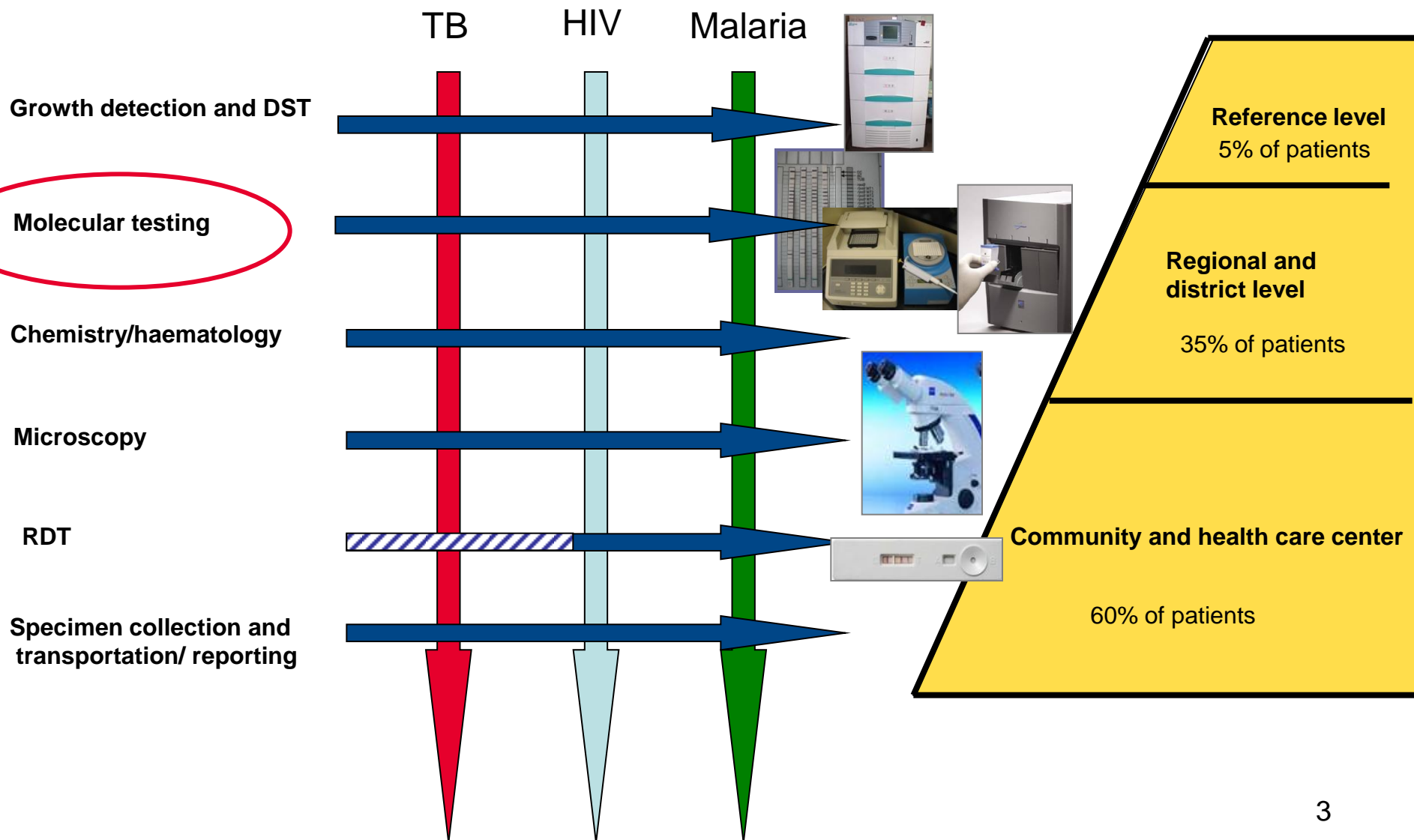
Partnering for better diagnosis for all

Integrated Laboratory Network Definition

An integrated laboratory network can be defined as one that has the ability to **provide all needed primary diagnostic services** for care and treatment of patients without requiring them to go to different laboratory facilities for specific tests (under one roof...ideally under one ceiling).

