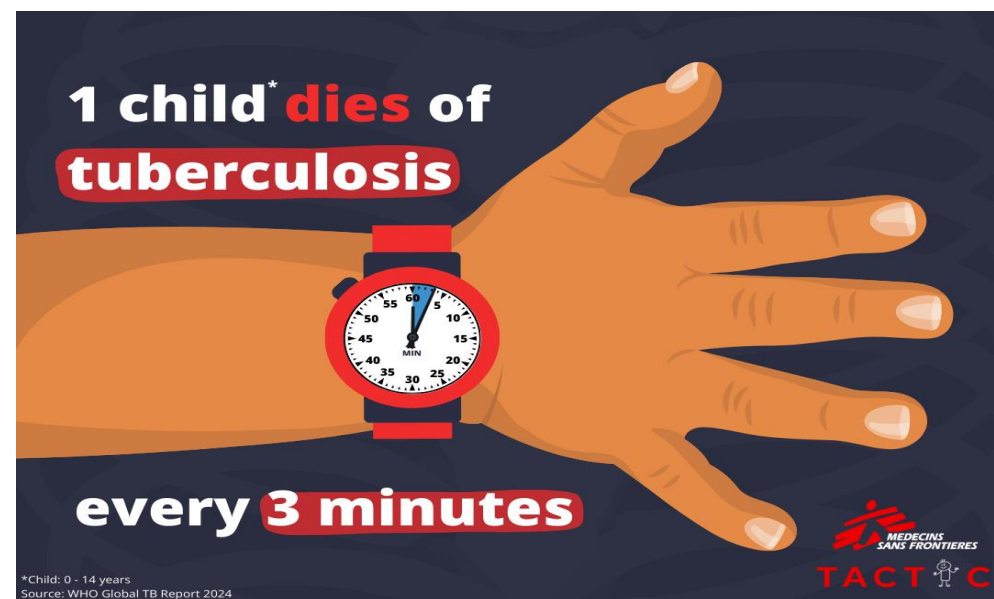


Finding Children with TB in Africa: TACTiC Experience of Using the Treatment Decision Algorithms.

Umar Kareto, National TB Implementer, MSF Nigeria.

Accelerating Progress towards Ending TB in the African Region, Addis Ababa, Ethiopia.

24th June 2026



Our goal: reduce deaths from TB in children by increasing the number of children put on TB treatment and prevention

 **Implementation** of WHO recommendations: temporary support to strengthen capacity, training, technical and material support.

 **Operational research** in 6 sites: Feasibility, acceptability and validation of recommendations

 **National and international advocacy**: for implementation of recommendations and for research and development of new tools adapted to children.



Implementation: Where are we?

👤 **12 countries**

👤 **> 50 projects**

👤 **Variety of projects**

👤 Nutrition

👤 Paediatrics

👤 HIV and TB

👤 Different settings: Unstable,
high density urban, remote, rural



Operational research: WHO treatment decision algorithms (TDAs): “TB-Algo-Ped study”



Operational Research: TB Algo Ped Study



Multi-country study with three components

1. Prospective
diagnostic study

2. Analysis of routine
program data

3. Qualitative
(feasibility/acceptability)



Children under 10 with signs or symptoms of TB

Health workers, policy makers,
program managers, key
informants, caregivers



Study Design, Sites and Population

Study population:

- Children <10 years with signs or symptoms of PTB

Guinea:

- Children living with HIV
- Ambulatory
- 4 Health Centres

Niger:

- Malnourished children
- Hospitalized
- Nutritional centre

Nigeria:

