

PATH

# Facilitating Adherence to Amoxicillin Dispersible Tablets for the Treatment of Childhood Pneumonia

Design, Development, and Evaluation of Job Aid and User-Friendly Product Presentations

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on behalf of the  
PATH Pneumonia  
Innovations Team

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# OUTLINE

- Project Overview
- Background
- Examples from other countries and limitations
- Current prototypes of job aid and product presentations
- Objectives and design of pilot
- Implementation in Bangladesh
- Key considerations
- Coordination study
- Questions and comments

# Project Overview: Rationale

## Rationale:

- Lack of knowledge and skills among healthcare providers and caregivers regarding the appropriate use of amoxicillin DT for the treatment of childhood pneumonia is a barrier to use.
- Healthcare providers need better guidance on how (and why) to dispense amoxicillin DT and explain the steps for administration by caregivers.
- Caregivers need to have a clear understanding of how (and why) to administer amoxicillin DT to their children—including the dosage, frequency, timing and need for adherence to treatment.
- Inappropriate administration -> inadequate treatment, relapse, and potential drug resistance.

# Project Overview: Objectives

## **Design and Development - *completed***

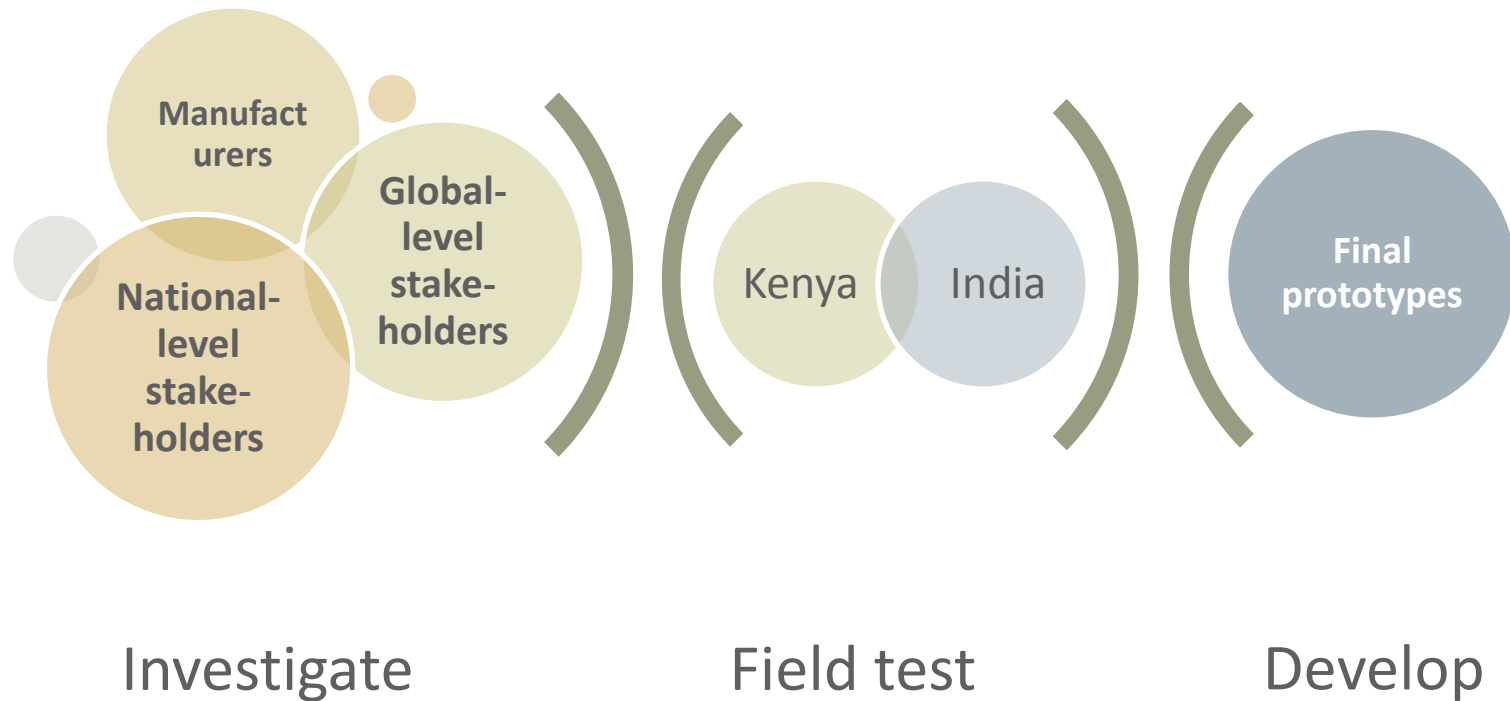
- To design a job aid and product presentations to facilitate adherence to amoxicillin DT for the treatment of childhood pneumonia.

