FIND

Because diagnosis matters

Developments in diagnosis of TB in children and adolescents

Pamela Nabeta

Annual meeting of the Child and Adolescent TB working group - 30 October 2019, Hyderabad, India

Conflict of interest disclosure

- ✓ I have **no**, real or perceived, direct or indirect conflicts of interest that relate to this presentation.

This event is accredited for CME credits by EBAP and speakers are required to disclose their potential conflict of interest going back 3 years prior to this presentation. The intent of this disclosure is not to prevent a speaker with a conflict of interest (any significant financial relationship a speaker has with manufacturers or providers of any commercial products or services relevant to the talk) from making a presentation, but rather to provide listeners with information on which they can make their own judgment. It remains for audience members to determine whether the speaker's interests or relationships may influence the presentation. Drug or device advertisement is strictly forbidden.

Stool processing method: proof of concept & initial validation

RESEARCH ARTICLE

A Novel Sample Processing Method for Rapid Detection of Tuberculosis in the Stool of Pediatric Patients Using the Xpert MTB/RIF Assay

Padmapriya P. Banada[1☯], Uvistra Naidoo[2☯¤], Srinidhi Deshpande[1], Farina Karim[2], JoAnne L. Flynn[3], Melanie O'Malley[3], Martin Jones[4], Oliver Nanassy[5], Prakash Jeena[2], David Alland[1]*

	Sensitivity(95% CI)	Specificity(95% CI)
Xpert-Stool 0.6 g	0.85(0.6–0.9)	1(0.77–1)
Xpert-Stool 1.2 g	0.84 (0.6–0.96)	0.94(0.7–0.99)

Sensitivity and specificity of Xpert stool assay as tested with pediatric clinical samples (Banada et al. PlosOne 2015).

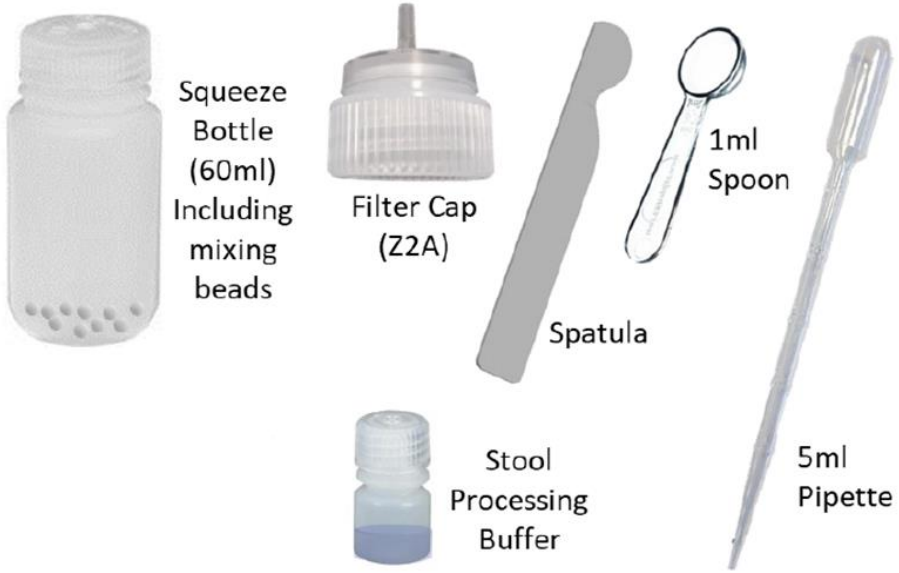
Molecular Detection of *Mycobacterium tuberculosis* from Stools in Young Children by Use of a Novel Centrifugation-Free Processing Method

