

Introducing DR-TB diagnosis and treatment for children into TB programmes:

a case study from Tajikistan

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Structure

- Background:
 - MSF and TB
 - Tajikistan and TB
- MSF paediatric DR-TB project in Tajikistan
- Lessons learnt
 - Swaying attention to children in an NTP
 - Tools for treating DR-TB

MSF and TB (2011)

DS-TB

- >25 yrs
- 39 countries
- 79 projects
- 26,600 cases

DR-TB

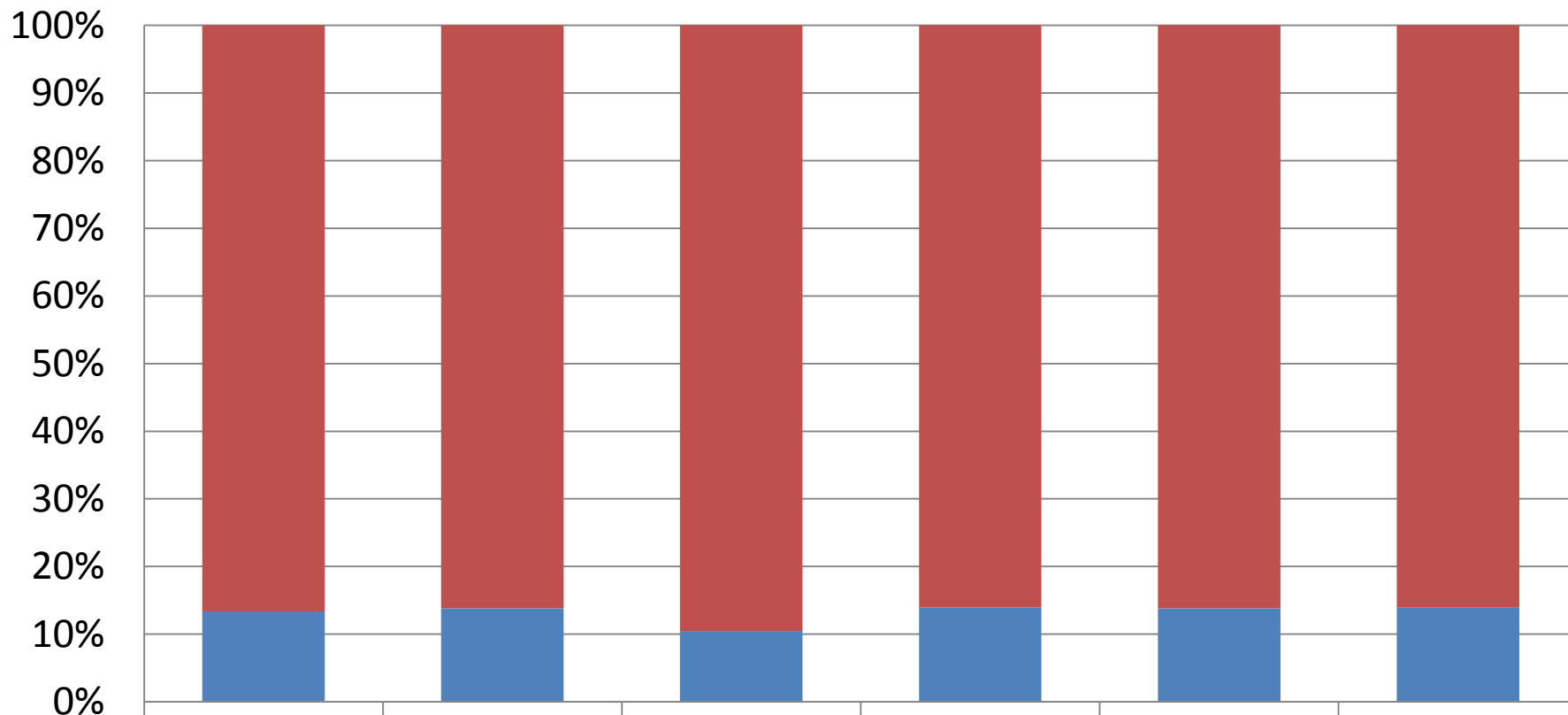
- Since 1999
- 21 countries
- 39 projects
- 1,300 patients

WHERE **MSF** TREATS TB (2010)



