Vuka! Let's unite towards a TB-free world!

9th SA TB Conference
8 – 11 June 2026

EVALUATION OF THE ROLE OF TONGUE SWABS TO OPTIMIZE TUTT IMPLEMENTATION - AN OBSERVATIONAL STUDY (TUTTPlus)

KwaZulu Natal Findings

Department of Health (DOH) Targeted Universal Testing for TB (TUTT)

TUTT, or Targeted Universal Testing for TB, is a strategy to find tuberculosis (TB) in people at high risk, not just those with symptoms.

Key groups who should be tested under TUTT include:

- people with HIV,
- those who have been in close contact with someone with active pulmonary TB, and
- individuals with a history of TB in the last two years.

According to the DOH National Guidelines on the Treatment of TB infection 2023, the TUTT process involves collecting sputum samples for testing, often with Xpert, and should be integrated into both facility-based and community screening programs to increase TB diagnosis rates and reduce transmission.

TUTT was implemented in South Africa in 2022

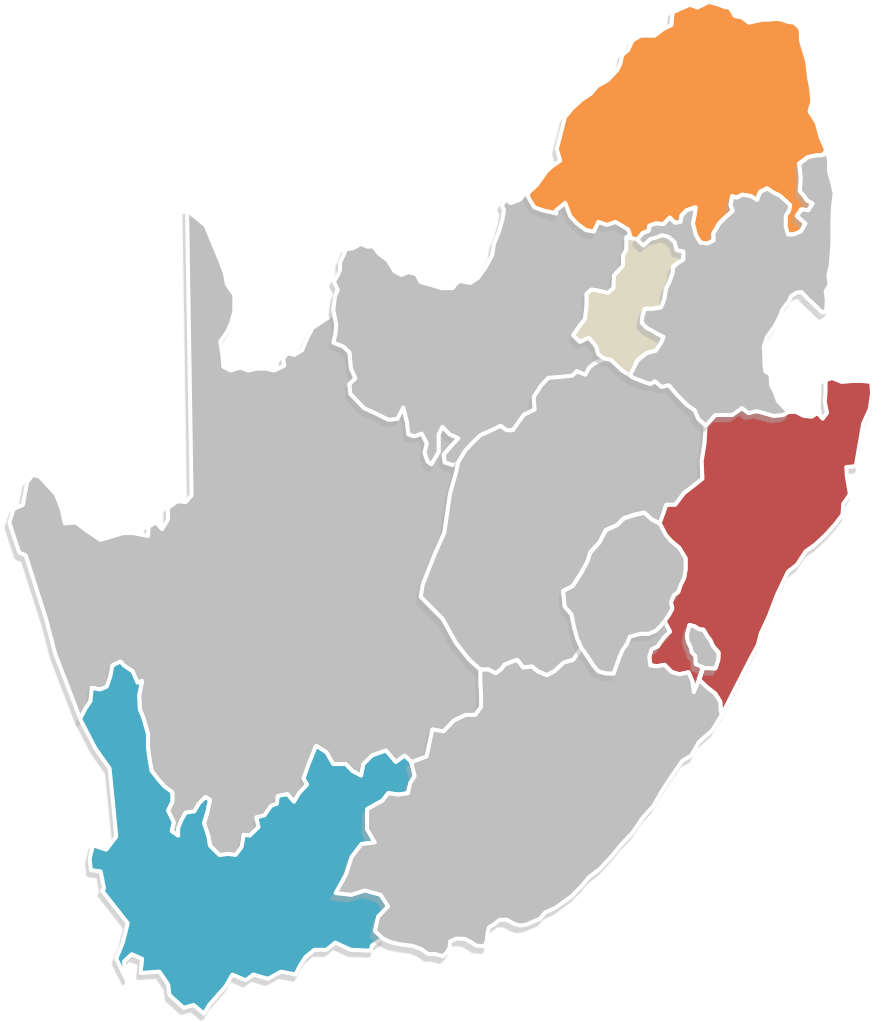
TUTTPlus Study Background

Purpose: Obtain data on the use, effectiveness and cost of tongue swabs in routine clinics to diagnose TB in targeted populations; either as an addition to sputum testing or by replacing sputum as the leading diagnostic specimen for TB.