## **Evaluation- *ongoing***

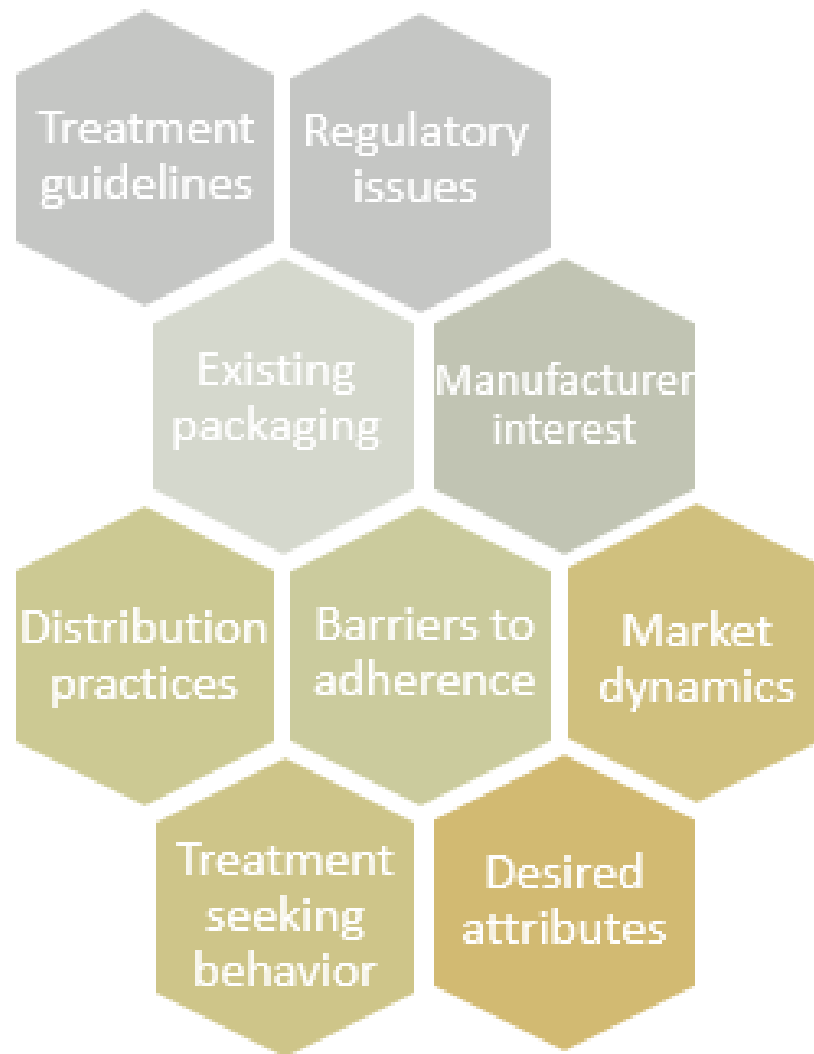
- To conduct a pilot field evaluation of the prototype amoxicillin DT job aid and product presentations.

Perceptions from both healthcare providers and caregivers will be critical components of this evaluation to ensure that study tools are usable, feasible and acceptable, they encourage uptake and they enable broad use.

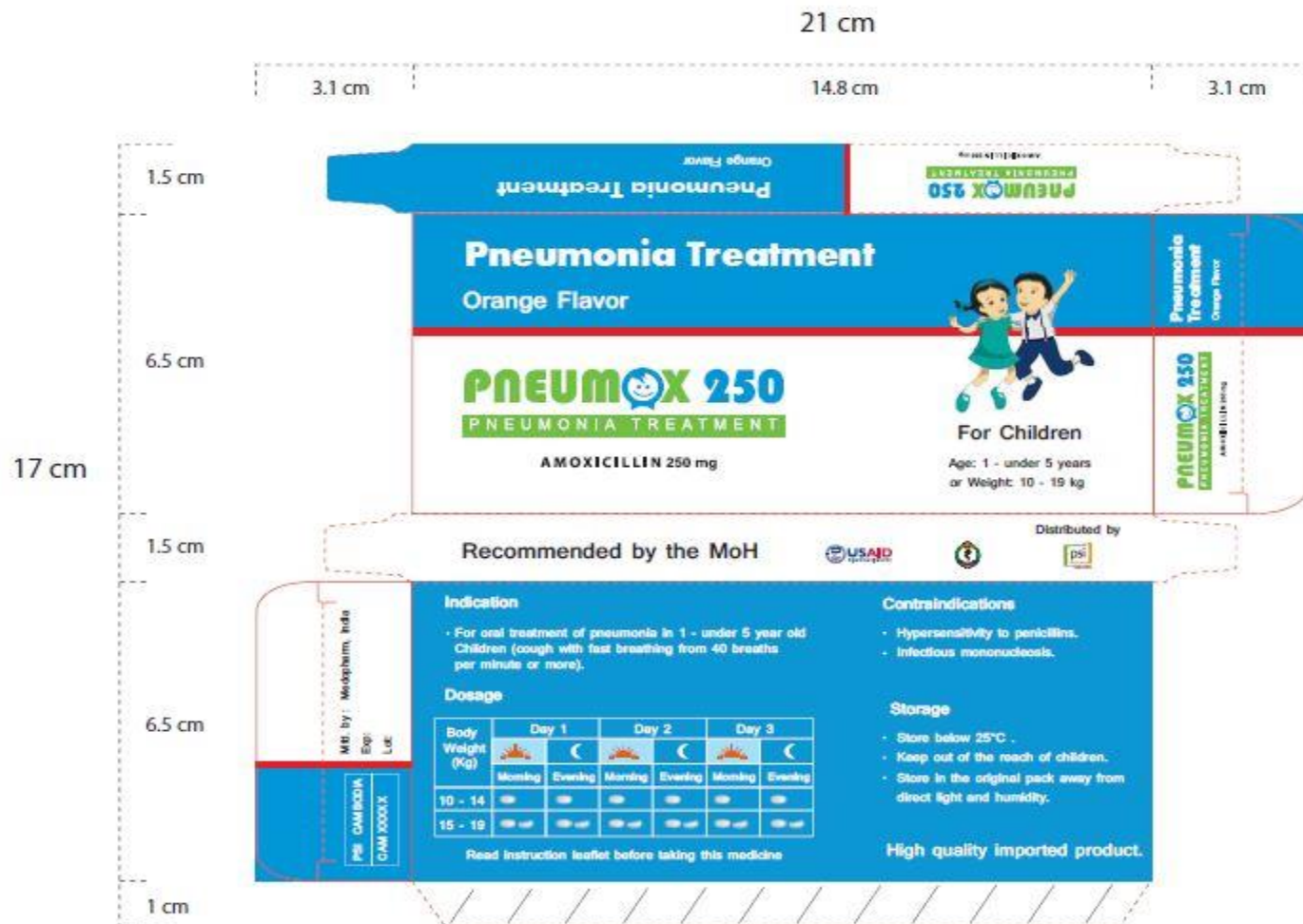
# Background: An Iterative Design Process