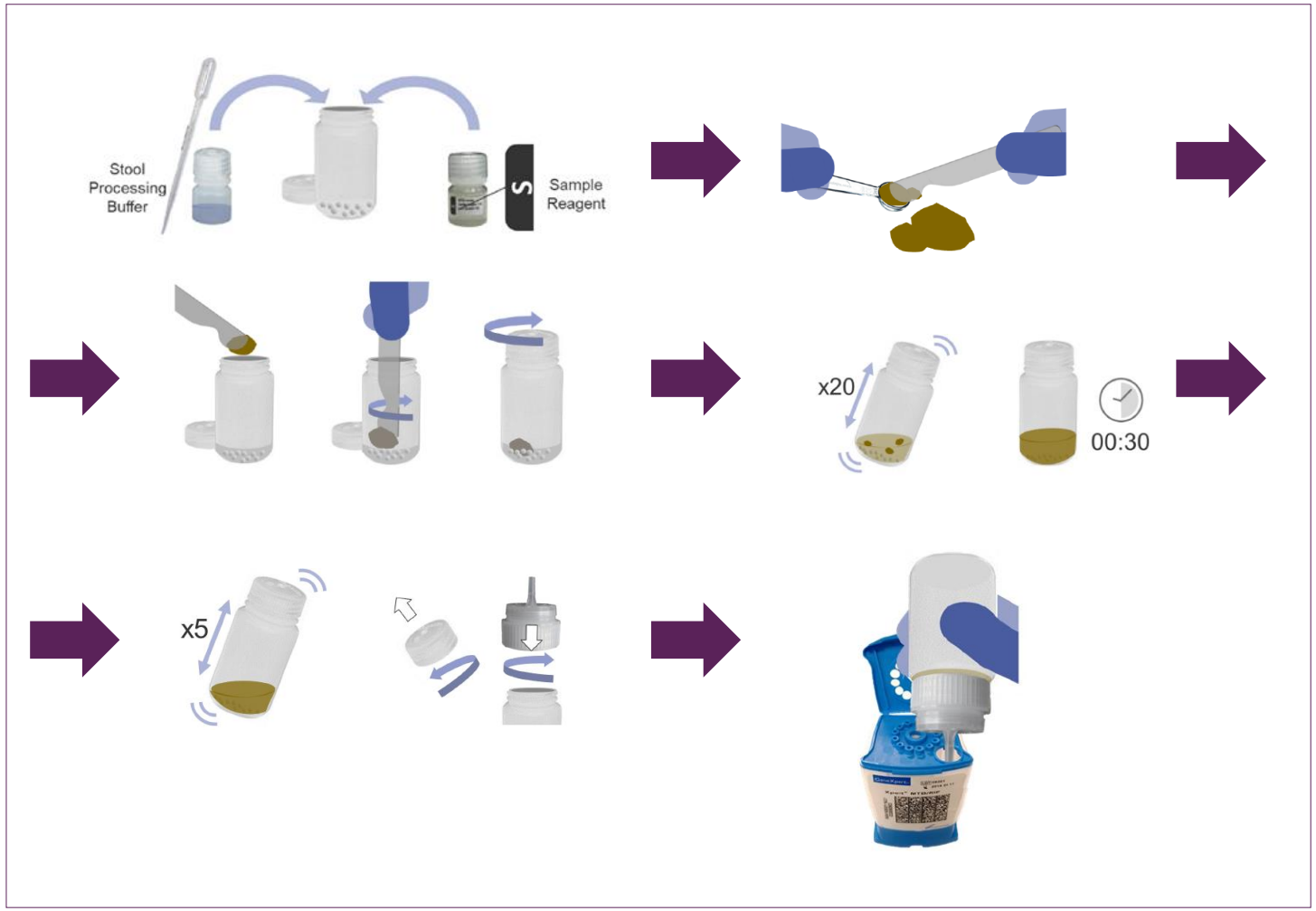
Elisabetta Walters,[a] Lesley Scott,[b] Pamela Nabeta,[c] Anne-Marie Demers,[a] Gary Reubenson,[d] Corné Bosch,[a] Anura David,[b] Marieke van der Zalm,[a] Joshua Havumaki,[c,e] Megan Palmer,[a] Anneke C. Hesseling,[a] Jabulani Ncayiyana,[f,g] Wendy Stevens,[b,i] David Alland,[h] Claudia Denkinger,[c] Padmapriya Banada[h]

	Respiratory Xpert	Sensitivity (95%CI)	Specificity (95%CI)
Single stool	Stool swab	44.4 (13.7-78.8)	99.6 (97.8-100)
	0.6 g stool	44.4 (13.7-78.8)	99.2 (97.1-99.9)
Combined stool 1 & 2	Stool swab	50.0 (18.7-81.3)	99.2 (97.2-99.9)
	0.6 g stool	70.0 (34.8-93.3)	98.4 (96.1-99.6)

Performance of prototype assay combined with Xpert MTB/RIF on stool, compared with Xpert MTB/RIF on respiratory samples (Walters et al. JCM 2018).

