



**Sentinel
Project**
on pediatric drug-
resistant tuberculosis

Stop TB Partnership
GLOBAL DRUG FACILITY

STANDARD OPERATING PROCEDURES FOR ADMINISTRATION OF DISPERSIBLE FORMULATIONS OF SECOND-LINE DRUGS FOR CLINICAL/NURSING PERSONNEL

Clinical Staff and Personnel
Draft 2.0, July 29, 2019

PRODUCT DOSING

Please see drug information sheets for details, but recommended dosing is:

Clofazimine: 2-5mg/kg/day

Cycloserine: 15-20mg/kg/day

Ethambutol: 15-25 mg/kg/day

Ethionamide: 15-20mg/kg/day

Isoniazid: 15-20 mg/kg/day

Levofloxacin: 15-20mg/kg/day

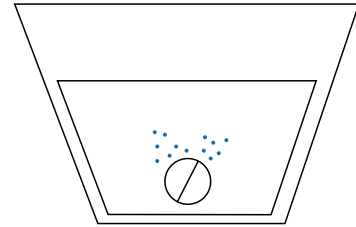
Linezolid: 10-12mg/kg once daily for children < 12 years who weigh 16kg or more; 15mg/kg once daily in children < 12 years who weigh less than 16kg; 10mg/kg once daily in children 12 years and above

Moxifloxacin: 10-15 mg/kg/day

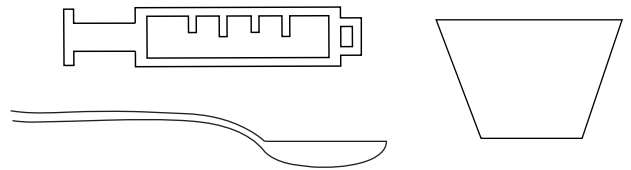
Pyrazinamide: 30-40mg/kg/day

PRODUCT PREPARATION AND DISPENSING:

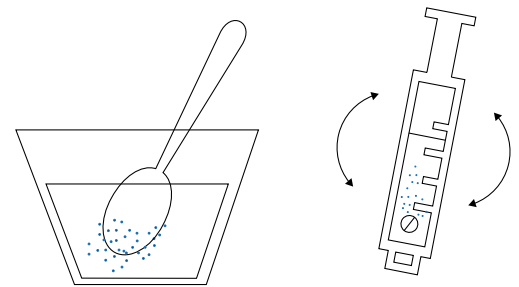
It is recommended that the tablets of each of the pediatric formulations of the medication listed above (ethambutol, ethionamide, isoniazid, levofloxacin, linezolid, moxifloxacin, pyrazinamide; cycloserine comes in a capsule formulation and specific instructions are below) be dissolved in 50mL of water (or other liquids such as breast milk, porridge, yogurt, etc.) and then given to the child within 10 minutes. *However, 50mL may be too much liquid for children, and clinical experience suggests in field studies that as little as 5mL per tablet can be used to dissolve the tablet.*



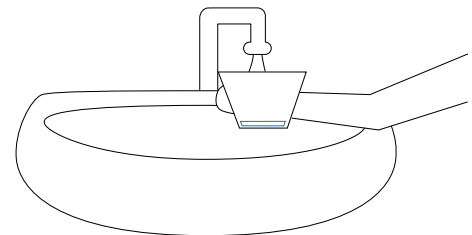
Potential dispensing containers include medicine cups, spoons, or syringes (with the plunger removed and a finger placed over the opening).



The liquid should first be placed in the dispensing container (minimum 5mL/maximum 50mL per tablet). The tablets should then be added to the liquid and the solution agitated until the tablet is completely dissolved. The child should be given the dissolved tablet mixture within 10 minutes of preparation. If the solution sits longer than 10 minutes then it should be re-shaken/stirred/agitated again until the dissolved tablet is completely mixed.



Another 5mL of liquid should be added to any remaining residue in the dispensing container, swirled to dissolve any remaining residue, and then administered to the child.



Any leftover liquid should be discarded according to standard operating procedures.

CLOFAZIMINE

There are finally tablets of clofazimine that are available for use in children. The tablets are available at strengths of 50mg or 100mg. They are technically not dispersible tablets, but they can be dissolved in water. However, the time they take to dissolve is anywhere from 2-5 minutes. It is recommended that they be prepared by dissolving them in 5mL to 10mL of water or another solution as described above, but that the tablet be given 5 minutes to dissolve prior to administration. Extra stirring prior to administration should also be performed.

CYCLOSERINE

The cycloserine capsules should be administered and swallowed whole whenever possible.

If not possible, for children weighing 6kg and above, the capsule can be opened and its contents can be dissolved in 50mL of water (or other liquids such as breast milk, porridge, yogurt, etc.) and then given to the child within 10 minutes. However, 50mL may be too much liquid for children, and as little as 5mL per capsule can be used to dissolve the capsule contents.

Potential dispensing containers include medicine cups, spoons, or syringes (with the plunger removed and a finger placed over the opening). Syringes may be easier to use in infants and very young children, but it is important that they be thoroughly cleaned after each administration.

The liquid should first be placed in the dispensing container (minimum 5mL maximum 50mL per capsule). The capsule's contents should then be added to the liquid and the solution agitated until completely dissolved. The child should be given the dissolved mixture within 10 minutes of preparation. If the solution sits longer than 10 minutes then it should be re-shaken/stirred/agitated again until it is completely mixed.

Another 5mL of liquid should be added to any remaining residue in the dispensing container, swirled to dissolve any remaining residue, and then administered to the child.

Any leftover liquid should be discarded according to standard operating procedures.

SUSPENSION PREPARATION

For younger children or those whose weights are less than 6kg, a solution of the capsule's contents should be made using water or breast milk or another appropriate liquid. This solution should be prepared with 12mL of liquid to make a suspension. This should be prepared in a syringe or medicine cup and then immediately administered to the child to give the proper dose per weight.

Drugs	Quantity of Liquid for Suspension Preparation	Suspension concentration in mg/mL
Cycloserine: 125mg capsule	12mL	10mg/mL

IF A CHILD VOMITS AND IT IS WITHIN 30 MINUTES OF THE DOSE BEING ADMINISTERED, THEN THE DOSE SHOULD BE READMINISTERED. IF THE CHILD VOMITS 30 MINUTES AFTER THE DOSE HAS BEEN ADMINISTERED, THERE IS NO NEED TO READMINISTER THE DOSE.

IF THE CHILD NEEDS TO BE HELD DOWN TO ADMINISTER THE MEDICATION, MAKE SURE HIS OR HER HEAD IS RAISED ABOVE 30 DEGREES. THIS WILL REDUCE THE RISK OF CHOKING AND ASPIRATION.