# Background: Key Considerations



# CAMBODIA























# MOZAMBIQUE

## DOSAGEM DA AMOXICILINA

(Comprimidos de 250mg)

Crianças de 12 meses a 5 anos de idade





















DIAS	 Manhã	 Tarde	 Noite
1º DIA			
2º DIA			
3º DIA			
4º DIA			
5º DIA			

## DOSAGEM DA AMOXICILINA

(Comprimidos de 125mg)

Crianças de 2 a 11 Meses de idade

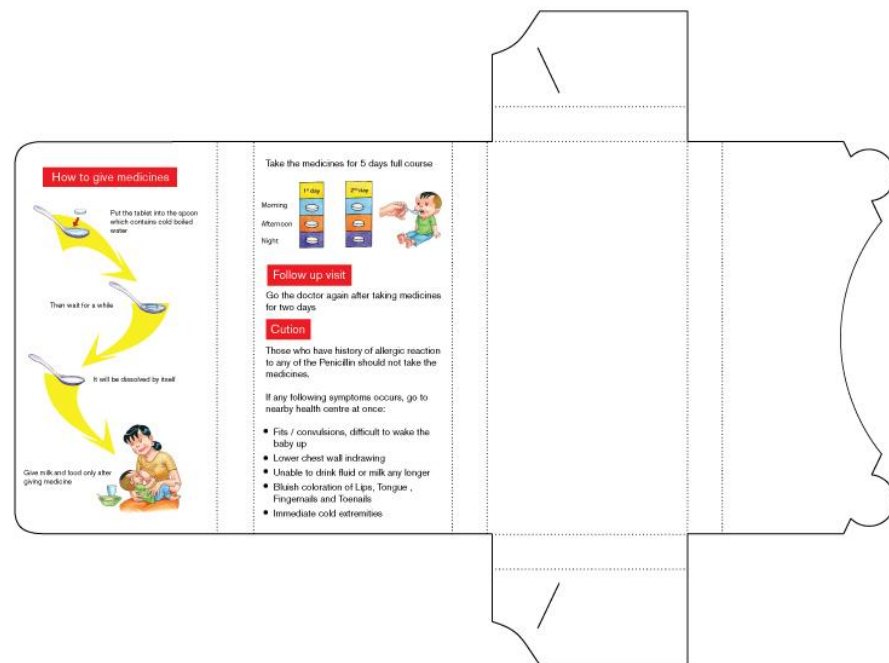


DIAS	 Manhã	 Tarde	 Noite
1º DIA			
2º DIA			
3º DIA			
4º DIA			
5º DIA			



# MYANMAR

10.1 in x 7.5 in



# RWANDA

## Ibinini bya Amoxicilline 125 mg baranga n'amazi

### Ninde uhabwa ibinini bya Amoxicilline?

Umwana urwaye umusonga uri mu kigero cy'amezi 2 kugera ku mezi 59

Uko ibinini bya Amoxicilline bitangwa

### Umwana ufite:

- amezi 2-4 : ibinini 1 kabiri ku minsi, mu minsi itanu
- amezi 5-12 : ibinini 2 kabiri ku minsi, mu minsi itanu
- amezi 13-30 : ibinini 3 kabiri ku minsi, mu minsi itanu
- amezi 31-59 : ibinini 4 kabiri ku minsi, mu minsi itanu

### Ni nde utagomba gufata uyu muti ?

- Abana bafite umusonga
- Abana bagira ingaruka icyo banyoye Amoxicilline cyangwa Penicilline
- Abana bari muni y'amezi 2 cyangwa hejuru y'imyaka 5

### Ni izihe ngaruka zishobora kugaragara ku muntu unywa uyu muti ?

- Impiswi, iseseme, kuruka
- Gufuruta ku mubiri
- Guhumeka bidasanze

Iyo ubonye imwe mu ngaruka zivuzwe haruguru, cyangwa se ikindi kimenyetso kidasanze, ihutane umwana ku muyanama wubuzima agufashe.

Uyu muti ugira akamaro gusa icyo ukurikije amabwiriza wahawe, kandi ukawurangiza. Uyu muti ni uw'umwana urwaye gusa, ntusaranganywe n'abandi.

Mu gihe umwana afata umuti :

- Komeza kumwonsa
- kumugaburira duke duke kenshi ku minsi, wongere ibinyobwa uha umwana ku minsi n'amashereka igihe umwana akiri kw'ibere.

Bika umuti aho abana batagera, ahumutse kandi hafutse. Wiwubika ahantu hari ubushyuhe bwinshi.

## UKO UMUTI WA AMOXI UNYOBWA

icyitandazwa:

- ☀ = Mu gihe
- ☾ = Sinuagombwa
- ☐ = Imbere
- = Aho umuntu umusonga
- = Aho umuntu umusonga



Kuranga umuti umusonga umusonga



Vanga ibinini bitandazwa umusonga umusonga



Umuhoze umusonga umusonga umusonga



Umuhoze umusonga umusonga umusonga



Umuhoze umusonga umusonga umusonga



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Umuhoze umusonga umusonga umusonga



Umwana akira umusonga icyo ukurikije amabwiriza wahawe, kandi ukawurangiza umusonga.