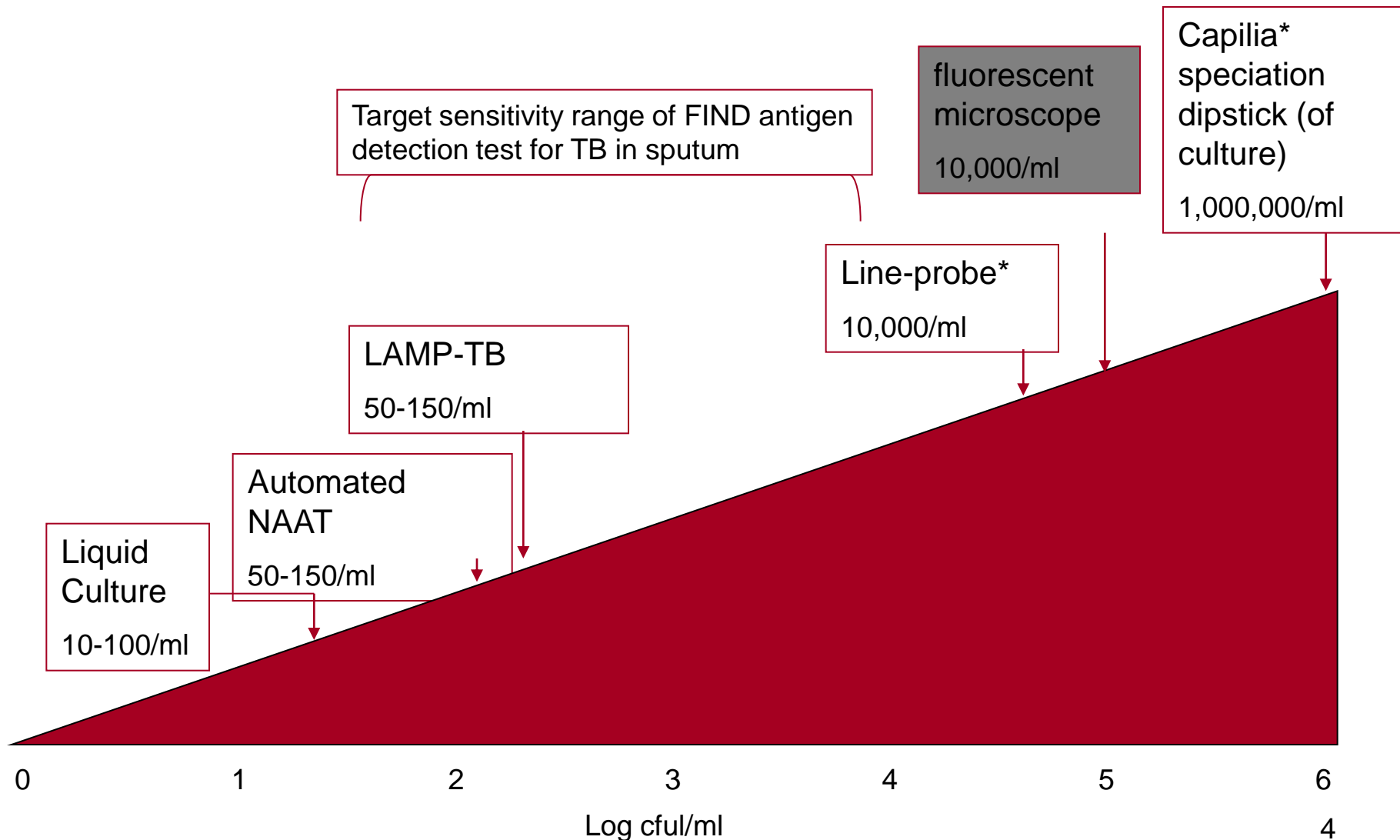
Integrated Laboratory Network

laboratory services and emerging infectious diseases



Importance of early diagnosis:

Sensitivity (cfu/ml) of pulmonary TB tests in portfolio



Introducing high tech in low tech settings



Automated Sample Prep,
Amplification and Detection

<120 minutes

A technology platform:

