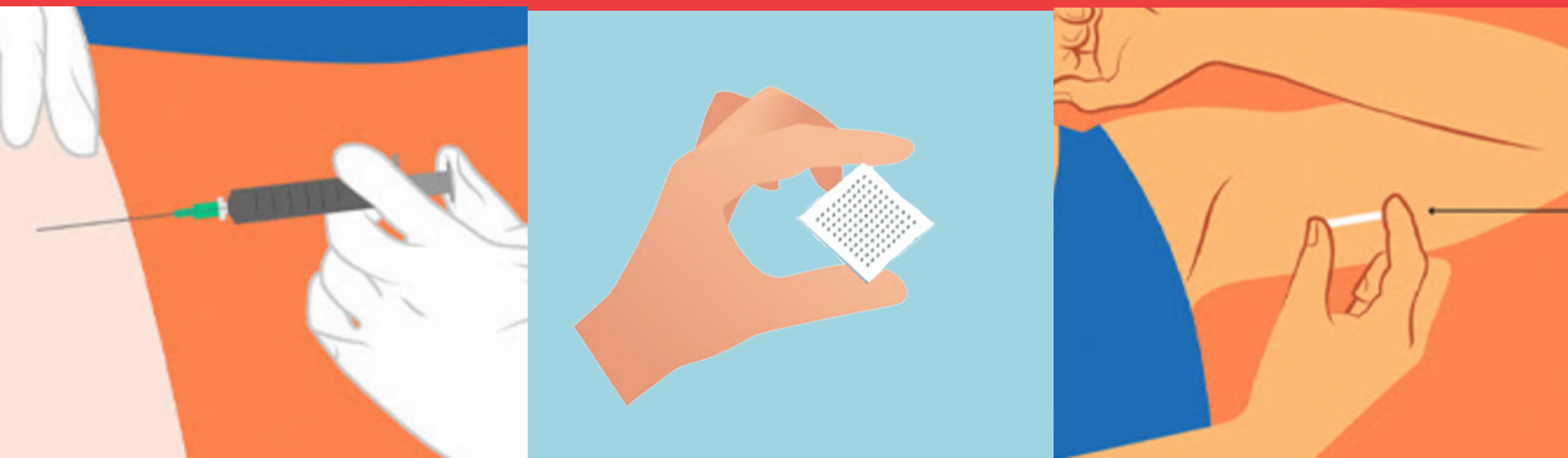


# TB TREATMENT'S NEW FRONTIER

Presented by:



Orienting  
Community to Long  
Acting Technologies  
for TB



# AGENDA

**8:00 – 8:15 AM**

Welcome, Agenda, & Objectives  
*Erin McConnell, TAG*

**8:15 – 8:30 AM**

Introduction to Long Acting Injectables  
Target Regimen Profile Development  
*Samuel Schumacher, WHO*

**8:30 – 8:55 AM**

Long-Acting Technologies and TB  
*Erin McConnell, TAG*

**8:55 – 9:10 AM**

Overview of Community Perception  
and Preferences Survey  
*Nora West, UCSF*

**9:10 – 9:30 AM**

Q&A and Launch of Survey  
*Ketho Angami, LAT CAB + Global TB CAB*  
*Erin McConnell, TAG*

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# Objectives

1

## Introduce LATs

After this webinar, community members should walk away understanding what LATs are, how they work, and the unique challenges and opportunities in LATs.

- Types of LATs and how they work
- Implementation Challenges and opportunities

2

## Review LATs in Development for TB

Community members will leave this session with a broader understanding of the pipeline of LATs in development for TB.

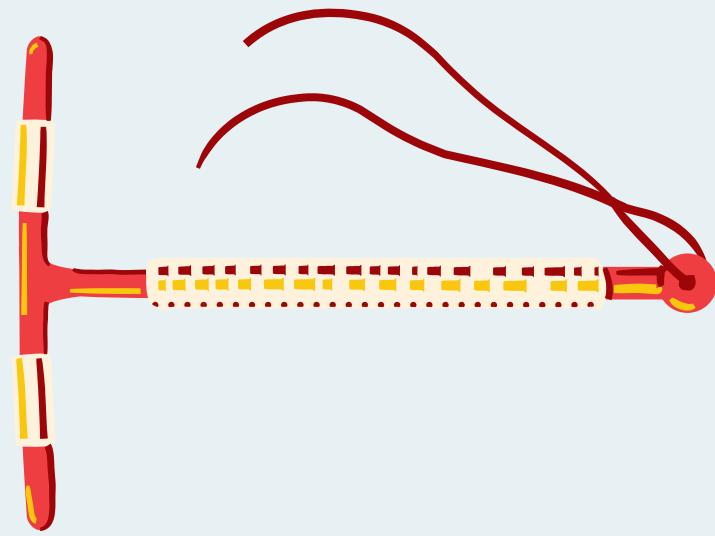
- LAT Pipeline for TB
- Integration of LATs into TB treatment and prevention options
- Outstanding research