Objectives:

- To assess feasibility
- To determine incremental yield of tongue swab in addition to sputum.
- To analyse the accuracy/concurrence of tongue swab vs sputum.

STUDY LOCATION

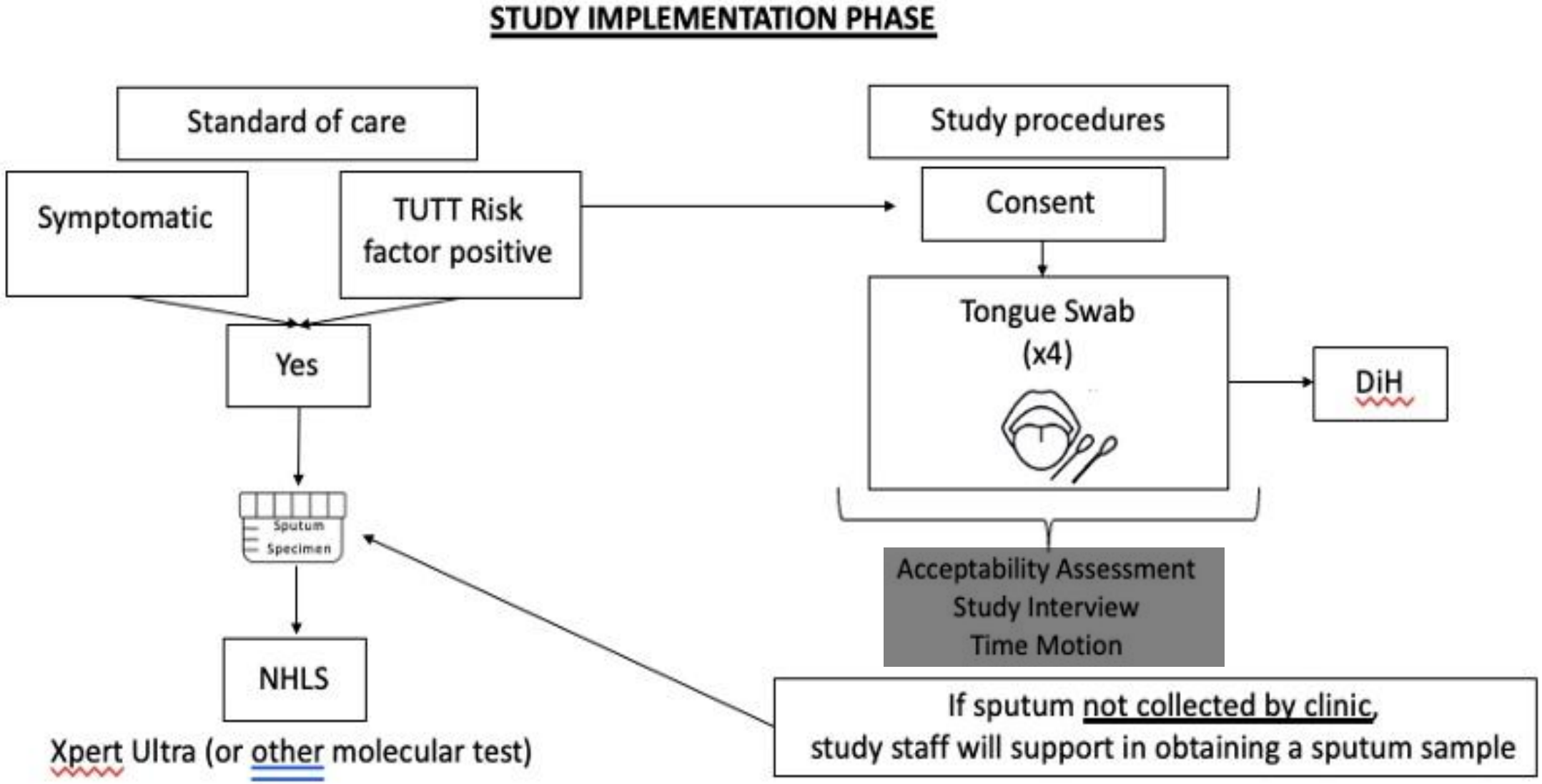


- **Limpopo**
  Perinatal HIV Research Unit
- **Western Cape**
  Desmond Tutu TB Centre
- **KwaZulu-Natal**
  Africa Health Research Institute

