



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

**Stop TB Partnership**  
**GLOBAL DRUG FACILITY**

# **STANDARD OPERATING PROCEDURES FOR STORAGE AND ADMINISTRATION OF DISPERSIBLE FORMULATIONS OF SECOND-LINE DRUGS FOR PHARMACY PERSONNEL**

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Pharmacy Staff and Personnel  
Draft 1.0  
November 26, 2018

## **PRODUCT STORAGE**

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**Ethionamide** 125 mg scored, dispersible tablet: Store below 30°C in dry place. Protect from light. Store in original container.

**Isoniazid** 100mg scored, dispersible tablet: Do not store above 30°C. Store in a dry place, protect from light. Store in original container

**Levofloxacin** 100mg scored, dispersible tablet: Do not store above 30°C. Store in a dry place, protect from light. Store in original container

**Linezolid** 150mg scored, dispersible tablets. Storage conditions not yet specified.

**Moxifloxacin** 100mg scored, dispersible tablets: Do not store above 30°C. Store in a dry place, protect from light. Store in original container

**Pyrazinamide** 150mg scored, dispersible tablets: Store below 30°C in dry place. Protect from light. Store in original container.

**Ethambutol** 100mg scored, dispersible tablets: Store below 30°C, in dry place protected from light. Store tablets in blisters in the provided carton.

## **PRODUCT PREPARATION AND DISPENSING**

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Product can be dispensed in whole tablet form for mixing on the wards or can be prepared in liquid in the pharmacy. However, if it is mixed in the pharmacy, it should ideally be given within 10 minutes to the child.

It is recommended that the tablets of each of the products listed above (ethambutol, ethionamide, isoniazid, levofloxacin, linezolid, moxifloxacin, pyrazinamide) 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 it has been determined 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.

## SUSPENSION PREPARATION

For younger children or those whose weights are less than 4 kg, a solution of the dispersible tablets should be made using water or breast milk or another appropriate liquid. This solution should be prepared with 10-15mL of liquid (see table below) 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
Ethambutol: 100mg tablet	10mL	10mg/mL
Ethionamide: 125mg tablet	12mL	10mg/mL
Isoniazid 100mg tablet	10mL	10mg/mL
Linezolid: 150mg tablet	15mL	10mg/mL
Levofloxacin: 100mg tablet	10mL	10mg/mL
Moxifloxacin: 100mg tablets	10mL	10mg/mL
Pyrazinamide: 150mg tablet	15mL	10mg/mL

## PRODUCT STORAGE

Cycloserine 125mg capsule: Store below 25°C, in dry place protected from light. Store tablets in blisters in the provided carton. Do not use if capsules appear brittle or swollen.

## PRODUCT PREPARATION AND DISPENSING

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The cycloserine capsules can be administered and swallowed whole if possible

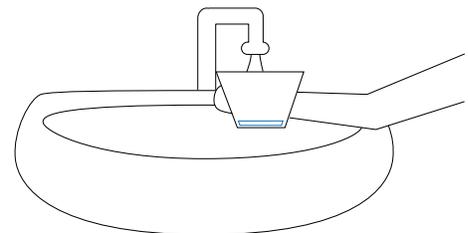
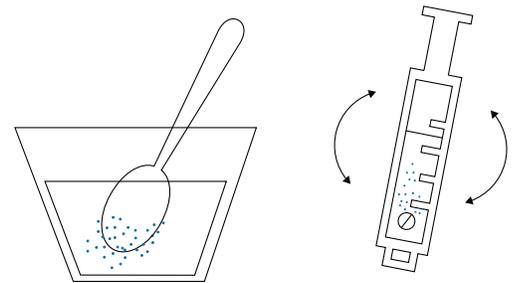
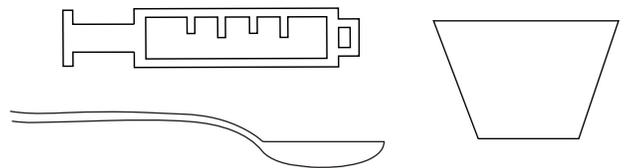
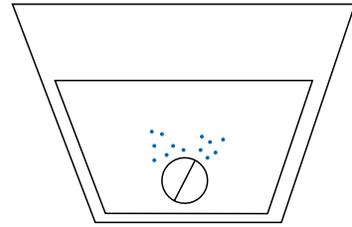
If not, the capsule can be opened and its contents can be dissolved in 50mL of water (or other liquids such as breast milk, porridge, yogurt, etc.) and then given to the child within 10 minutes. However, 50mL may be too much liquid for children, and as little as 5mL per tablet can be used to dissolve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



## SUSPENSION PREPARATION

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For younger children or those whose weights are less than 6 kg, a solution of the dispersible tablets 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 tablet	12mL	10mg/mL