# SOUTH SUDAN

## 5. IF THE CHILD HAS COUGH & FAST BREATHING



50 breaths  
or more per  
minute

2-11 months

Day 1	D	D	D
Day 2	D	D	D
Day 3	D	D	D
Day 4	D	D	D
Day 5	D	D	D



40 breaths  
or more per  
minute

1-5 years

Day 1	⊙	⊙	⊙
Day 2	⊙	⊙	⊙
Day 3	⊙	⊙	⊙
Day 4	⊙	⊙	⊙
Day 5	⊙	⊙	⊙



# UGANDA



## AMOXICILLIN TABLETS FOR ORAL SUSPENSION USP 125 MG

**CATEGORY**  
ANTIBIOTIC, ANTIBACTERIAL

### COMPOSITION

#### Dosage form

Each dispersible tablet contains  
Amoxicillin Trihydrate USP  
Equivalent to Amoxicillin 125mg

### INDICATIONS

Used in the treatment of E.N.T., U.T.I., G.I., Soft tissue infections due to gram positive & gram negative bacteria & surgical infections.

### DIRECTION TO USE

Do not chew or swallow the tablets whole. Place the prescribed dose in a glass with 2 teaspoonfuls of water and stir until thoroughly mixed. Drink all of the liquid immediately after mixing. Then rinse the glass with a small amount of water and drink the contents. This will insure the whole dose is taken. Do not mix the tablet with any liquid other than water.



### CONTRAINDICATIONS & SIDE EFFECTS



Hypersensitivity to penicillins, Infectious mononucleosis, side effects include very rarely, anaphylactic shock, pseudomembranous colitis, G.I upset, diarrhoea, sore mouth or tongue may also occur.

### PRECAUTIONS

Patients allergic to other penicillins must be assumed to be allergic to Amoxicillin. It should be given with care to patients with renal or hepatic dysfunction

### DOSE

Age: From 2 months to 11 months					
Time	Day 1	Day 2	Day 3	Day4	Day5
	2 tabs	2 tabs	2 tabs	2 tabs	2 tabs
	2 tabs	2 tabs	2 tabs	2 tabs	2 tabs

Age: From 12 months to 59 months (1-5 years)					
Time	Day 1	Day 2	Day 3	Day4	Day5
	3 tabs	3 tabs	3 tabs	3 tabs	3 tabs
	3 tabs	3 tabs	3 tabs	3 tabs	3 tabs

### STORAGE

Store in cool dry place below 25°C. Protect from light.  
Keep out of reach of children.

### PRESENTATION

Strip containing 10 tablets

**Manufactured by:**  
Medopharm Pvt. Ltd.,  
Guduvanchery, India

PENC0157

# Limitations: Existing Tools Incomplete or Inconsistent

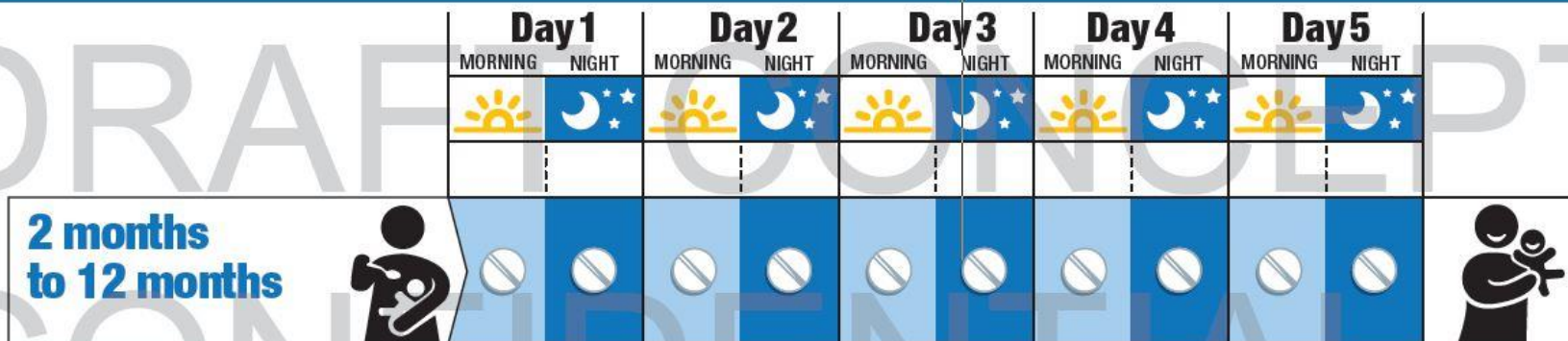
- Only dosing schedule with no indication of how to prepare amoxicillin DT
- Only instructions for preparation of amoxicillin DT with no dosing schedule
- Inconsistent use of both age and weight bands to determine treatment
- Text-based instructions for dosing and frequency
- Single insert/ instructions for box of 10 blister packs
- Job aids with minimal instructions for caregivers and no information about warning signs, side effects, or follow-up
- Packaging and inserts with unclear target audience- healthcare provider or caregiver?
- No information on *why* taking full-course of treatment is important