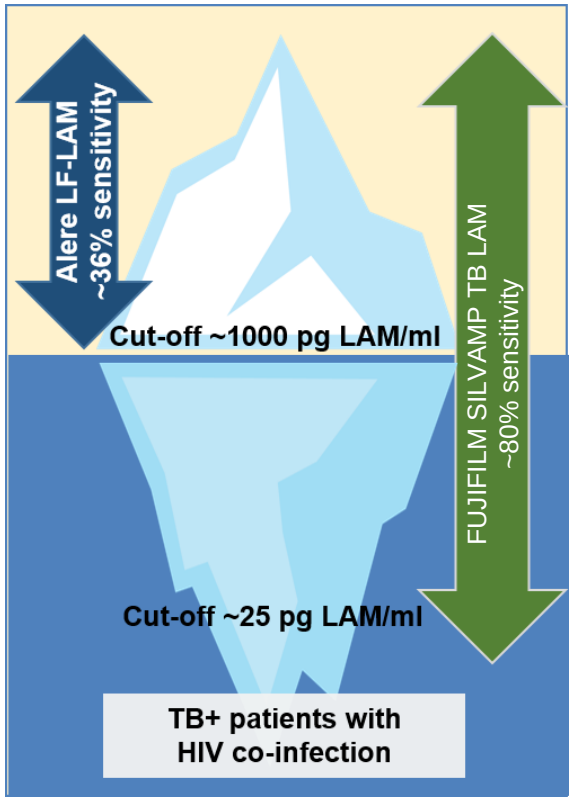
SPK: Final design under clinical evaluation





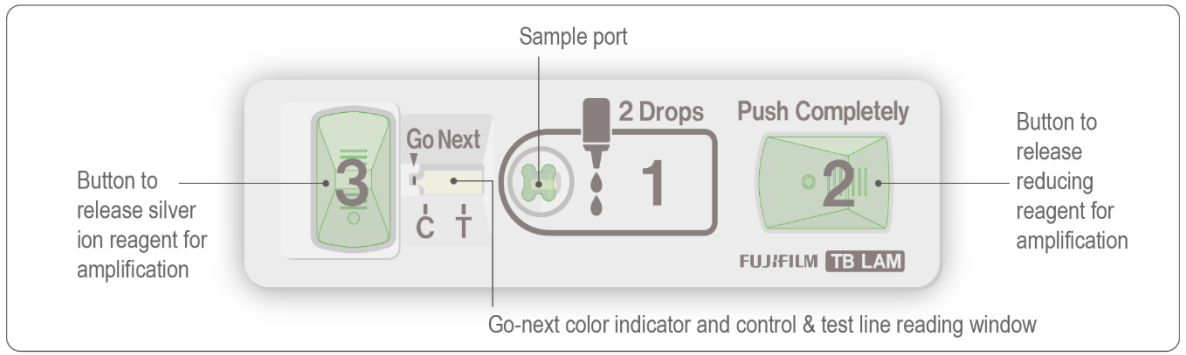
FUJIFILM SILVAMP TB LAM (FujiLAM)