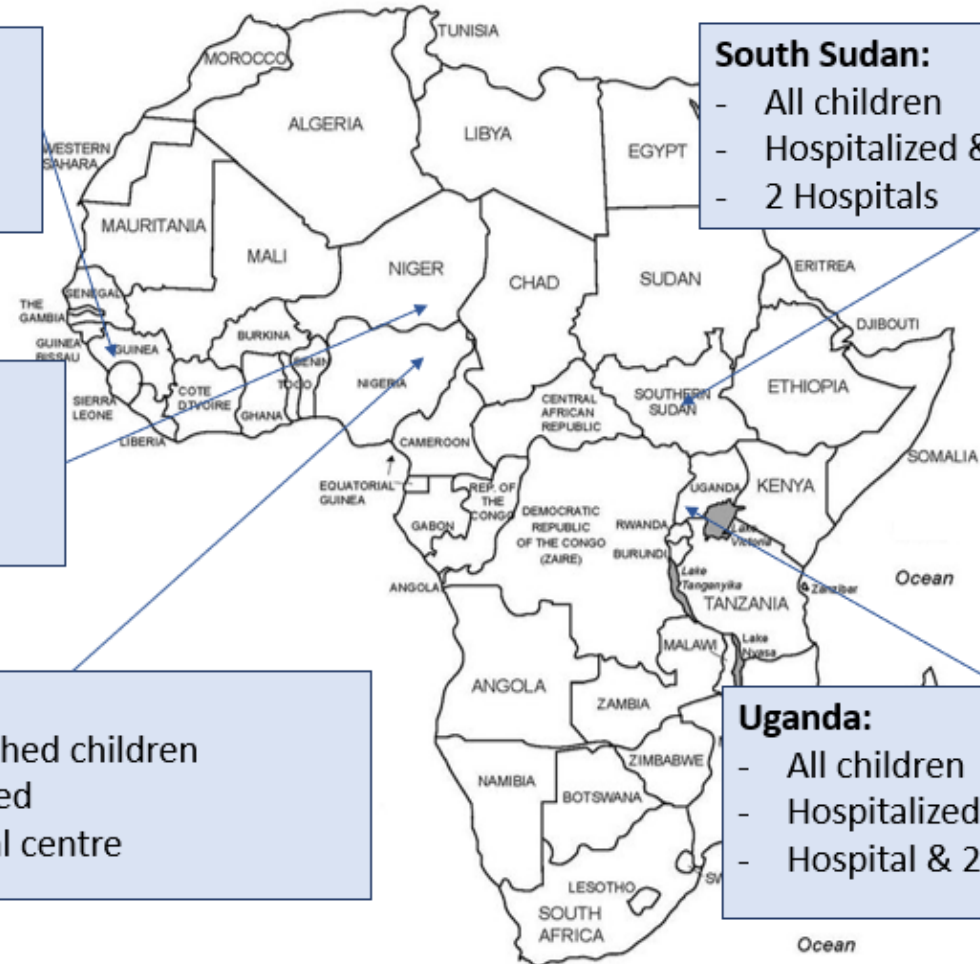
- Malnourished children
- Hospitalized
- Nutritional centre

South Sudan:

- All children
- Hospitalized & Ambulatory
- 2 Hospitals

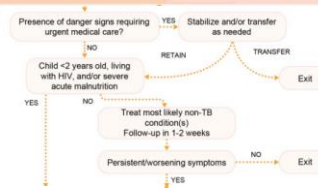
Uganda:

- All children
- Hospitalized & Ambulatory
- Hospital & 2 Health Centres



Methods

Child <10 years with symptoms suggestive of pulmonary TB



TB investigations (if available):

GeneXpert, TB-LAM

YES

NO / NOT PERFORMED / RESULT NOT YET AVAILABLE

History of **contact** with TB

YES

NO

Score based on signs/symptoms and chest X-ray

Signs and symptoms

Cough longer than 2 weeks
Fever longer than 2 weeks
Lethargy
Weight loss
Haemoptysis (cough up blood)
Night sweats
Swollen lymph nodes
Tachycardia
Tachypnoea

+2
+5
+3
+3
+4
+2
+4
+2
-1

Chest X-ray

Cavity/Cavities
Enlarged lymph nodes
Opacities
Miliary Pattern
Effusion

+6
+17
+5
+15
+8

Sum A: —

Sum B: —

YES

Is Sum A + Sum B > 10?

NO

**Review if
score 10 or
less in 7-10
days**

Score based on signs/symptoms

Signs and symptoms

Cough longer than 2 weeks
Fever longer than 2 weeks
Lethargy
Weight loss
Haemoptysis
Night sweats
Swollen lymph nodes
Tachycardia
Tachypnoea

+5
+10
+4
+5
+9
+6
+7
+4
+2

Sum: —

YES

Is Sum > 10?

NO

Do not treat with
TB treatment.
Follow-up in 1-2
weeks.

