



CHILDHOOD TUBERCULOSIS

QUICK FACTS

- Globally, at least one million children become ill with Tuberculosis (TB) and another 140,000 die annually - that is nearly 400 children dying every day from TB (WHO Report 2017).
- In Kenya, 7,714 children became ill with TB disease in 2017, representing 9.1% of all TB cases (TIBU). TB in children can be treated, and most children tolerate treatment quite well
- Kenya was the first country in the world to nationally roll-out improved TB medicines for children
- The child-friendly fixed-dose formulations come in the correct doses, are soluble, pleasantly flavored and easy to administer. These medicines will improve treatment and child survival from TB
- Preventive therapy is highly effective in children exposed to TB: Only 13% of eligible children in Kenya were put on Isoniazid Preventive Therapy (IPT) in 2017

CHILDHOOD TB IN KENYA

Tuberculosis (TB) is the fourth cause of death among infectious diseases in Kenya (KNBS). Kenya is a high TB burden country with children estimated to comprise 10-15% of all TB cases, yet 2-3% of these are often 'hiding in plain sight' as they remain undiagnosed and untreated despite seeking services at health facilities.

Infants and young children are at higher risk of developing severe, often fatal forms of TB, such as TB meningitis, which can leave them blind, deaf, paralyzed or mentally disabled.

Deaths from TB are higher among children under the age of five (5.2%) than those between the ages of six and 14 years (4.6 %). Drug resistant TB (DR TB) in children is on the rise with 27 children initiated on treatment in 2017.

DIAGNOSING TB IN CHILDREN

- Bacteriologically confirmed TB is diagnosed when any specimen is positive for MTB
- Xpert® MTB/RIF is the first line test for all presumptive TB among infants, children and adolescents. The test has better sensitivity than sputum smear microscopy and checks for Rifampicin susceptibility
- Child specimens for lab testing include sputum, gastric aspirate, nasopharyngeal aspirates, cerebral spinal fluid, pleural fluid, pericardial fluid, Ascitic fluid and fine needle aspirates
- Culture and DST should be used to determine susceptibility patterns in drug resistant TB
- A clinical diagnosis of TB is made when a child has two or more of the following suggestive symptoms: **persistent cough, fever, poor weight gain and lethargy**, plus two or more of the following: **positive contact, abnormal respiratory signs, abnormal chest x-ray, or positive Mantoux**
- For any child with negative Xpert results or from whom a sputum sample cannot be obtained and has typical symptoms of TB, a clinical diagnosis of TB should be made

TREATING CHILDHOOD TB

In October 2016, Kenya rolled out fixed dose combination child-friendly TB medicines. These medicines are dispersible in water and have a flavoured taste that makes them easier to prescribe and administer, hence improving treatment adherence.

Recommended treatment for drug susceptible TB is a six-month regimen: two (2) months of Isoniazid, Rifampicin, Ethambutol and Pyrazinamide and four (4) months of Rifampicin and Isoniazid

Treatment of Rifampicin resistance TB (RR-TB) and Multi-Drug Resistant TB (MDR-TB) includes the use of Isoniazid (H), Rifampicin (R), Ethambutol (E), Pyrazinamide (Z), Kanamycin (Km), Capreomycin (Cm), Levofloxacin (Lfx), Moxifloxacin (Mfx), Cycloserine (Cs), Prothionamide (Pto), Paser (PAS), Clofazimine (Cfz), Amoxicillin/Clavulanate (Amx/Clv) for a minimum treatment duration of 20 months

A shorter-term regimen of 9-12 months is now recommended for eligible patients with pulmonary RR-TB or MDR-TB that is not resistant to second line drugs

Always administer Pyridoxine (1-2mg/kg daily) during TB treatment to avoid peripheral neuropathy.

Without treatment, mortality from TB is HIGH!