- **MSF treats drug-sensitive tuberculosis in:** Armenia, Burkina Faso, Cambodia, China, Central African Republic, Democratic Republic of Congo, Ethiopia, Georgia, Guinea, India, Kenya, Kyrgyzstan, Liberia, Lesotho, Malawi, Mozambique, Myanmar, Russia, Sierra Leone, South Africa, South Sudan, Somalia, Swaziland, Uganda, Uzbekistan and Zimbabwe (as of January 2012)
- **MSF treats drug-resistant tuberculosis in:** Abkhazia, Armenia, Cambodia, Colombia, Democratic Republic of Congo, Georgia, India, Kenya, Kyrgyzstan, Myanmar, South Africa, South Sudan, Swaziland, Tajikistan, Uganda, Ukraine, Uzbekistan and Zimbabwe (as of January 2012)

Childhood TB case notifications in MSF projects, 2006-2011



	2006	2007	2008	2009	2010	2011
> 15 yrs	22013	22412	28708	14550	19706	22957
Children	3391	3586	3360	2354	3159	3730

Tajikistan



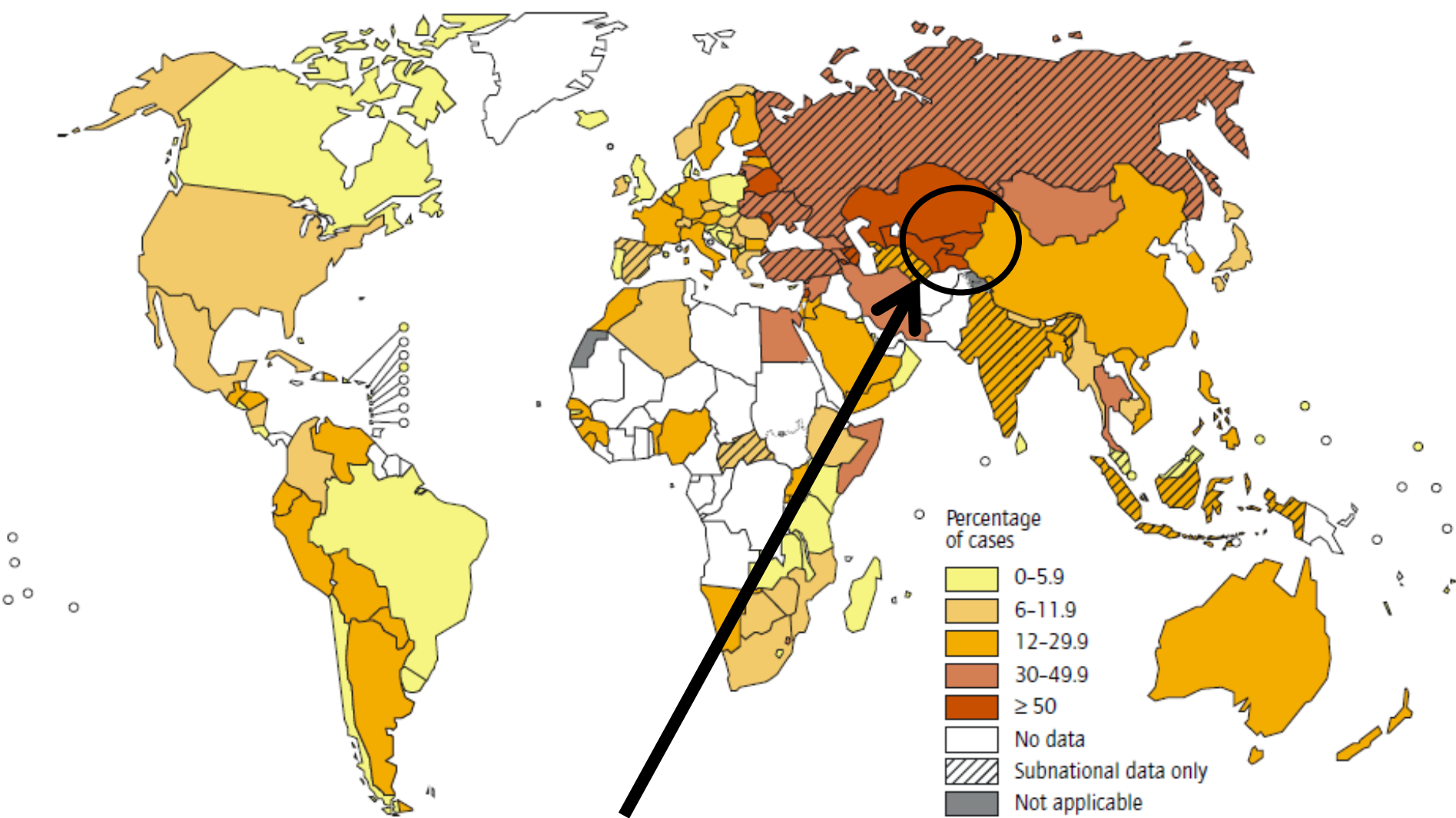




TB in Tajikistan

