

Diagnosing tuberculosis in children using the new WHO algorithm in Niger



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Background

Médecins Sans Frontières (MSF) in Maradi, Niger since 2014: Paediatric (<5 years) and nutrition project

Underdiagnosis of TB in children

- Average of 35 TB cases/year amongst 24.000 children treated for severe acute malnutrition (SAM) every year (Figures 2-3)

Treatment decision algorithms for pulmonary TB (PTB) in children (Figure 1)

- Recommended by World Health Organisation to increase diagnosis of TB

Methods

Implementation of algorithms in:

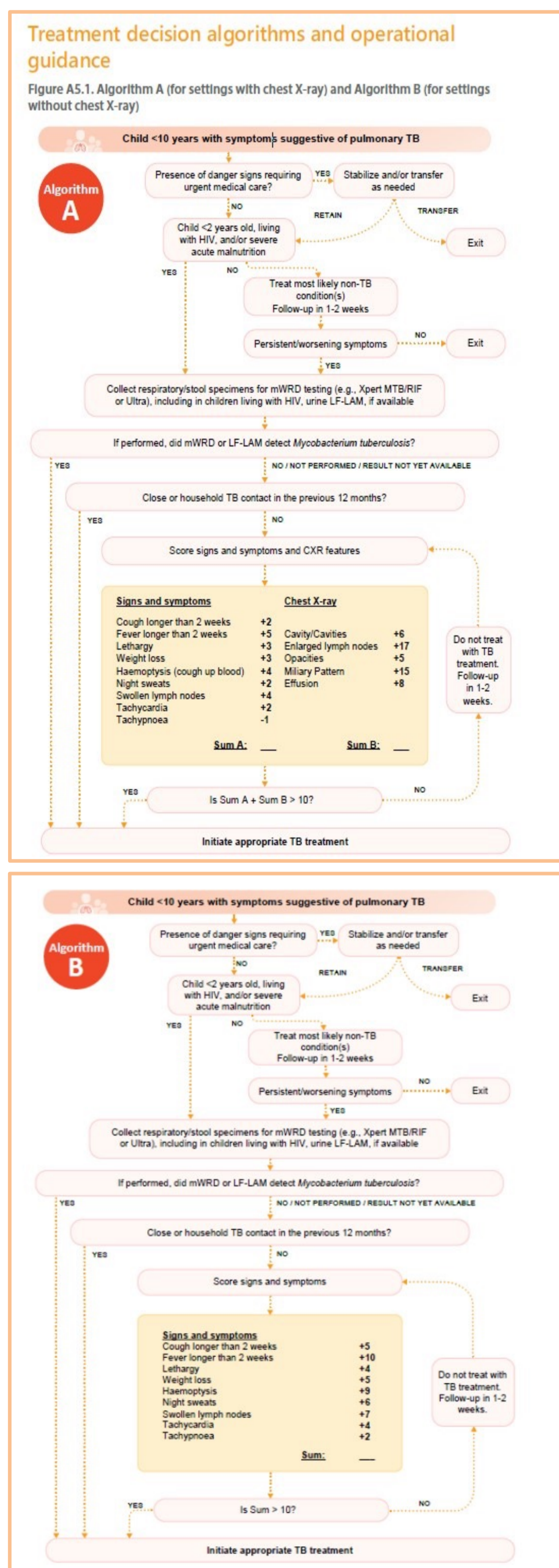
- Madarounfa District Hospital: Inpatient Therapeutic Feeding Centre (ITFC) and paediatric ward
- Dan Issa Ambulatory Therapeutic Feeding Centre (ATFC)

Definition of presumptive TB:

ATFC and paediatric ward: Symptoms suggestive of PTB (cough > 2 weeks, fever > 2 weeks, close contact with a TB case, no response to medical/nutritional treatment)

ITFC: All hospitalised SAM children

Figure 1: Treatment decision algorithms



WHO Operational handbook on tuberculosis. Module 5: Management of tuberculosis in children and adolescents. World Health Organization 2022, p. 239

Conclusions

- 5 times more TB cases diagnosed compared to the 5 preceding years after introduction of treatment decision algorithms
- Positivity of bacteriological examinations as expected
- High number of TB cases amongst hospitalised SAM children

Lessons learnt

- Increased capacity and confidence of clinicians to diagnose TB in children
- Open questions remain on how to identify children with presumed TB
 - All SAM?
 - Do we need a screening step (not included in the algorithm)?