uMkhanyakude District

- Mtubatuba Clinic
- KwaMsane Clinic
- Somkhele Clinic
- Hlabisa Gateway Clinic

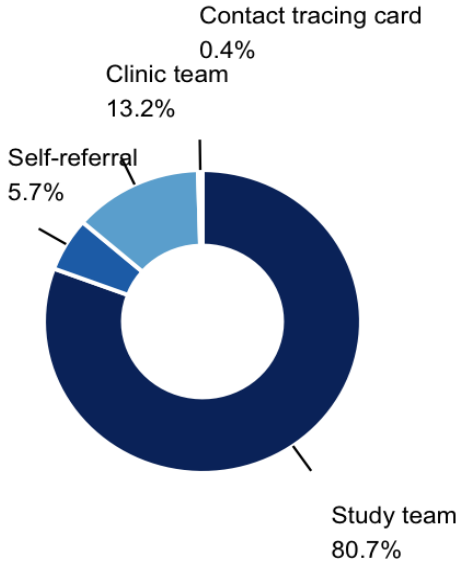
Methodology

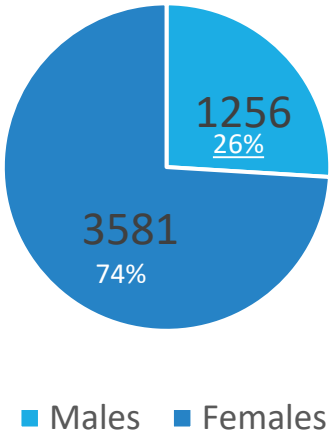


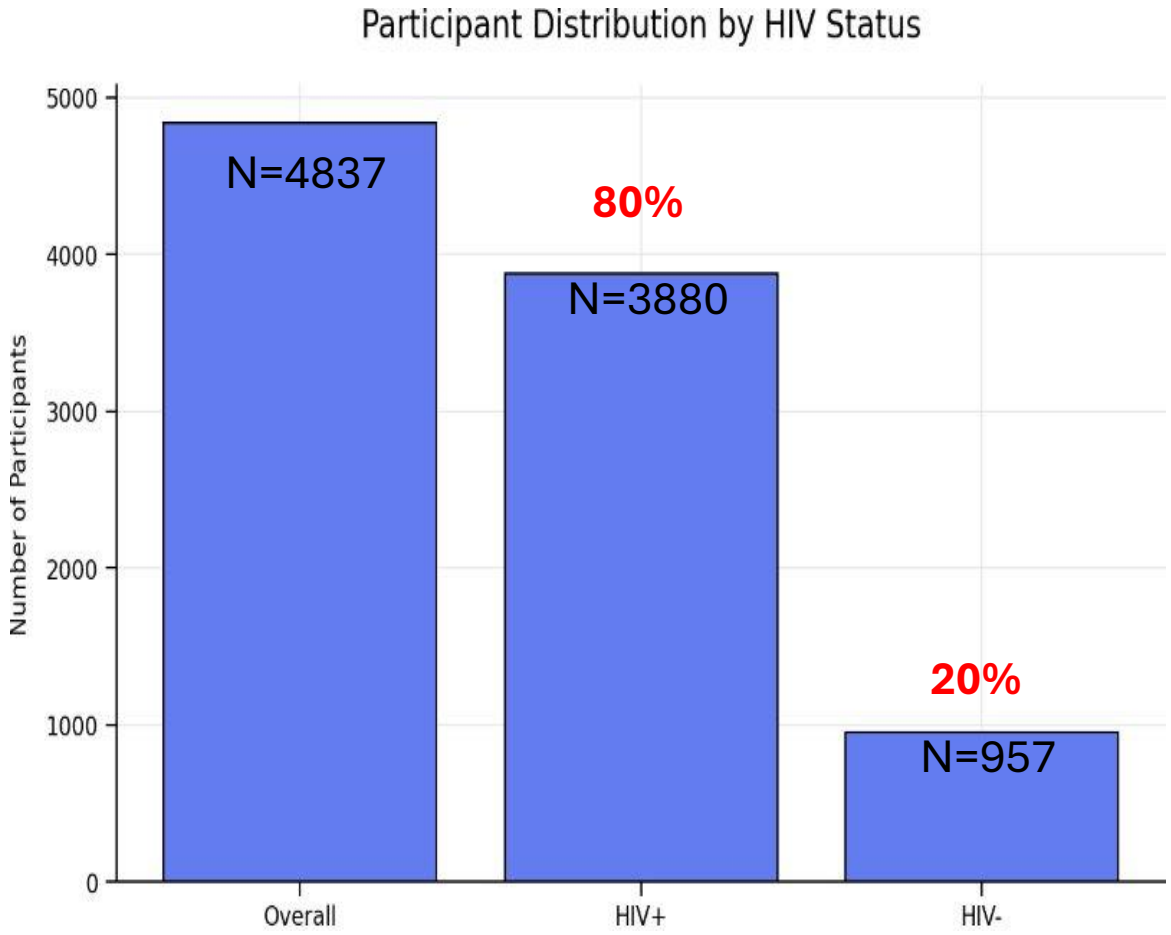
TUTTPlus STUDY RESULTS

KwaZulu Natal