- TB incidence: 198 per 100,000
- MDR TB prevalence: 13% (new), 54% (re-tt)
- TB tt success rates: 81% (new), 70% (re-tt)
- TB/HIV: 2%
- Adult HIV prevalence: 0.2%

FIGURE 4.3 Percentage of previously treated TB cases with MDR-TB^a



Tajikistan: high MDR-TB burden country

Child and adolescent DR-TB case notification following a phased implementation of a paediatric TB project in Tajikistan

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Background

Tajikistan has the highest TB incidence in the WHO

Pie chart of the treatment history of children diagnosed with MDR-TB, Tajikistan up to October 2012

1

- June 2011: Opened project
- October 2011: SLD supply + clinical involvement

2

- November 2011: First child on DR-TB treatment
- April 2012: Draft Tajikistan paed guidelines

3

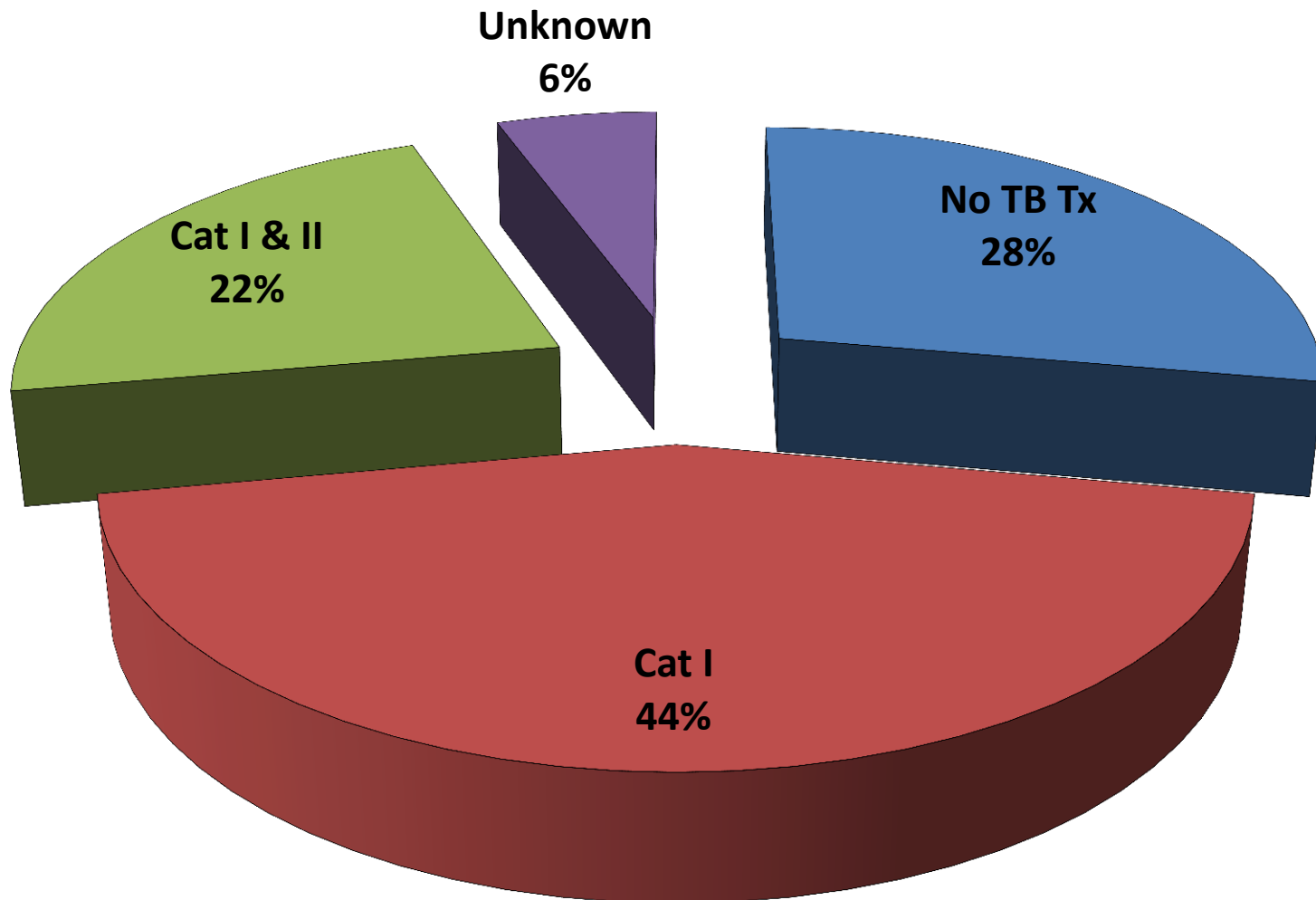
- November 2012: Renovations with IS + GX in place