3

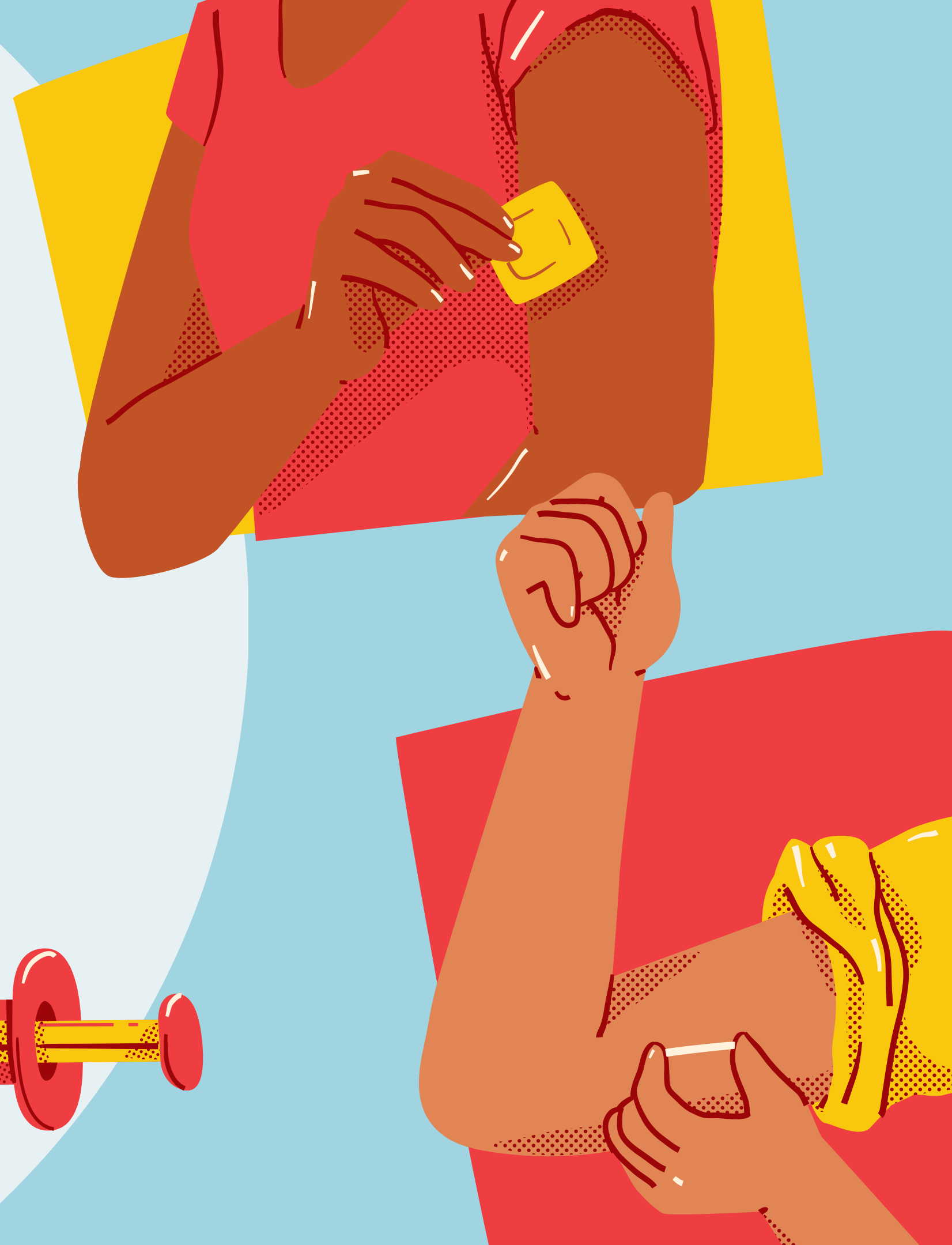
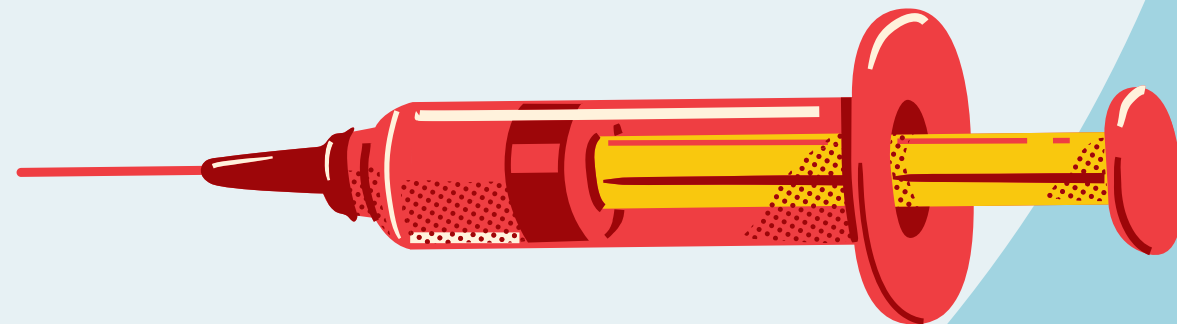
## Launch Community Survey