TREATMENT DOSAGES FOR CHILDHOOD TB

DOSAGES FOR A CHILD WEIGHING UP TO 3.9 KG

| Weight bands (kg) | Number of tablets | | | | |
|-------------------|--------------------|-----------|---|--------------------|---|
| | Intensive Phase | | | Continuation Phase | |
| | RHZ (75/50/150 mg) | E (100mg) | How to reconstitute the medicines | RH(75/50mg) | How to reconstitute the medicines |
| Less than 2 Kg | ¼ | ¼ | Dissolve one (1) tablet of RHZ in 20 ml of safe drinking water. Once fully dissolved, add the completely crushed one (1) tablet of Ethambutol and give 5ml (1/4) of this solution measured with a syringe. | ¼ | Dissolve one (1) tablet of RH in 20 ml of safe drinking water. Once fully dissolved, give 5ml (1/4) of this solution measured with a syringe. |
| 2 – 2.9 | ½ | ½ | Dissolve one (1) tablet of RHZ in 20 ml of safe drinking water. Once fully dissolved, add the completely crushed one (1) tablet of Ethambutol and give 10ml (1/2) of this solution measured with a syringe. | ½ | Dissolve one (1) tablet of RH in 20 ml of safe drinking water. Once fully dissolved, give 10ml (1/2) of this solution measured with a syringe. |
| 3 – 3.9 | ¾ | ¾ | Dissolve one (1) tablet of RHZ in 20 ml of safe drinking water. Once fully dissolved, add the completely crushed one (1) tablet of Ethambutol and give 15ml (3/4) of this solution measured with a syringe. | ¾ | Dissolve one (1) tablet of RH in 20 ml of safe drinking water. Once fully dissolved, give 15ml (3/4) of this solution measured with a syringe. |

Ethambutol is not dispersible. Crush it completely before adding to the prepared solution of RHZ during the intensive phase.

After giving the child their dose for that day, discard the rest of the solution. Prepare a fresh solution every day.

DOSAGES FOR A CHILD WEIGHING 4-25 KG

| Weight bands (kg) | Number of tablets | | | | |
|-------------------|------------------------------------|-----------|---|--------------------|---|
| | Intensive Phase | | | Continuation Phase | |
| | RHZ (75/50/150 mg) | E (100mg) | How to reconstitute the medicines | RH(75/50mg) | How to reconstitute the medicines |
| 4 - 7.9 | 1 | 1 | Dissolve the tablet(s) of RHZ in 20 ml of safe drinking water. Once fully dissolved, add the completely crushed tablet(s) of Ethambutol and give ALL of this solution to the child | 1 | Dissolve the tablet(s) of RH in 20 ml of safe drinking water. Once fully dissolved give ALL of this solution to the child. |
| 8 - 11.9 | 2 | 2 | | 2 | |
| 12 - 15.9 | 3 | 3 | | 3 | |
| 16 - 24.9 | 4 | 4 | | 4 | |
| 25 kg and above | Use adult dosages and preparations | | | | |

⚠️ DOSAGES FOR A CHILD WEIGHING 25KGS AND ABOVE (ADULT FORMULATION DOSAGE TABLE)

| Weight band (kg) | Number of tablets | |
|------------------|-------------------------|--------------------|
| | Intensive Phase | Continuation Phase |
| | RHZE (150/75/400/275mg) | RH(150/75mg) |
| 25 – 39 | 2 | 2 |
| 40 – 54 | 3 | 3 |

OUR CALL TO ACTION

Childhood TB can be solved with the right response. However, much more needs to be done to bring childhood TB out of the shadows and improve child survival.

- Actively screen children for TB at all points of care: Maternal and Child Health Clinics, Comprehensive Care Centres, Nutrition Clinics, Out-Patient and In-Patient Departments
- Suspect TB in any child with a cough, fever, failure to gain weight, night sweats or reduced playfulness
- Always investigate for TB in children presenting with any of these symptoms or those with a diagnosis of recurrent pneumonia
- Xpert® MTB/RIF is the first line test for all presumptive TB for infants, children and adolescents. Refer specimen to GeneXpert sites
- Remember, the diagnosis of TB in children can be either bacteriological or clinical
- For any TB diagnosis made, always screen and investigate all other household members for TB especially children who are more likely to get TB from household members with the disease
- All children below the age of five years exposed to TB but without active TB disease should be put on Isoniazid Preventive Therapy (IPT) for six months
- Adherence to treatment is key! Counsel caregivers of children found to have TB, or those on IPT

NO CHILD SHOULD DIE OF TB!



A TB

FREE GENERATION



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