# Current Prototypes: 2-12 months

## Amoxicillin 250mg dispersible tablets (DT)

Pneumonia Treatment

2 months  
to 12 months



Complete all days  
of treatment

Bacterial load  
decrease



Take 1 tablet



Put in a cup



Add a little drinking  
water (10mL)  
to cover tablet



Mix water and  
tablet well



Make sure  
the child  
drinks all  
the medicine



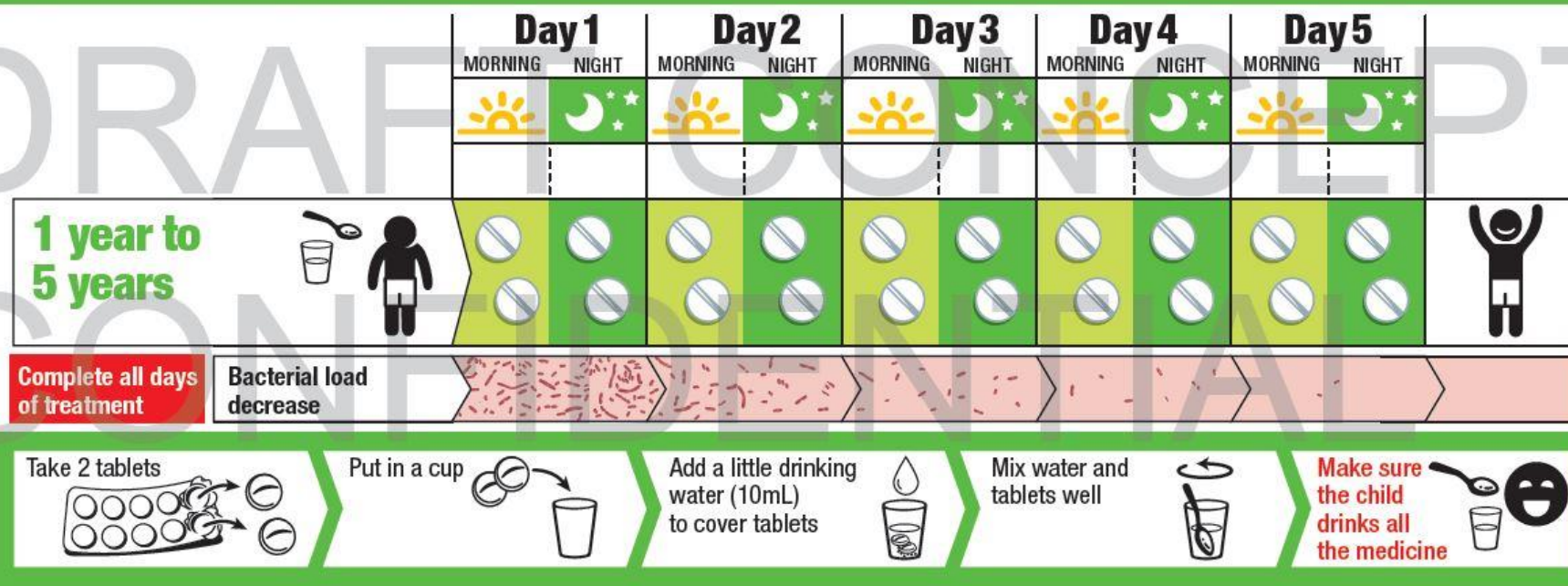


# Current Prototypes: 1-5 years

## Amoxicillin 250mg dispersible tablets (DT)

Pneumonia Treatment

1 year to 5 years





# Current Prototypes: Job Aid

## Amoxicillin 250mg dispersible tablets (DT)

Treatment of Pneumonia for children from 2 months to 5 years of age

### DOSE SCHEDULE

- The first dose should be administered by the health care provider.
- Instruct caregiver to give medication for the full prescribed length of time, even if child's symptoms improve before the completion of therapy.
- Please instruct caregiver and demonstrate with first dose.

	Day 1		Day 2		Day 3		Day 4		Day 5	
	MORNING	NIGHT	MORNING	NIGHT	MORNING	NIGHT	MORNING	NIGHT	MORNING	NIGHT
<b>2 months to 12 months</b>										
<b>1 year to 5 years</b>										

**Complete all days of treatment** **Bacterial load decreases**

Please instruct caregiver: Even if the child feels better, the infection may still remain in their body. ALL of the medication must be given for the bacteria to be killed.

- Wash hands, then take:  
1 tablet for 2-12 months of age.  
2 tablets for 1-5 years of age.
- Put in a small, clean cup.
- Add a little (10ml) drinking water to cover tablet(s) completely.
- Mix water and tablet(s) well.
- Make sure the child drinks all the medicine.

Please instruct caregiver that the resulting mixture should be used immediately and not stored for future use. After the suspension is given to child, any remaining particles should also be given to child.

### IMPORTANT

- Before dispensing medication to caregiver, check expiration date.
- Amoxicillin will not treat a viral infection such as the common cold or flu.
- Medication should not be shared.
- Instruct caregiver to keep amoxicillin DT out of the reach of children and in a clean, dry place.

### SIDE EFFECTS

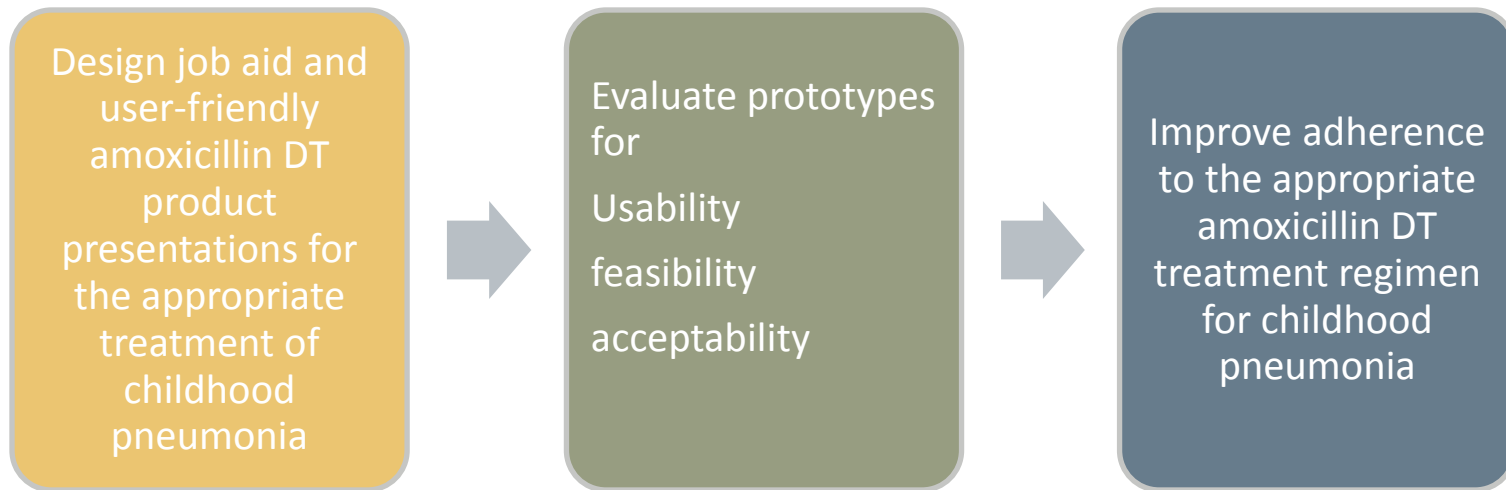
- Amoxicillin can cause the following side effects:
  - Diarrhea. In this case, do not use anti-diarrhea medication.
  - White patches or sores inside mouth or lips.
  - Fever, swollen glands, rash or itching, joint pain.
  - Severe blistering, peeling and red skin rash.
  - Pale or yellowed skin, yellowing of eyes, dark colored urine.
  - Severe tingling, numbness, pain, muscle weakness.
  - Easy bruising, unusual bleeding, purple or red pinpoint spots under skin.
- Instruct caregiver: If child has severe side effects or anaphylactic reactions, they should return to a health facility immediately for further evaluation.

