FIND

ASLM

TB LAM technology development pipeline

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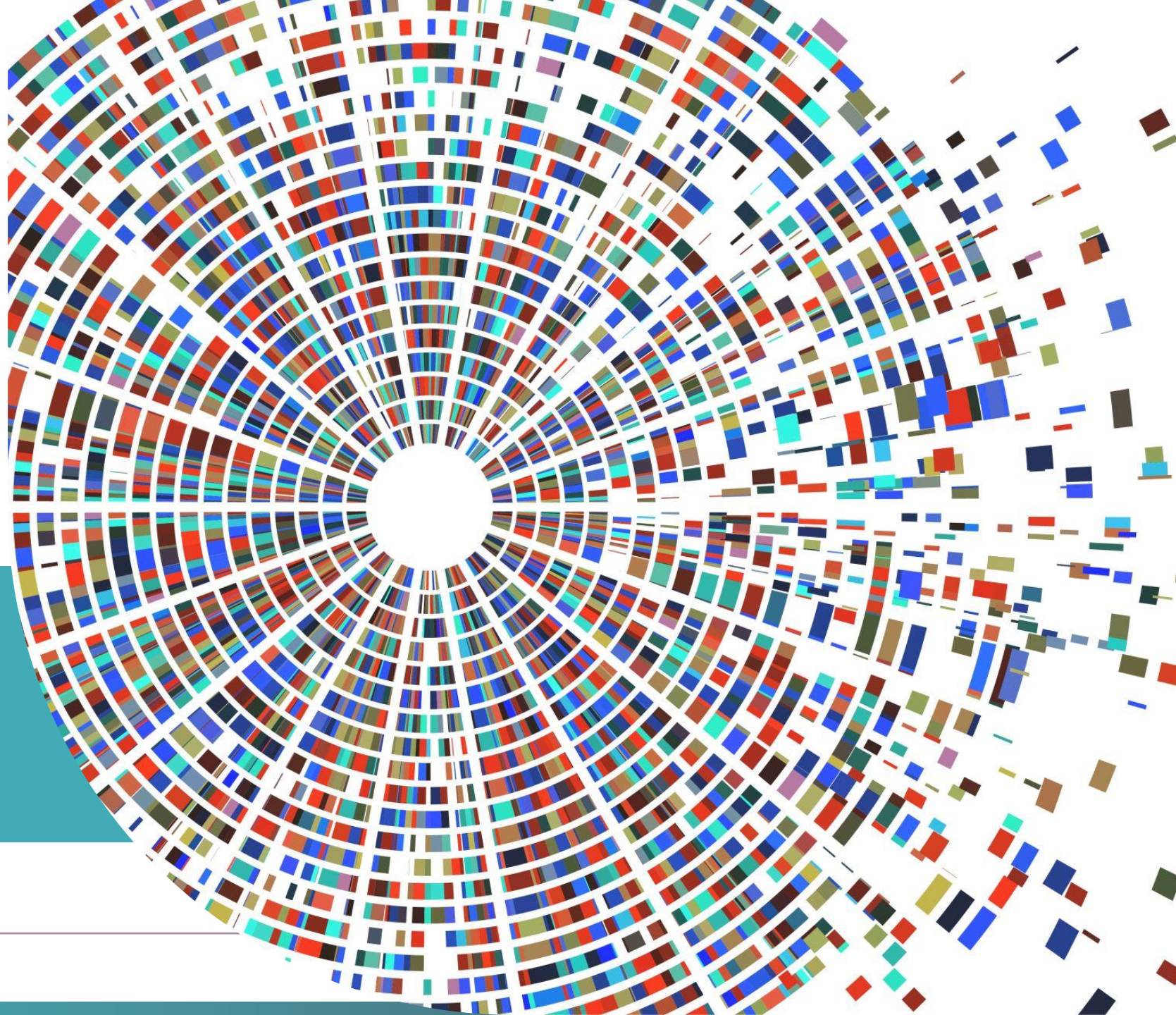
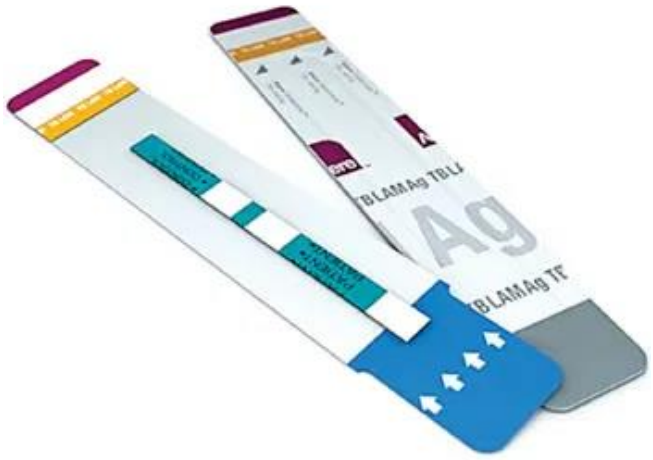