All children were reviewed after 2 months (with or without TB diagnosis)

Algorithm
A

Algorithm
B

Results: Characteristics of the population (N=1846)

	n	%
Age, median years [IQR]	1.7	[0.8 – 3]
Female	856	46.4%
Hospitalized	1262	68.4%
Living with HIV	210	11.4%
Started on TB treatment	502	27.2%



Results: Main reason for treatment initiation (N=502)

Positive
GeneXpert
5.6 %

Positive TB-LAM
(only HIV-positive)
6 %

History of TB Contact
18.7 %

Clinical or clinical-radiological score >10
64.5 %

Clinical diagnosis
despite score ≤10
5.2 %



Operational Research: Interim results TB Algo Ped Study

A. TB ALGO PED study Objective: to assess diagnostic accuracy of the new **Treatment decision algorithms** as well as feasibility and acceptability of implementation

Prospective diagnostic Study (N=1846)

High sensitivity (89.9%) -
Acceptable specificity (84.4%)

Analysis of routine program data

Two-fold increase in TB treatment initiation rates after TDA introduction.

Mixed-methods study

Feasible to implement

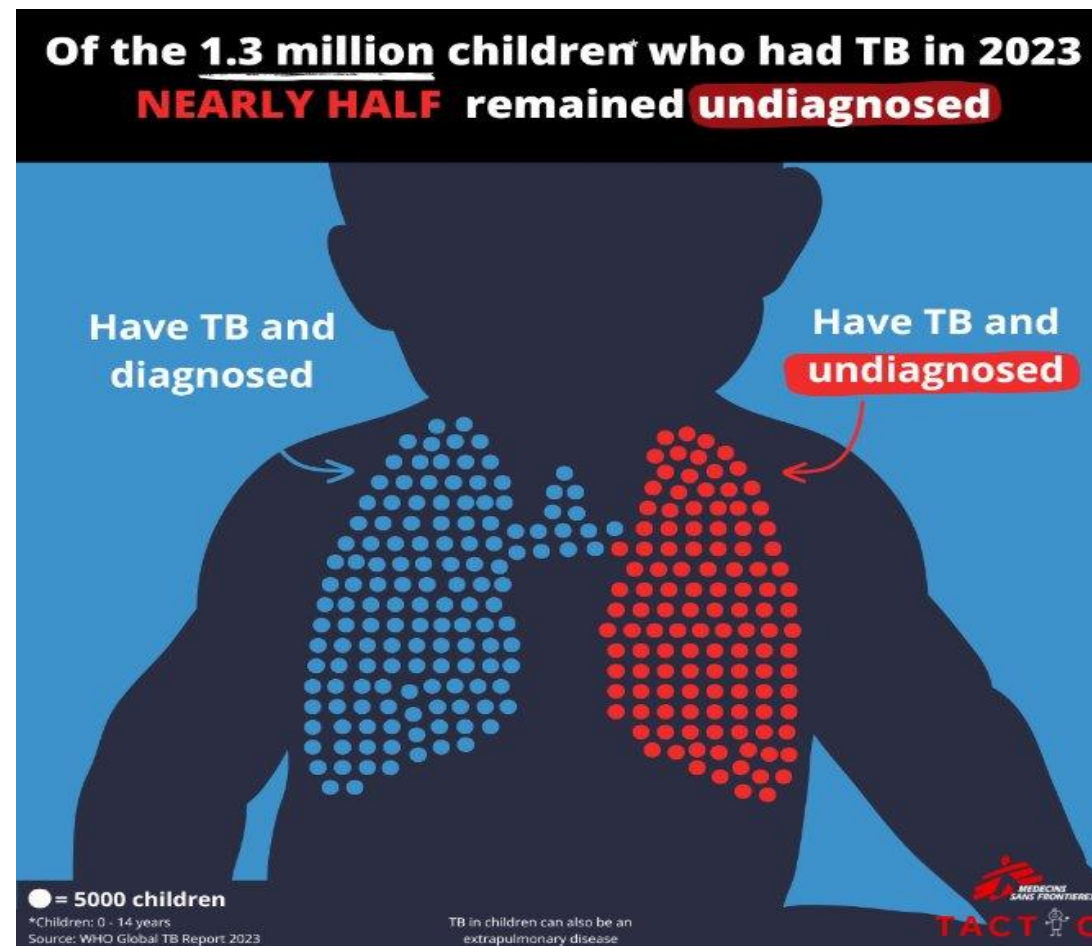
Well accepted by health workers and facilitated TB diagnosis.

Diagnostic process acceptable for caregivers

Reference standard: Confirmed TB, unconfirmed TB, unlikely TB international consensus case definitions for children (Graham et al. CID 2015).