Participants Characteristic

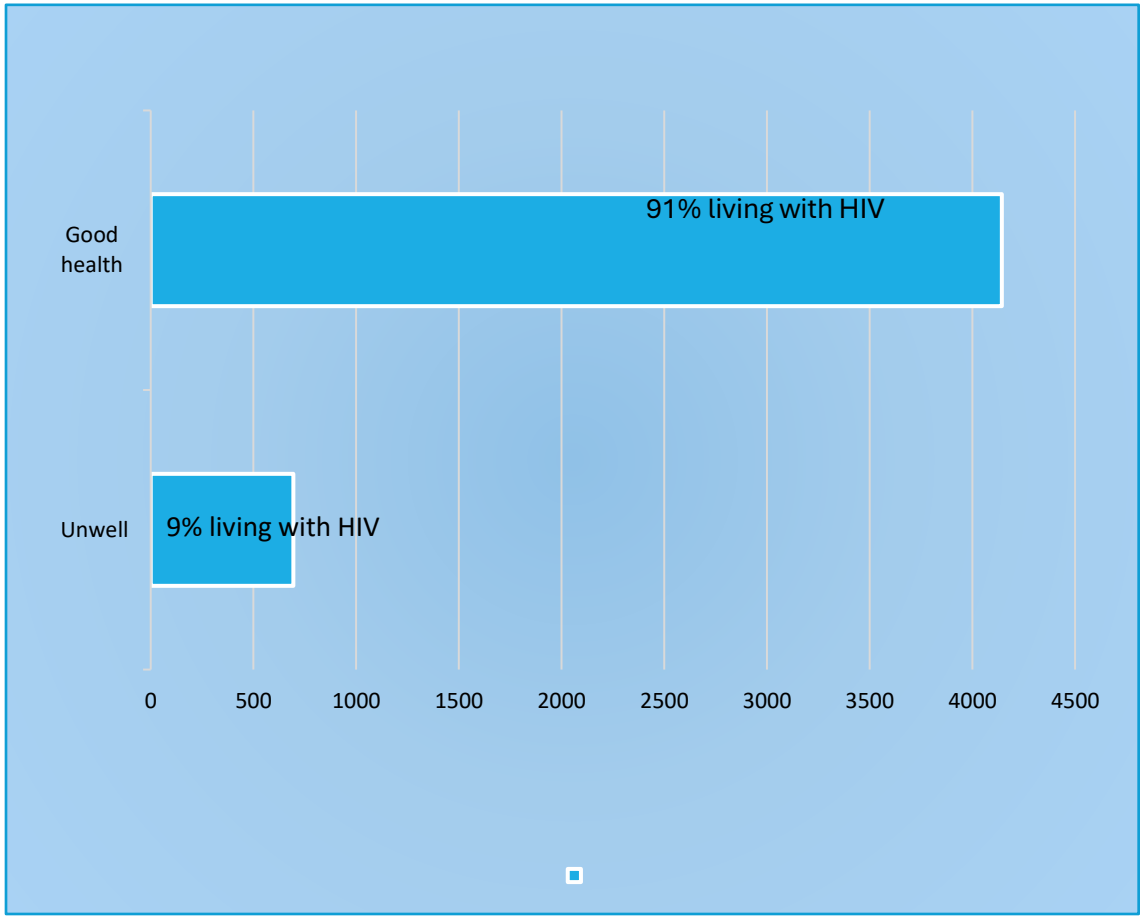






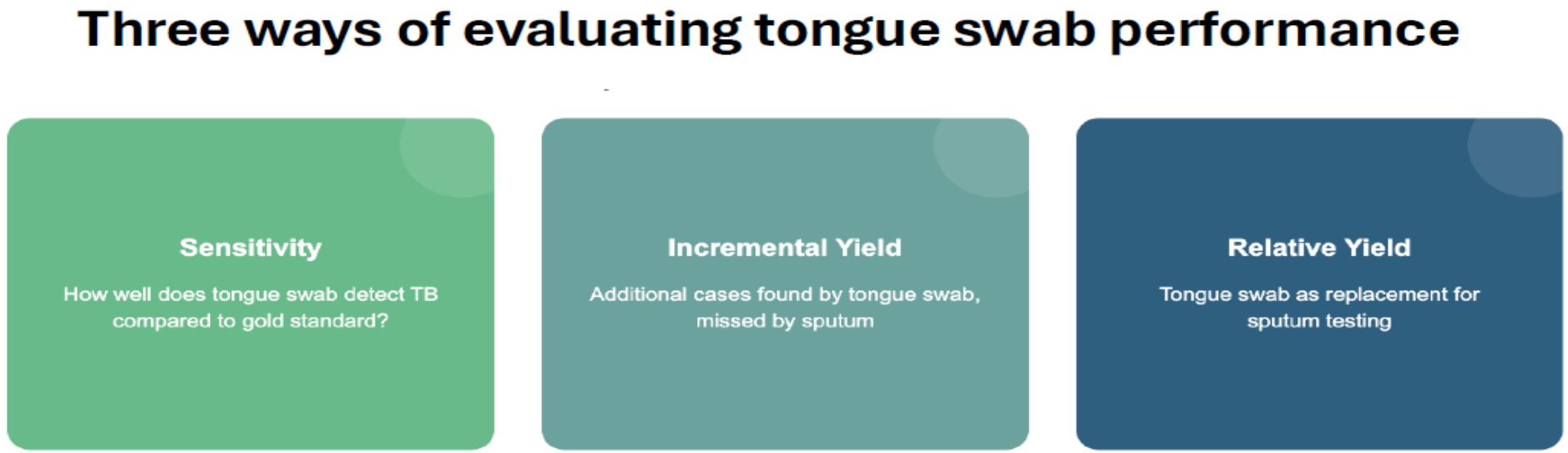
TB Risk Factors

Indicator for collecting the sputum	KZN (%)
WHO 4-symptom screen (W4SS) positive	12%
TUTT Group	
PLHIV	76%
Close TB Contact	22%
Previous TB	5%



Tongue Swab vs Sputum

We assessed the yield differential (the difference in proportions testing positive on tongue swab vs sputum) in the TUTT population PLHIV, household contact of adolescent or adult (≥18 years) with TB in the past year, and those with TB in the last two years