Results

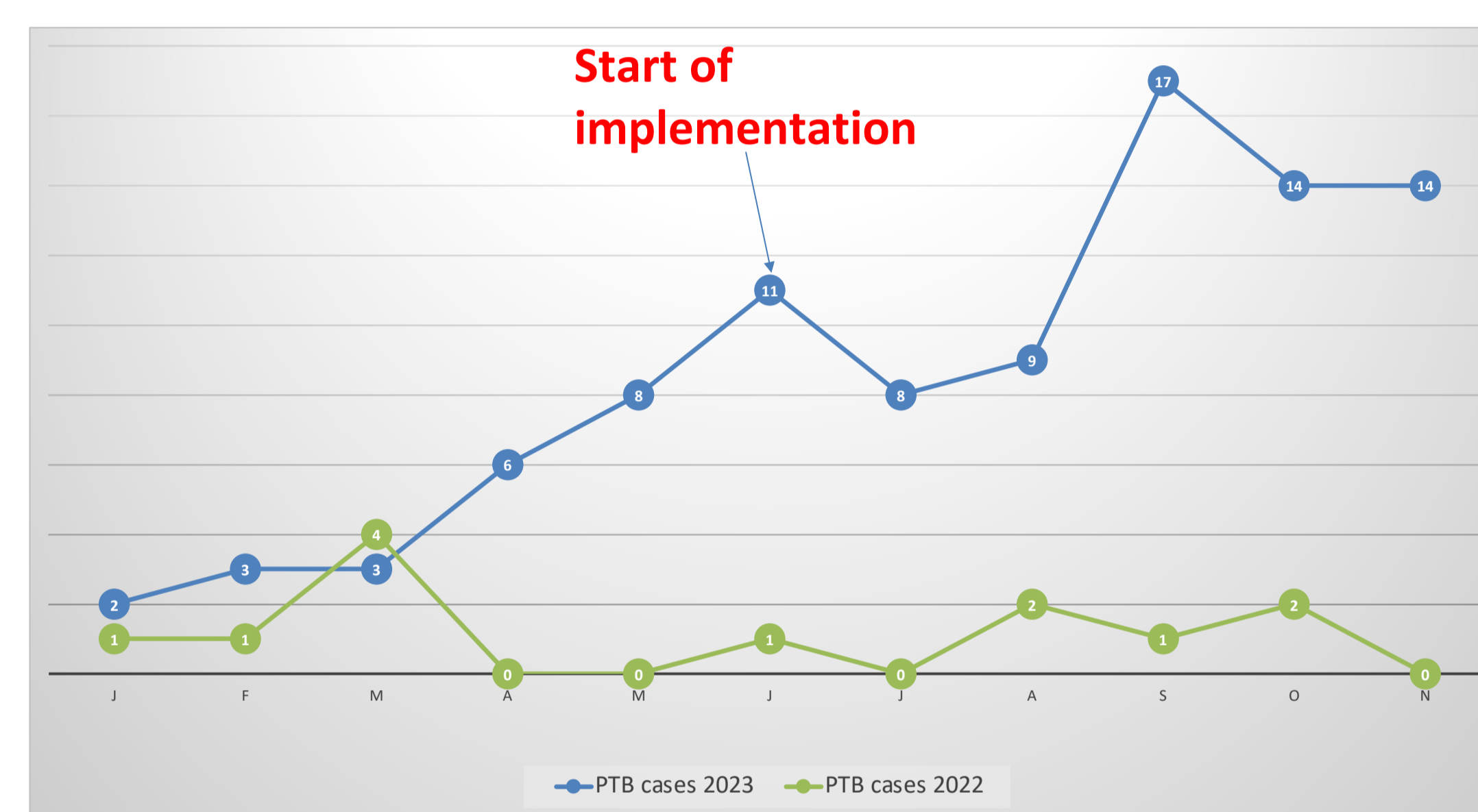


Figure 2: SAM children diagnosed with PTB in Madarounfa (MSF OCP), 2022-2023

Start of implementation June 2023

- 95 SAM children diagnosed with TB in 2023
 - 73 (77%) from June to November
- >10 times more than in the same period of 2022