CURRENT AND 2ND GENERATION LAM TEST

ALERE LAM, AND Fujifilm SILVAMP TB LAM

World Health Organization

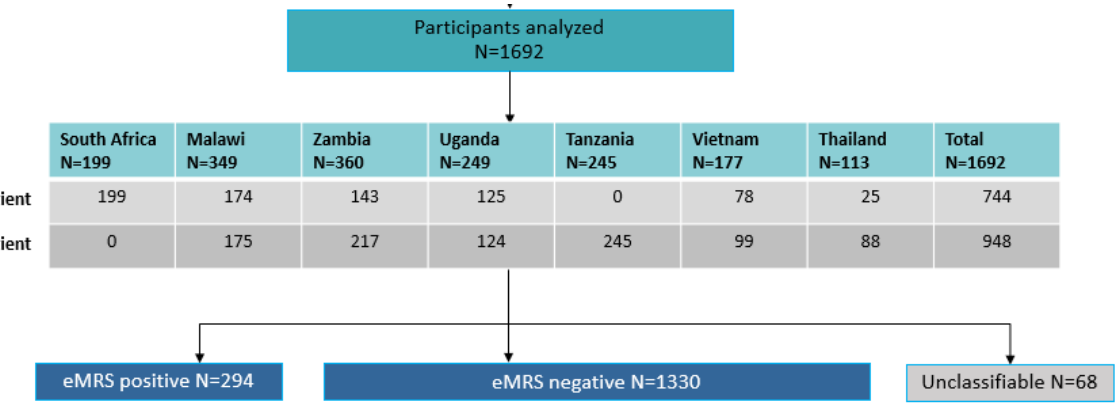


PLHIV (5 cohorts, n=1595)

	Sensitivity [95% CI]	Specificity [95% CI]
AlereLAM	34.9 [19.5 – 50.9]	95.3 [92.2 – 97.7]
FujiLam	70.7 [59.0 – 80.8]	90.9 [87.2 – 93.7]