by end October 2012

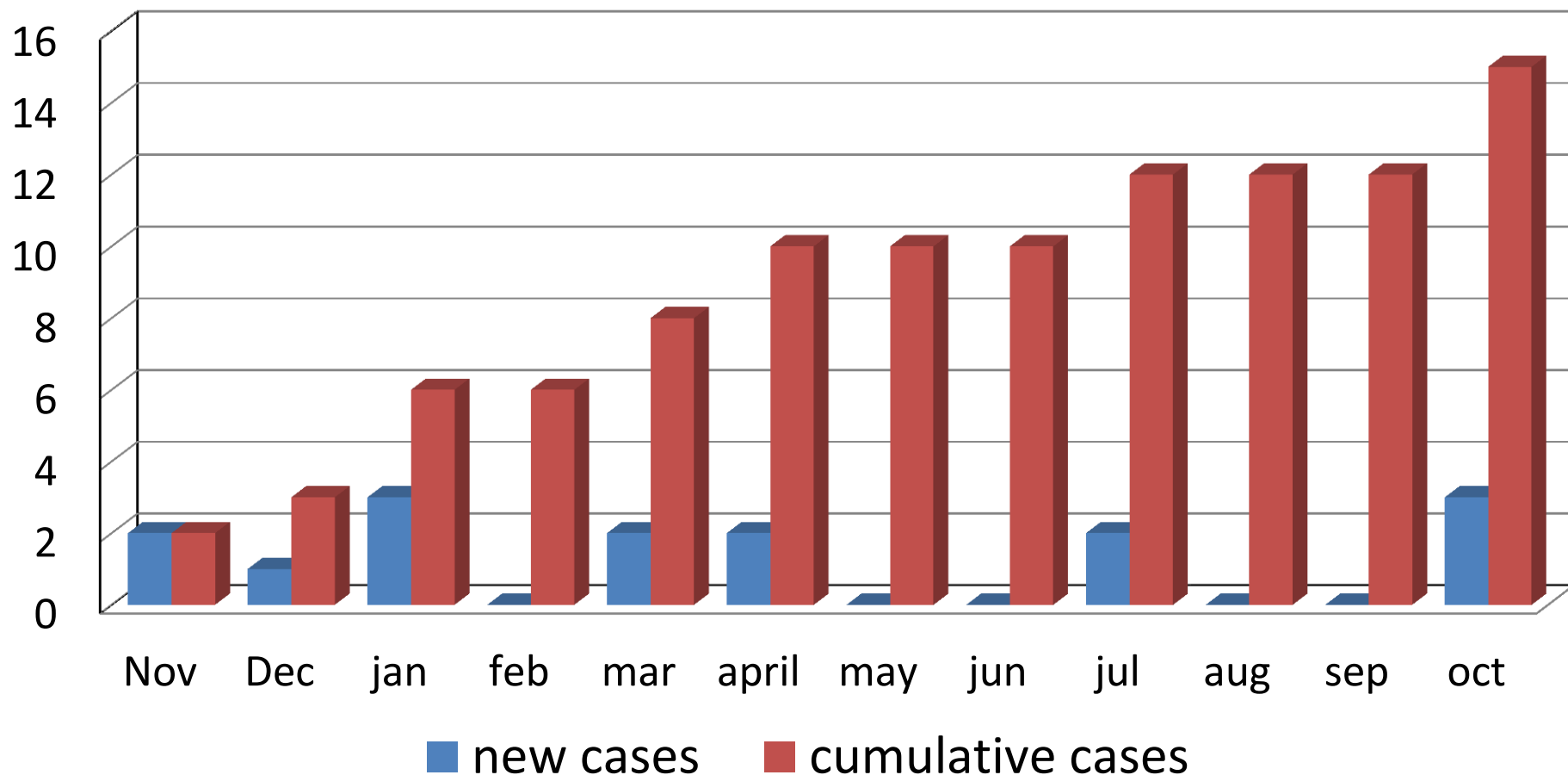
- 18 children diagnosed
- 8 biological confirmation
- Mean age – 9.5 yrs
- 8 girls
- 39% HH contact