- TB & Rif Resistance
- Potential for HIV viral load
- Potential for HPV STD

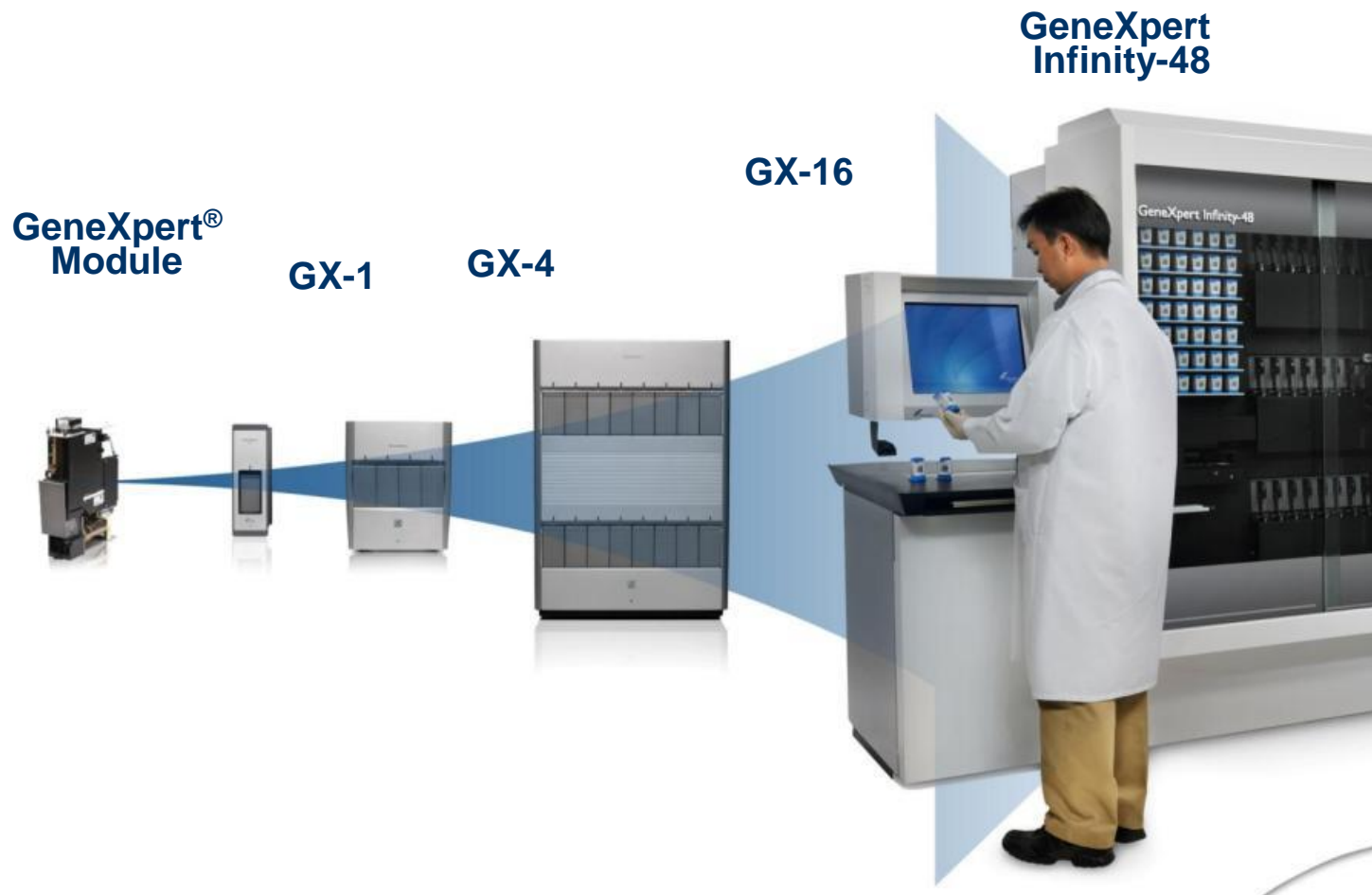
Major advantages in workflow

- fully automated with 1-step external sample prep.
- time-to-result 1 1/2 h (walk away test)
- throughput: up to 16 tests / module / run
- no bio-safety cabinet
- closed system (lower contamination risk)