Source: *Broger et al. J Clin Invest 2020; Broger et al, PLOS Med 2020*

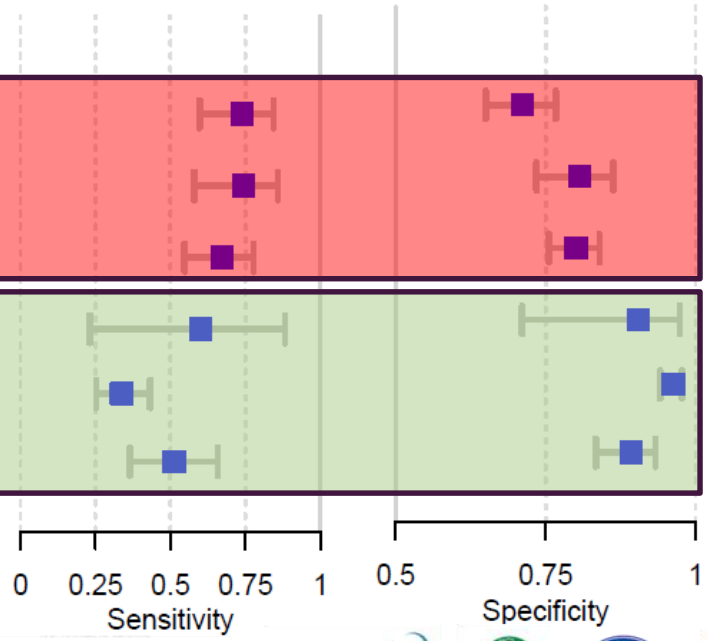
LARGE PROSPECTIVE TRIAL DEMONSTRATE LOT TO LOT VARIABILITY



	South Africa N=199	Malawi N=349	Zambia N=360	Uganda N=249	Tanzania N=245	Vietnam N=177	Thailand N=113	Total N=1692
Inpatient	199	174	143	125	0	78	25	744
Outpatient	0	175	217	124	245	99	88	948

- WHO policy review cancelled
- Manufacturing issue has been resolved, test re-designed
- Relaunch expected in 2023

Lot Number	N	Sensitivity [95%CI]	Specificity [95%CI]
19001	275	73.9 [59.7–84.4]	71.2 [65.0–76.7]
19002	180	74.3 [57.9–85.8]	80.7 [73.5–86.3]
19003	408	67.2 [54.7–77.7]	80.1 [75.6–84.0]
20002	26	60.0 [23.1–88.2]	90.5 [71.1–97.4]
20003	535	33.7 [25.3–43.2]	96.3 [94.1–97.7]
20004	191	51.2 [36.5–65.8]	89.3 [83.4–93.3]