Programmatic data Médecins Sans Frontières OCP Maradi

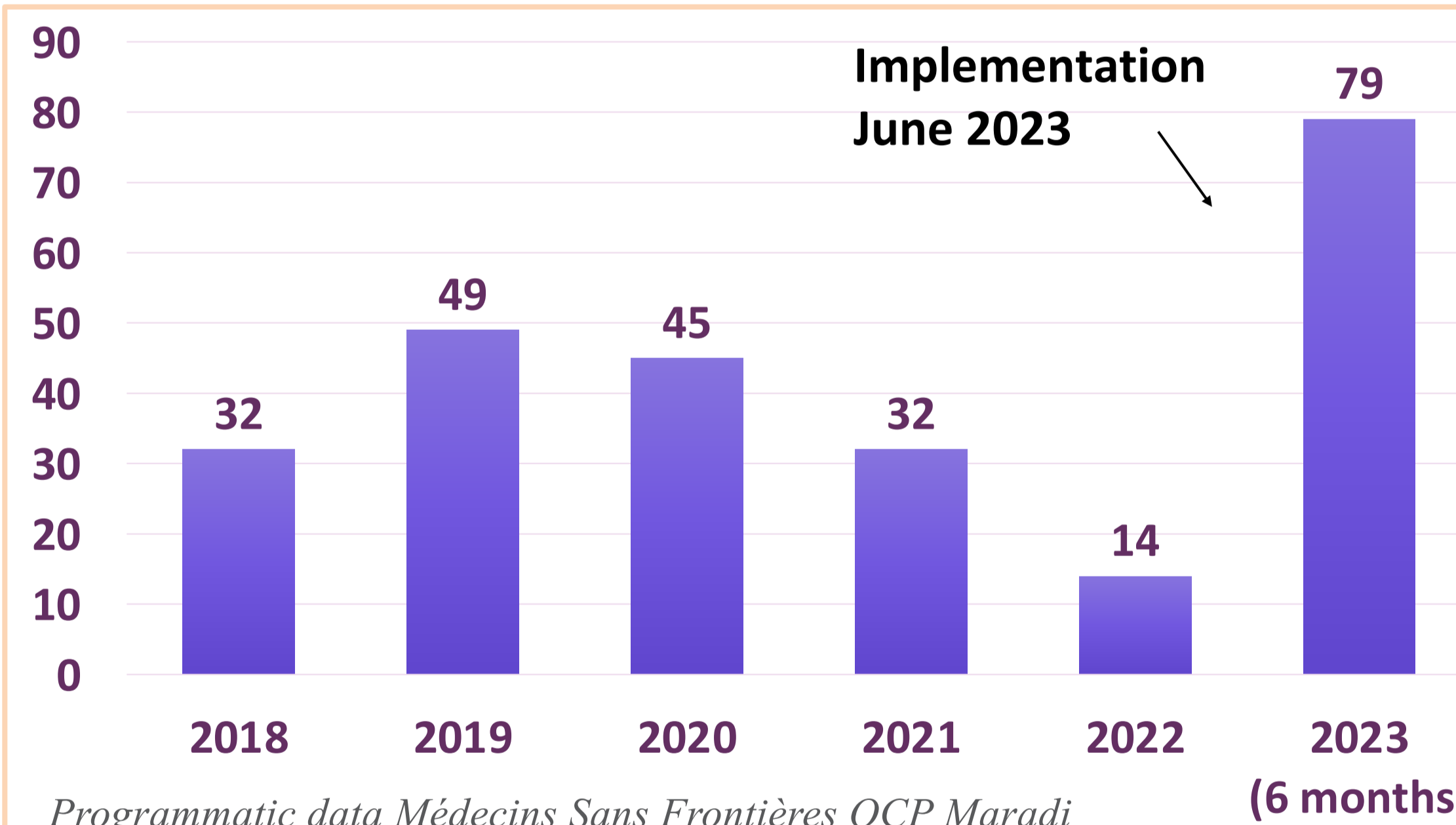


Figure 3: Paediatric PTB cases notified in Madarounfa (MSF OCP), 2018-2023

- 79 children diagnosed with TB in 6 months
 - 6 in paediatric ward
 - 73 SAM (Table 1)
 - 59 in ITFC
 - 14 in ATFC
- 5 times more than the average of 2018-2022

Programmatic data Médecins Sans Frontières OCP Maradi

Table 1: SAM children evaluated with WHO algorithm for PTB in ATFC and ITFC

SAM children	Admitted	Evaluated with algorithm	Started on TB treatment
ATFC	7161	33 (0.46%)	14 (42%)
ITFC	2941	2033 (69%)	59 (3%)

Programmatic data Médecins Sans Frontières OCP Maradi

- Low number of presumptive TB in ATFC however almost half diagnosed with TB
- Not all children in ITFC assessed with the algorithm (100% should be considered presumptive TB)

Table 2: Xpert tests results (more than one sample/patient)

	Stool	Gastric aspiration	CSF	TOTAL
Xpert tests done	138	142	1	281
Xpert tests positive	7(5%)	9(6,3%)	1	17 (6%, 10 children)

Programmatic data Médecins Sans Frontières OCP Maradi

- 10 children (15% of children diagnosed in the hospital) with positive bacteriological examination

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