### FOLLOW UP

Instruct caregiver

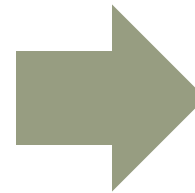
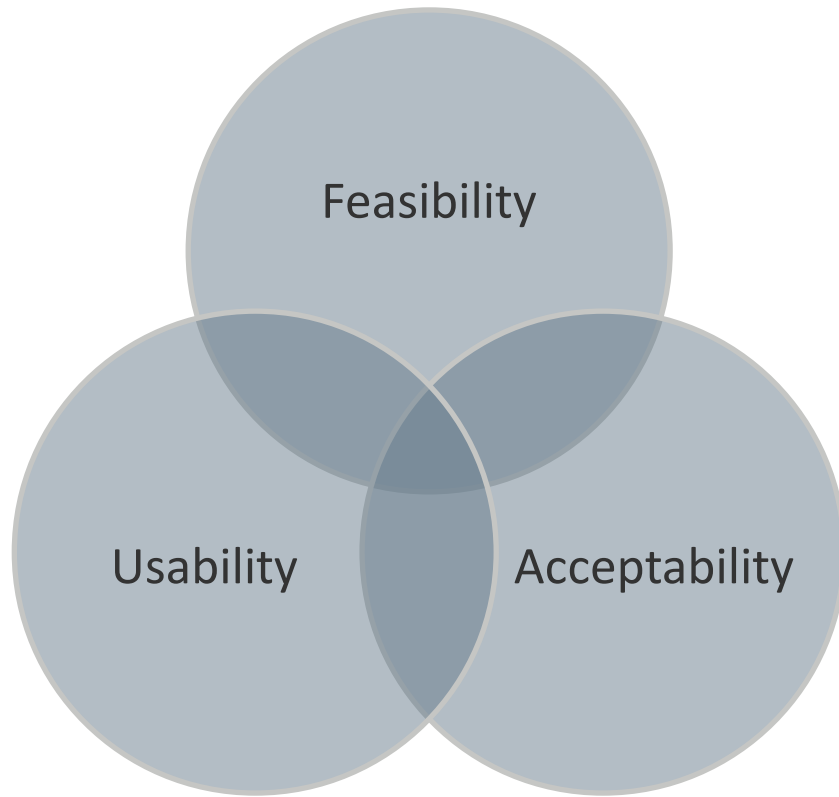
- To increase the child's fluid intake during illness
- To return for follow-up visit in 2 days. At this visit, check for general danger signs and assess child for cough or difficulty breathing.
  - Is the child breathing slower? Is there less fever? Is the child eating better?
- To return immediately if the child:
  - Becomes sicker
  - Is not able to drink or breastfeed
  - Is vomiting everything
  - Develops a fever
  - Experiences continued fast or difficult breathing or wheezing