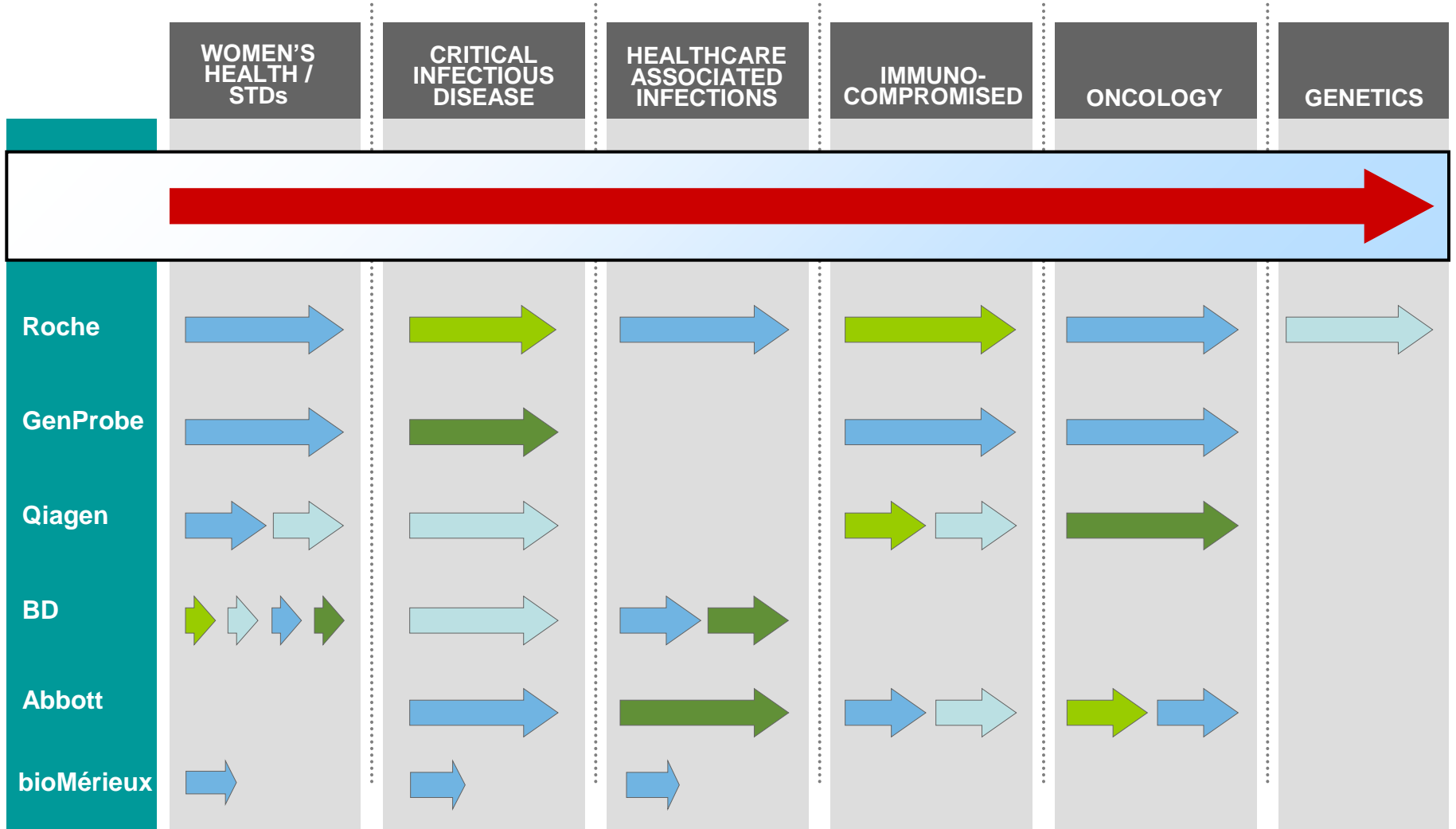
Performance

- specific for MTB
- sensitivity close to culture
- detection of rif-resistance via rpoB gene