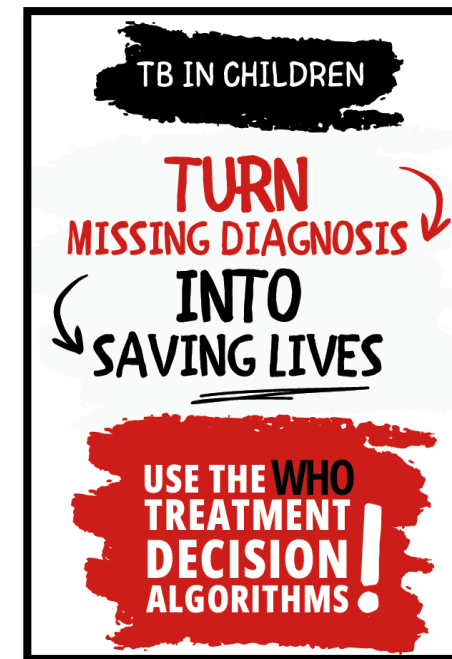
**Widespread
implementation in
varied contexts
outside the study**



Implementation: What impact?

On average, the **number of children diagnosed has doubled** with the implementation of the WHO treatment decision algorithms

- 🧑 **In all** projects (i.e not only in TB centres)
- 🧑 Nearly 5000 **children were diagnosed with TB in 2025** in MSF projects.
- 🧑 **Increase sustained over time**, feasible in challenging contexts
- 🧑 Need to anticipate increased need for pediatric formulations and GeneXpert cartridges



Implementation: Lessons learned?

🧑 **Integration** is necessary! TB needs to be the business of all, not just TB programs

🧑 TB data system integration

🧑 Capacity building: TB focal points

🧑 **X-ray useful**

🧑 **Context adapted approach**

🧑 **Advocacy for paediatric TB**

Too many children do not have access to chest X-ray

CHEST X-RAY

- High sensitivity
- Low operational cost
- Rapid results

There is lack of expertise in high TB burden settings to interpret children's chest X-ray images



Lessons learned in nutrition facilities with large numbers of children with severe acute malnutrition (high food insecurity)

Identify the children with SAM most at risk for TB to be assessed with the algorithms

Adjust the timing of first algorithm scoring during the course of hospitalisation (not necessarily at admission)

Prioritise diagnostic resources (access to X-ray, GeneXpert) if needed

Ongoing capacity building to sustaining algorithm use over months and years

Outstanding questions: how to score Kwashiorkor patients

Conclusions

- ✧ The TDAs show a good diagnostic accuracy in children
- ✧ Most children diagnosed with a clinical and clinical-radiological score
- ✧ Increased TB diagnosis and treatment after the introduction of the algorithms.
- ✧ In high-volume resource-limited malnutrition settings, contextual adaptation to identify children at higher risk is necessary
- Pediatric TB requires a multisectoral approach and political prioritisation

Treatment decision algorithms can reduce the current gap in the number of missing children



THANK YOU!



**SCAN THIS QR CODE TO VISIT OUR
WEBSITE**



TACT C
Test Avoid Cure TB in Children



Results – Perceptions of health workers

Barriers *before* TDAs implementation



Healthcare facilities level:

- Chest X-ray and test **failures**
- Dependence on equipment in other healthcare facilities



Health workers level:

Lack of knowledge and difficulty to identify TB signs

Perceptions *after* TDAs implementation



- **Speeds up** treatment decision
- Gives more **autonomy** to health facilities



- **Workload** increased



- **Score** gives tangible evidence for decision making
- Increased feeling of **efficiency** and **autonomy**
- **Easy** for all staff to use
- Enhances **professional skills**

Results – Perceptions of health workers

Barriers *before* TDAs implementation



Healthcare facilities level:

- Chest X-ray and test **failures**
- Dependence on equipment in other healthcare facilities



Health workers level:

Lack of knowledge and difficulty to identify TB signs



Interaction with caregivers:

- Misconceptions of TB
- Fear of stigmatisation
- Delays in seeking care

Perceptions *after* TDAs implementation



- **Speeds up** treatment decision
- Gives more **autonomy** to health facilities



- **Workload** increased



- **Score** gives tangible evidence for decision making
- Increased feeling of **efficiency** and **autonomy**
- **Easy** for all staff to use
- Enhances **professional skills**



- According to clinicians: TDAs results are limited by **communication barriers** with caregivers