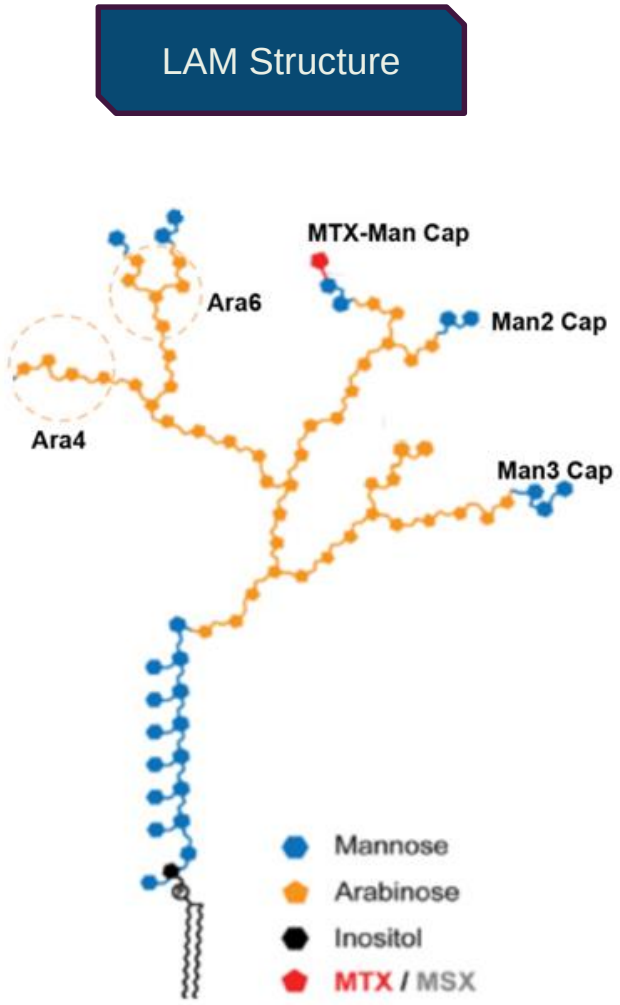
CHALLENGES FOR DEVELOPING LF-LAM TEST

LAM Structure

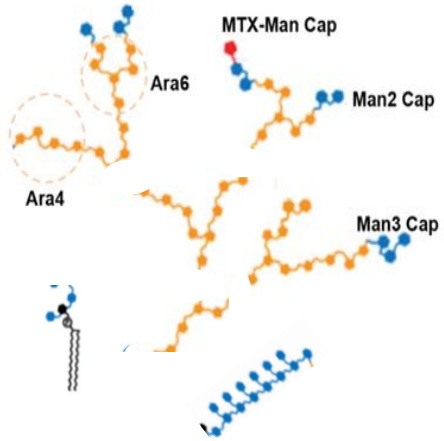
Sample Matrix

LAM concentration

Assay Design



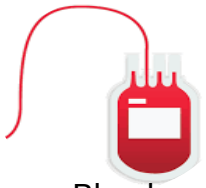
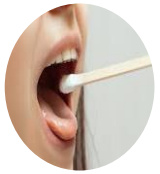
LAM Fragmentation in urine



LAM structural Integrity and stability varies greatly across samples matrix

Lack of pre-analytical improved reagents

- Antibodies (full coverage)
- Antigen (Cultured LAM varies from Urinary LAM)

Sample Matrixes	 Urine	 Blood	 Stool	 CSF	 Tongue Swab	 Exhale Breath Condensate	 Sputum
LAM Concentration	1 – 2000 pg/ml	1 – 2000 pg/ml	Unknown	Unknown	Unknown	100 pg-100 µg/ml	100 pg-100 µg/ml
LAM Structure	• Delipidated • Fragmentation • Stability unknown	• Unknow • Fragmentation?	• Less explored unknown	• Less explored unknown	• Less explored unknown	• Different man cap structure • Truncated	• Intact LAM
Advantages	• Easy to collect • Potential in EPTB and pediatric TB	• Homogenous • Potential in EPTB and pediatric TB • Treatment monitoring	• Less explored unknown	• Potential in EPTB mainly TB Meningitis	• Easy to collect sample • Treatment monitoring	• Easy to collect sample • High LAM	• High LAM • Treatment monitoring
Disadvantages	• Matrix Effect • Structure stability and integrity varies greatly	• Form Complex with HDL	• Less explored • Matrix effects	• Concentration unknown	• Only applicable for Pulmonary TB	• Only applicable for Pulmonary TB	• Sample heterogeneity • Only applicable for Pulmonary TB

3RD GEN LAM ASSAYS

1

Direct Visualization

GOLD particle based Lateral Flow test

- Simple
- Robust

2

Need sample preparation

Extraction and concentration of LAM increasing test sensitivity

- Multiples steps
- High cost

3

Need RDT Reader

Ultra-sensitive Fluorescence based tests

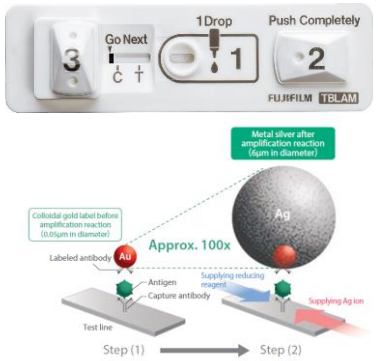
- Simple and Robust
- Less field friendly

THE LAM ASSAY PIPELINE

Alere LAM

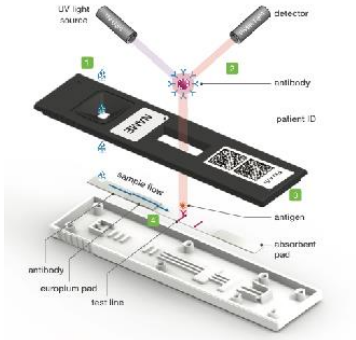
- Narrow use case but saves lives

Fujifilm



- Clinical evidence showing better accuracy than Alere TB determine
- Issue with Lot variability
- High cost

SD Biosensors



- Fluorescence based test
- Under development

Boditech

- Fluorescence based test
- Under development

Abbott

Abbott

- LAM concentration device
- Under development
- Visual readout

Salus

- Integrated sample preparation device
- Under development
- Visual readout

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