Pie chart of the treatment history of children diagnosed with MDR-TB, Tajikistan up to October 2012



MDR-TB treatment initiation in children, Dushanbe, Nov 2011 to Oct 2012



Lessons learnt

Swaying attention to children

Specific
training

Treatment tools

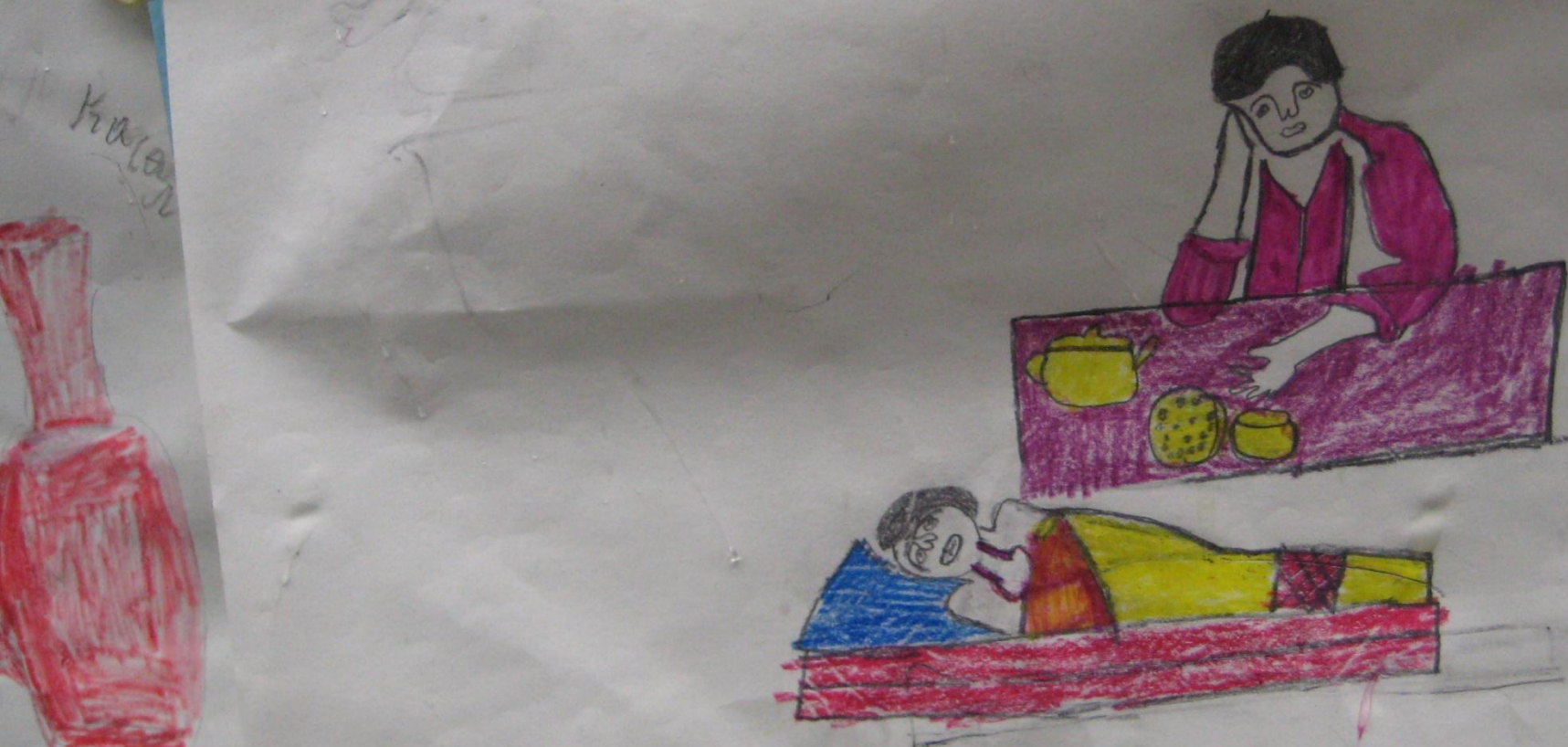
TB diagnosis
confirmatory tools

Monitoring tools

Swaying attention to children

- Involve respected paediatric unit
- Set aside paediatric resources and targets
- Integrate paediatric DR-TB guidance in national guidelines/protocols