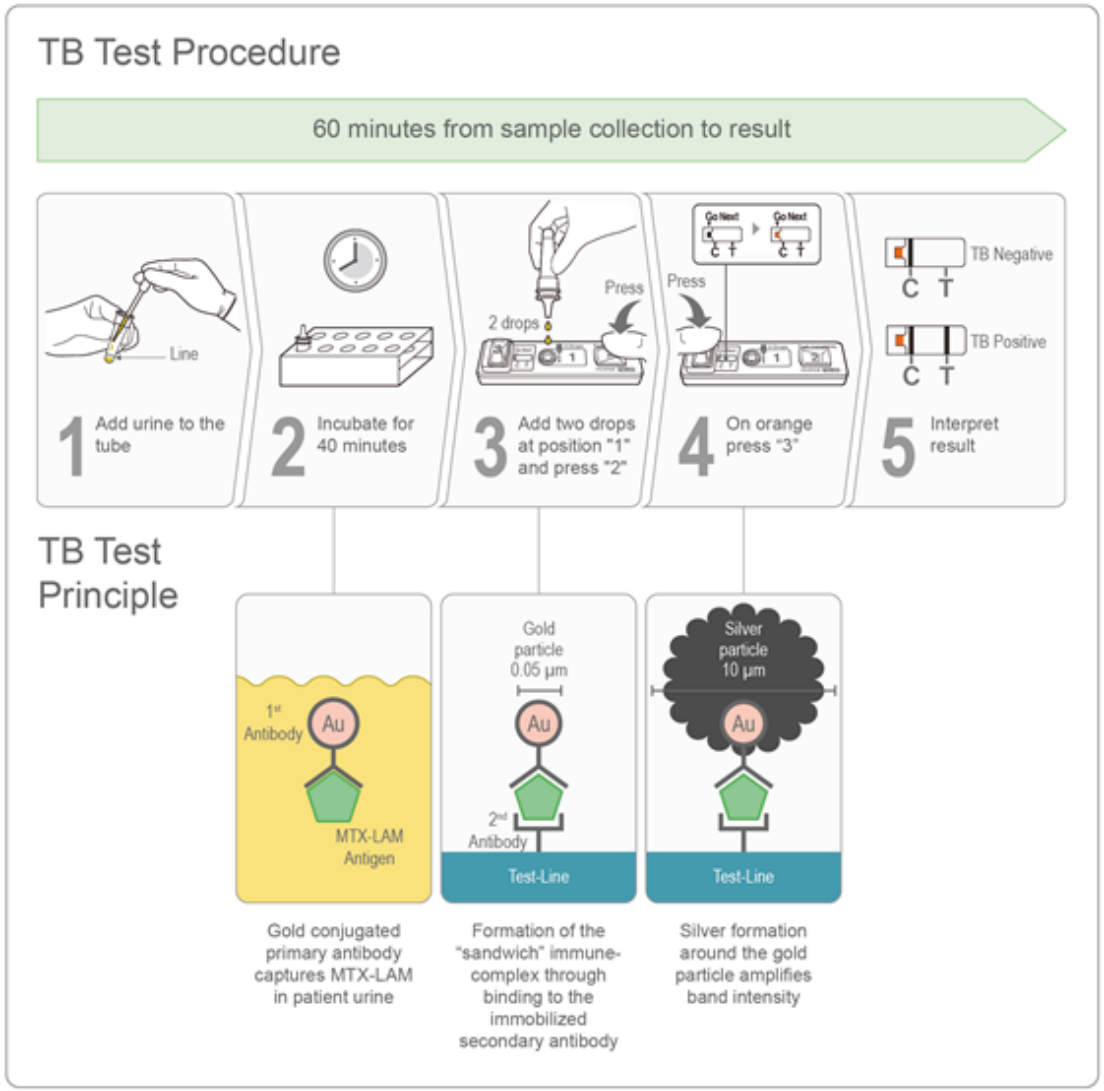
- Designed for the POC in LMIC's where patients seek care
- Enhanced sensitivity to detect TB in PLHIV
- High specificity for immediate treatment initiation
- High patient impact



[1]Dowdy et al. 2006, AIDS and Peter et al. 2016, Lancet ID

FujiLAM test device





First evaluation of FujiLAM

Novel lipoarabinomannan point-of-care tuberculosis test for people with HIV: a diagnostic accuracy study

Tobias Broger, Bianca Sossen*, Elloise du Toit, Andrew D Kerkhoff, Charlotte Schutz, Elena Ivanova Reipold, Amy Ward, David A Barr, Aurélien Macé, Andre Trollip, Rosie Burton, Stefano Ongarello, Abraham Pinter, Todd L Lowary, Catharina Boehme, Mark P Nicol, Graeme Meintjes†, Claudia M Denkinger†*

- 968 adults, HIV co-infected inpatients in a high-burden setting (frozen samples)
- Sensitivity of FujiLAM was significantly higher (22–35%) than AlereLAM
- Sensitivity 84·2% in patients with CD4 ≤100 cells per µL

Preliminary data on FujiLAM in children using frozen urine samples

FujiLAM performance in children

- Further details: e-poster session
- Ongoing assessment on fresh urine samples (FIND & RaPaed)

Thank you!

FIND
Because diagnosis matters

Unitaid Innovation in Global Health
UKaid from the British people
World Health Organization
KFW
CDC
The Global Fund To Fight AIDS, Tuberculosis and Malaria
Bill & Melinda Gates foundation
Stop TB Partnership TB REACH
Republique et Canton de Geneve
EDCTP
GHIT Fund Global Health Innovative Technology Fund
Netherlands Enterprise Agency
USAID From the American People
fondation BOTNAR
Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra
Swiss Development and Cooperation;
State Secretariat for Education, Research and Innovation
Netherlands Enterprise Agency
KNCV Tuberculosis Foundation To eliminate TB
The ELMA foundation
Federal Ministry of Education and Research
ASLM African Society for Laboratory Medicine
Anesvad Seguimos creyendo que es posible
Australian Government Department of Foreign Affairs and Trade
Fundación PROBITAS