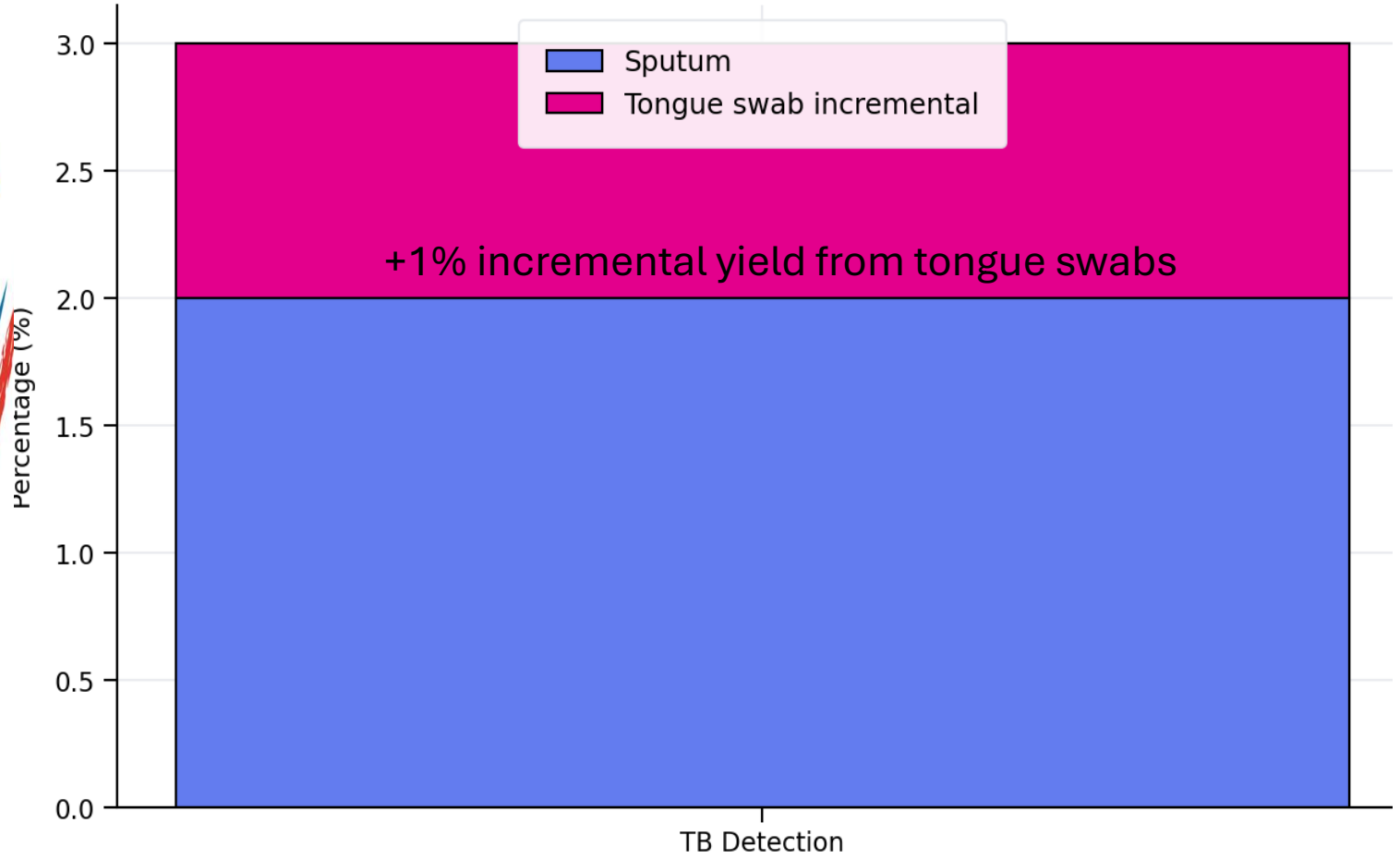


Concordance between tongue swab and sputum Xpert results N=4837 Enrolled

Tongue Swab	Sputum		
	Positive	**Negative**	**Total**
Positive	10	65	75
Negative	55	4,364	4,419
Total	65	4,429	4,494

Positive Percentage Agreement (PPA): 13.3% (95% CI 7.4–22.8)

Incremental Yield and Sensitivity of Tongue Swabs



Tongue swabs add a 73% incremental diagnostic yield, increasing overall TB detection from 2% to 3%.

Sensitivity was higher in:

- *Individuals with TB symptoms* vs asymptomatic 57% vs 28%

Conclusion

Sputum testing detects 2% TB positive cases but has challenges like:

- Patient inability to produce sputum
- Sample loss, contamination, leaking

Tongue swabs samples are easier to collect, less invasive, and have fewer missing samples compared to sputum testing.

Combining sputum and tongue swabs improves case finding and strengthens TB control in high-burden areas.

Tongue swab is recommended as an additional TB diagnostic method.

Acknowledgements