# Primary Research Questions



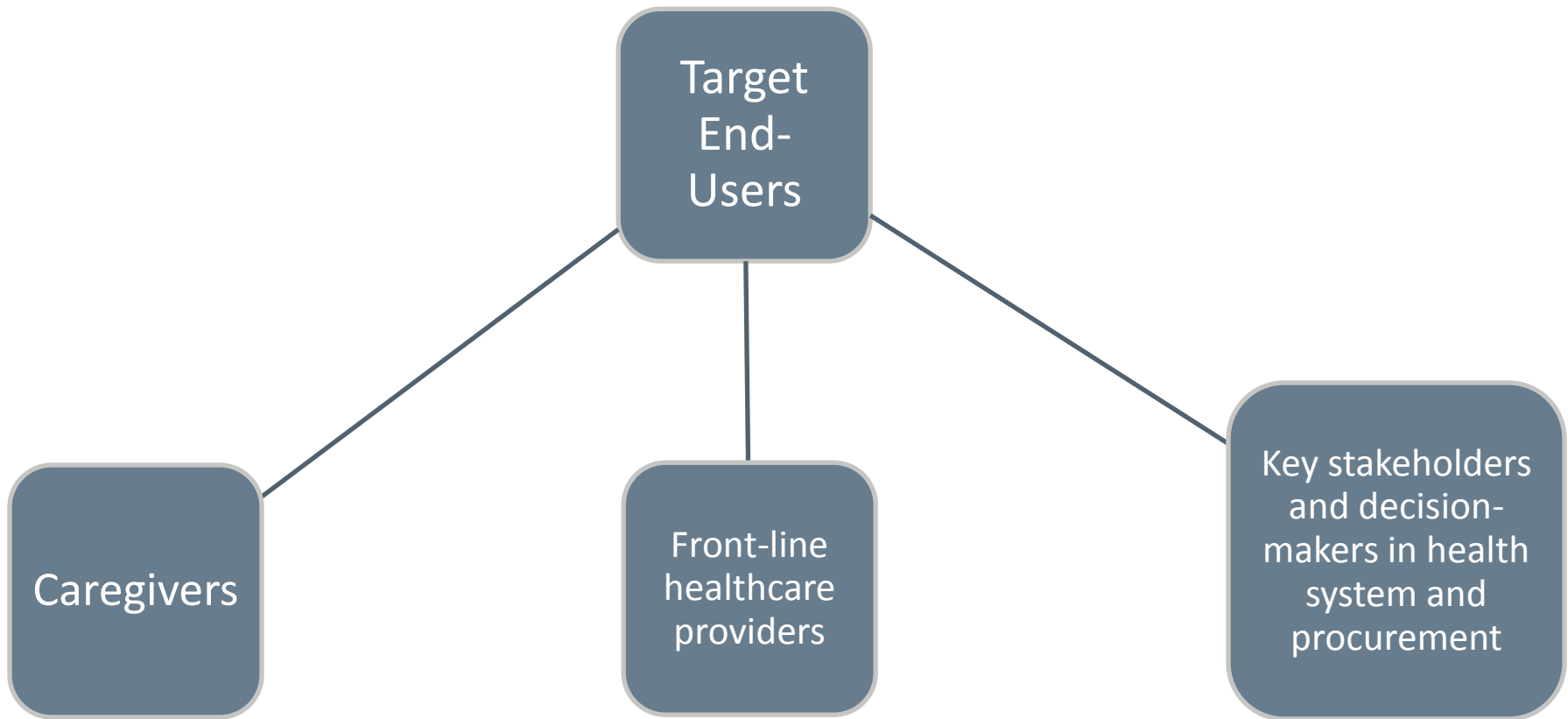
- 1) Is it feasible to incorporate job aid and user-friendly product presentations into the current standard of care and health care system?
- 2) Are the job aid and product presentations acceptable for use among target end-users?
- 3) Are the job aid and product presentations usable by target end-users?
- 4) Does the use of the job aid and product presentations influence adherence to the amoxicillin DT treatment regimen for childhood pneumonia?

# Overlapping Themes



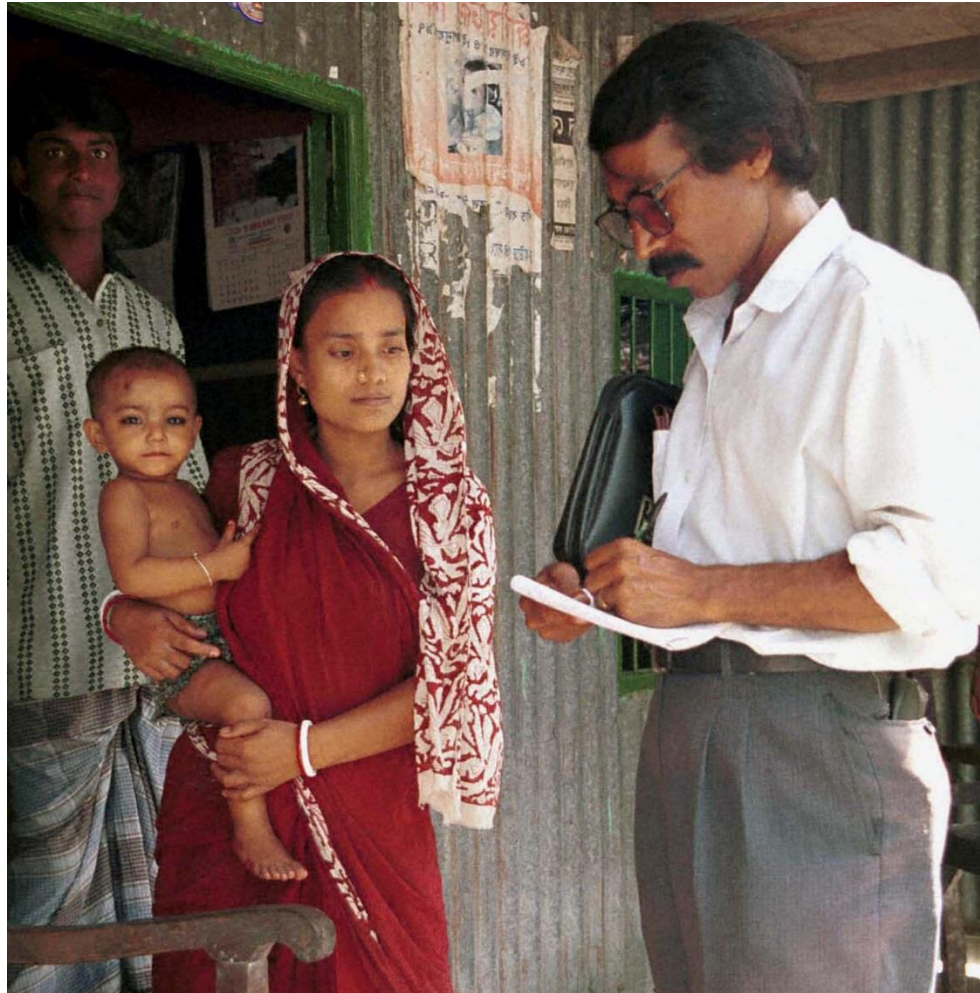
Adherence  
to treatment

# Multiple End User Groups



# Proposed Study Site: Bangladesh

- High-burden country
- Amoxicillin DT currently available and used in-country
- Lowest- level of public facility-based healthcare providers – community healthcare providers- able to diagnose pneumonia and prescribe antibiotics