GeneExpert Platforms



Diverse Testing Needs



Integration of new tools in the tiered health system

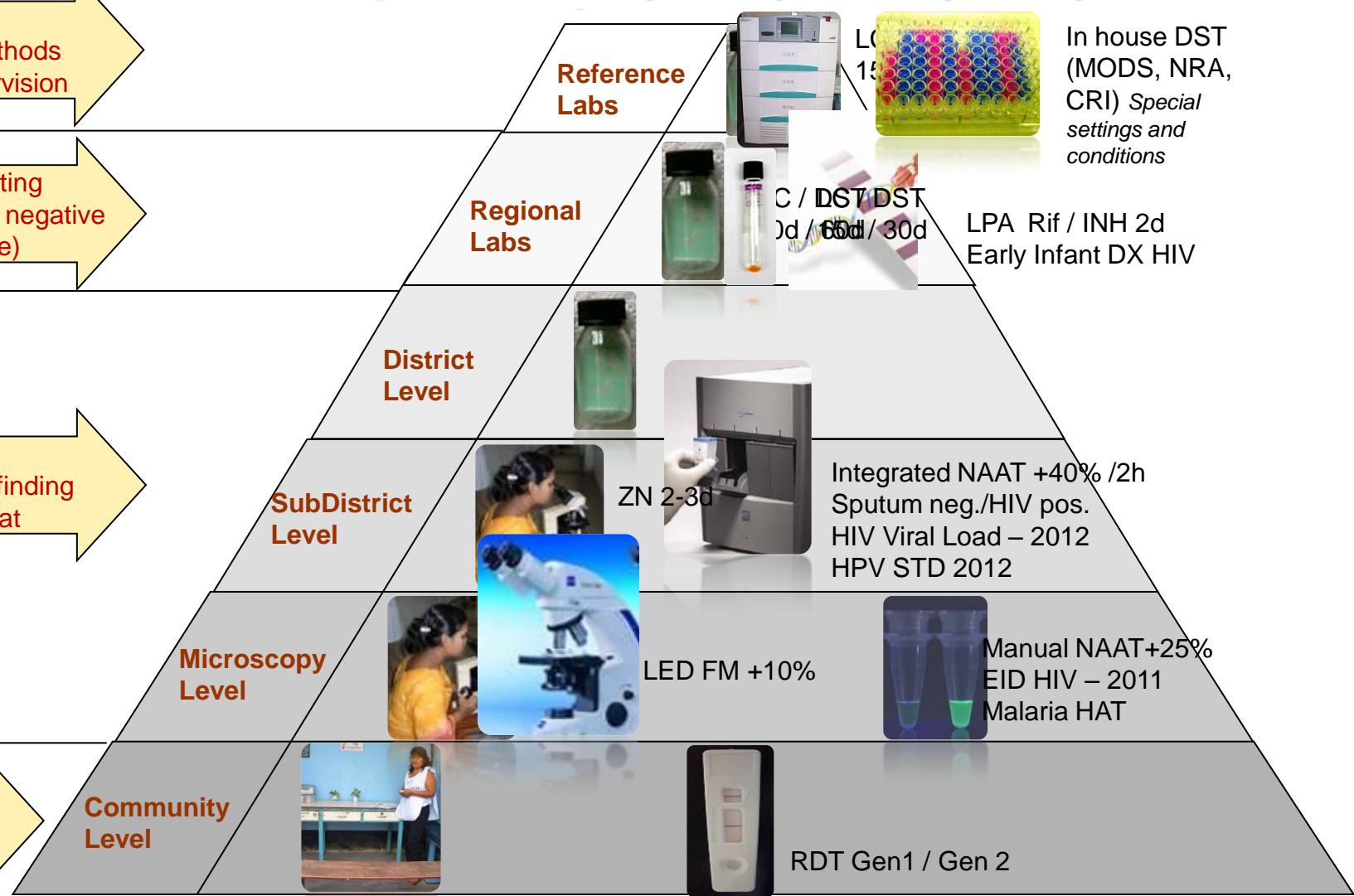
Expected 2012 (Gen 1) / 2014 (Gen 2)

- Surveillance
- Reference methods
- Network supervision

- Resolution testing (screening-test negative drug resistance)