Tools for treating DR-TB in children



Drug dosage tables

Annex 2E: MDR TB drug dosages table

weight in kg	Capreomycin	Amikacin	Levofloxacin		Moxifloxacin		Protionamide		Cycloserine		PAS		Pyrazinamide	Ethambutol	
dose	15-30mg/kg	15-30mg/kg	7.5 - 10mg/kg * od for > 5, bd for < 5		7.5-10mg/kg		15-20mg/kg		10-20mg/kg		200 - 300mg/kg		30-40mg /kg	15-25mg	
formulation	1g in 4ml dilution	2ml vial	tablet	Susp 77ml	tablet	Susp 77ml	tablet		1cp in 10ml		PASER 4g sachet		tablet	tablet	tablet
	250mg/ml	250mg/ml	250mg	25mg/ml	400mg	20mg/ml	250mg		250mg	25mg/ml	Daily	Twice Daily	400mg	100mg	400mg
1 to 4	discuss dosage and formulation options with TB advisor														
5	0.5	0.5	0.25	1.5			2	0.5			3	1000	500	0.5	1
6	0.5	0.5	0.25	2			3	0.5			4	1500	750	0.5	1
7	0.75	0.75	0.25	2.5			3	0.5			4	2000	1000	0.5	1
8	0.75	0.75	0.25	3			3	0.5			5	2000	1000	0.75	2
9	1	1	0.5	3			4	0.5			6	2500	1250	0.75	2
10	1	1	0.5	3	0.25		4	0.5			6	2500	1250	1	2
11	1	1	0.5	4	0.25		5	1			7	3000	1500	1	2
12	1	1	0.5	4	0.25		5	1	1		7	3000	1500	1	2
13	1	1	0.5	4	0.25		6	1	1		8	3500	1500	1	3
14	1.5	1.5	0.5	5	0.5		6	1	1		9	4000	2000	1	3
15	1.5	1.5	0.5	5	0.5		6	1	1		10	4000	2000	1.5	3
16	1.5	1.5	0.5	5	0.5		7	1	1			4000	2000	1.5	3
17	2	2	1	6	0.5		7	1	1			4500	2000	1.5	3
18	2	2	1	6	0.5		7	1.5	1			5000	2500	1.5	4
19	2	2	1	6	0.5		8	1.5	1			5000	2500	1.5	4
20	2	2	1	6	0.5		8	1.5	1			5000	2500	1.5	4
21	2	2	1	7	0.5		8	1.5	1			5500	3000	2	4
22	2	2	1	7	0.5		9	1.5	1			5500	3000	2	4
23	2	2	1	7	0.5		9	1.5	1			6000	3000	2	5
24	2	2	1	8	0.5		10	1.5	1			6000	3000	2	5
25	2.5	2.5	1	8	0.5		10	1.5	2			6500	3000	2	5
26	2.5	2.5	1	8	0.5		10	2	2			6500	3500	2	5

Annex 2E:

weight in kg	Capreomycin	Amikacin	Levofloxacin		
dose	15-30mg/kg	15-30mg/kg	7.5 - 10mg/kg ^a od for > 5, bd for < 5		
formulation	1g in 4ml dilution	2ml vial	tablet	Susp 7.5ml	tablet
	250mg/ml	250mg/ml	250mg	25mg/ml	400mg
1 to 4	discuss dose				
5	0.5	0.5	0.25	1.5	
6	0.5	0.5	0.25	2	
7	0.75	0.75	0.25	2.5	
8	0.75	0.75	0.25	3	
9	1	1	0.5	3	

Drug formulations

- Cycloserine
- Moxifloxacin
- Amikacin vs Kanamycin
- Side effects drugs



Simple, practical and clear preparation instructions

Education and counselling

- Age adapted messages
- Age and context adapted visual tools
- Trained counsellors



Conclusion

- **Introduction of diagnosis and treatment of DR-TB in children in NTPs is feasible BUT**
 - Doesn't come natural in most NTPs
 - Requires specific resources and championing
 - International guidance is insufficient
 - Country-specific tools need to be prepared
 - Confirmatory tests are as important