# Proposed Study Site: Bangladesh

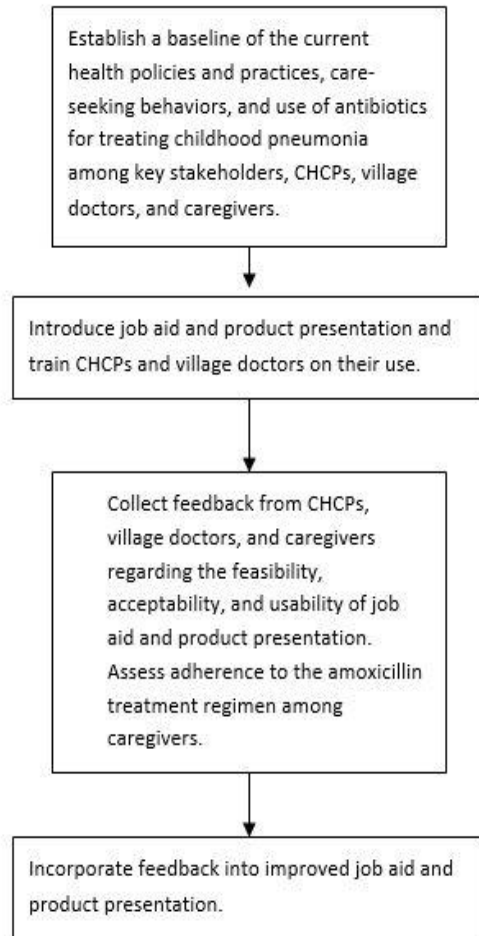
Village doctors are the most popular source of health care for common illnesses, pneumonia included.

Service provision and treatment practices in Bangladesh	Community Health Workers	Village Doctors
Average number of patients per day	14	18
HCPs reporting patients with cough	67%	97%
HCPs reporting patients with breathing problems	33%	54%
HCPs reporting treatment of fever with antibiotics	30%	89%
HCPs reporting treatment of childhood pneumonia with antibiotics	70%	96%

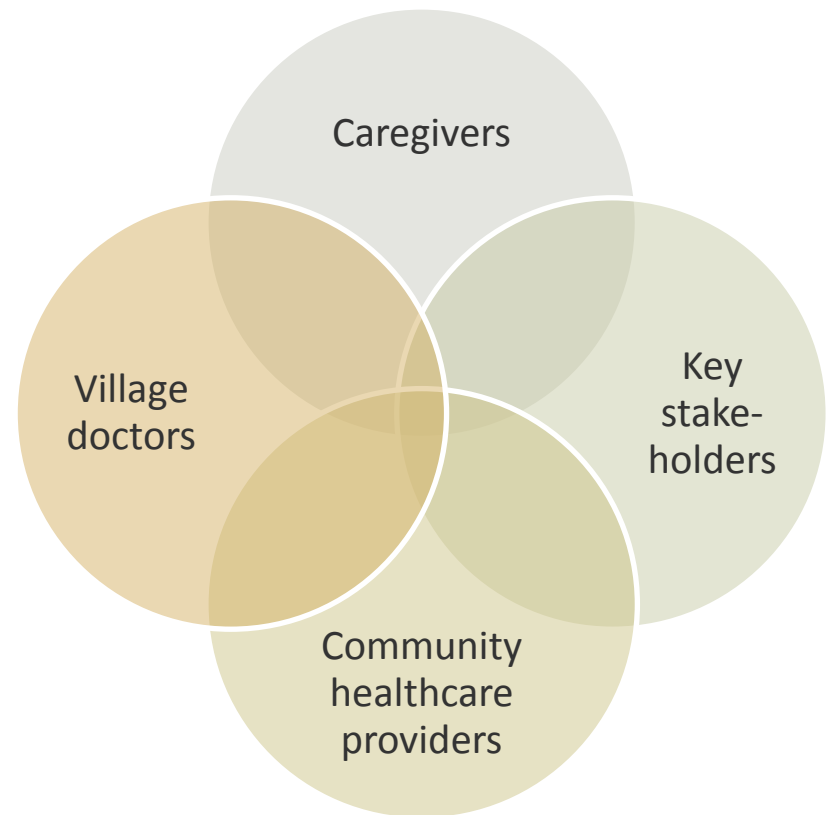
Source: Ahmed, S. M., Hossain, M. A., & Chowdhury, M. R. (2009). Informal sector providers in Bangladesh: how equipped are they to provide rational health care? *Health Policy and Planning*, 24(6), 467–78.

# Proposed Study Site: Bangladesh

## Study Design



## End-Users in Bangladesh





# Expected Study Outcomes

- Improved prototypes of job aid and product presentations based on user feedback
- Improved understanding of user views on usability, feasibility, acceptability, and influence on adherence behaviors of the job aid and product presentations
- Recommendations for possible next steps and pathways to broader implementation

# Other Considerations

1. Universal vs. custom job aid and product presentations
2. Strategies for ensuring that job aid and product presentations reach target end-users
3. Establishing benchmarks for key indicators of usability, feasibility, acceptability, and influence on adherence.

# Coordination Study

Objective: to coordinate the evaluation of job aids and user-friendly product presentations for facilitating increased adherence to amoxicillin DT for treatment of childhood pneumonia among community health workers and caregivers across three countries.

- Harmonize study protocols from UNICEF Kenya and Ethiopia to achieve aligned study objectives, design, methods, and data collection tools.
- Make appropriate changes to prototypes for use in Kenya and Ethiopia.
- Coordinate the process for introducing job aid and user-friendly product presentations to target audiences.
- Aim for consistency and quality of implementation and data collection across study sites.
- Develop data analysis framework in collaboration with research partners, synthesize findings across three study sites, and provide recommendations for next steps.

# Questions/Comments?

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