- Screening
- Passive case finding
- Detect and treat

- Clinical Screening
- Primary care



Further questions to be answered

- The eligible patient to be tested
 - Smear + and/ or –
 - Low and high HIV settings
 - Low and high MDR settings
 - Any case or only any drug resistant suspect or only MDR suspects
- Backup culture and DST capacity to follow up MDR/XDR patients
- Specimen referral
- EQA
- Adequate diagnostic algorithm

Integrating HIV-TB diagnostics platforms:

Lesotho



**MDR-TB
LPA**



**EID for
HIV by
PCR**



Molecular laboratory in Maseru

**Demonstration
(Evidence)**



**WHO
(Policy)**



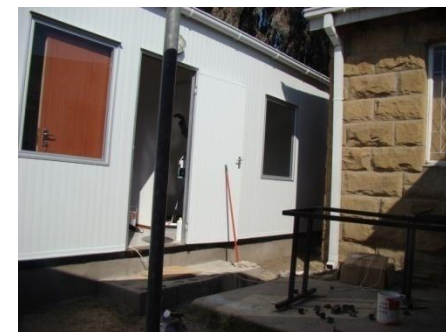
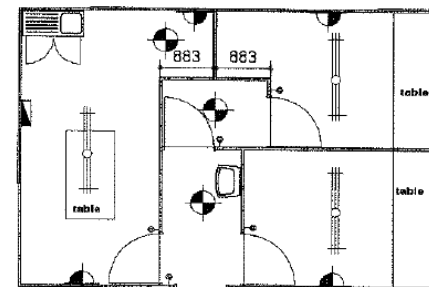
**Implementation
(Practice)**

March 2007 LC
April 2008 LPA

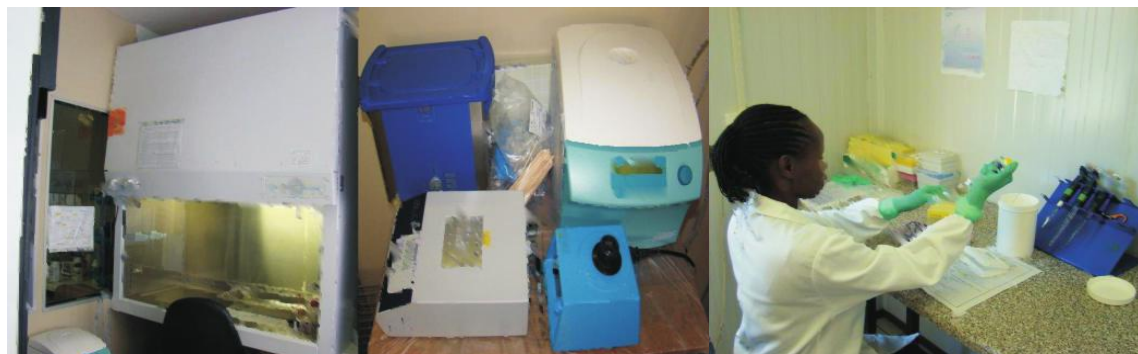
June 2007 LC
June 2009 LPA

November 2007 LC
November 2008 LPA
April 2009 EID for HIV by PCR

- Partners**
- WHO
 - PIH
 - MOH (Lesotho)



National TB Reference Laboratory Maseru, Lesotho: *Integrated TB-HIV (EID) laboratory*



Number of TB diagnostic tests performed (2009 to July 2010)

Testing Platform~	Tests performed	MTB Positive	DST tests*	MDR-TB	MDR-patients placed on treatment
MGIT 960-Liquid culture	7081	712	241	116	102
Line probe assay**	652	563	563	117	90

*Only MDR-TB suspects request for DST; ** rapid DST for 'rif' and 'inh'- data includes QA/Training activities
~ In addition: Solid culture and DST for 951 DRS samples and LED FM microscopy demonstration study in 2008-2009

Number of EID HIV* diagnostic tests performed (Jan- July 2010)

Total tests	Positive	Placed on treatment
722	137	35

* EID-Early infant diagnosis of HIV-1 DNA

Early infant Diagnosis of HIV using Dried Blood samples



Punching of DBS cards



DNA extraction



*Hybridization–
reading of plate*

Thank you