This webinar is designed to prepare participants to complete a survey designed to capture community perceptions & preferences to inform the development of future LATs for TB.

- Review survey structure and preference questions
- Complete survey
- Disseminate to networks



# An Introduction to Long-Acting Technologies





# What are Long Acting Technologies (LATs)?

**Long-acting technologies** are medicines that have been designed to release a drug over days, weeks, months, or longer. LATs are not *new* drugs - being made up of drugs largely in existing treatment regimes, but rather new ways of administering drugs.

**LATs take many forms**, including: extended release pills, implants, injections, patches, etc.



injections



vaginal  
rings



oral  
medications



infused/injected  
antibodies



implants



microneedle  
patches



nasal spray

# Potential Benefits of LATs

1

LATs continuously release medicine into your body, and can **increase treatment effectiveness** through sustained treatment.

2

LAT administration can be **more discrete** than daily pills, preventing stigma.

3

LATs can **improve treatment adherence** by reducing or eliminating pill burdens.

4

Some LATs **may reduce the number of clinic visits** required during treatment - saving time and money.

# Common Types of LATs

**Implants** are small devices placed permanently or temporarily near the surface of the body. They can be made of plastic, metal, or ceramic.

*Ex: vaginal rings or IUD*



**Patches** made of tiny needles (i.e., **microneedles**), that continuously deliver medication through the skin.

*Ex: chemotherapy patch*



**Sprays** administer small doses of medicine directly to the nasal cavity. Sprays are often used for medicines that go directly to the blood stream.

*Ex: opiod-based nasal sprays for acute pain*



**Injections** that provide treatment coverage over a longer period. Some long-acting injectables form “drug depots”, or sub-dermal reservoirs of medicine.

*Ex: cabotegravir/rilpivirine for HIV*



**Extended-release oral medications** can extend the duration of treatment coverage in the body, reducing the amount of daily pills.

*Ex: extended-release metformin for diabetes*

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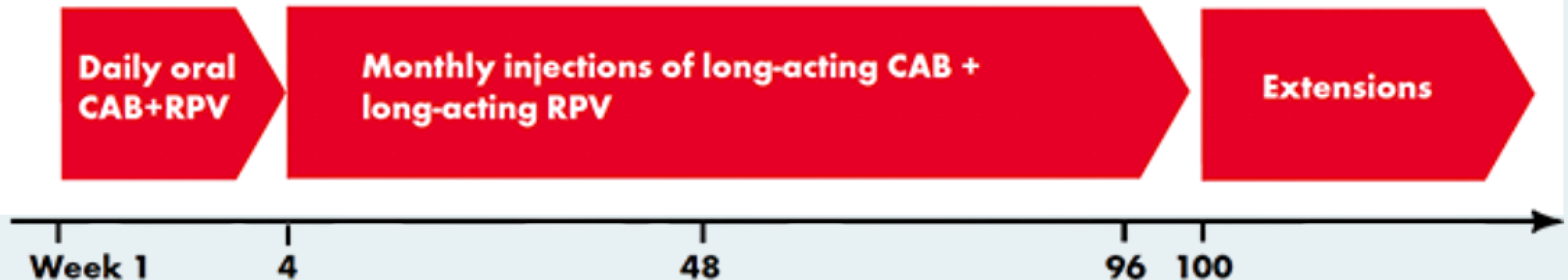
# **Key Concepts and Considerations for LAT for TB**



## Safety and Oral Lead Ins

Once LATs are injected or placed, they remain active for an extended period, posing unique safety and tolerability risks compared to oral medications that are cleared more rapidly from the body.

One way around this is to include an **oral lead-in phase**. During this phase (on average, 1 month), an oral version of the LAT treatment is taken to watch for negative treatment effects. After safety is confirmed, the LAT treatment can begin.



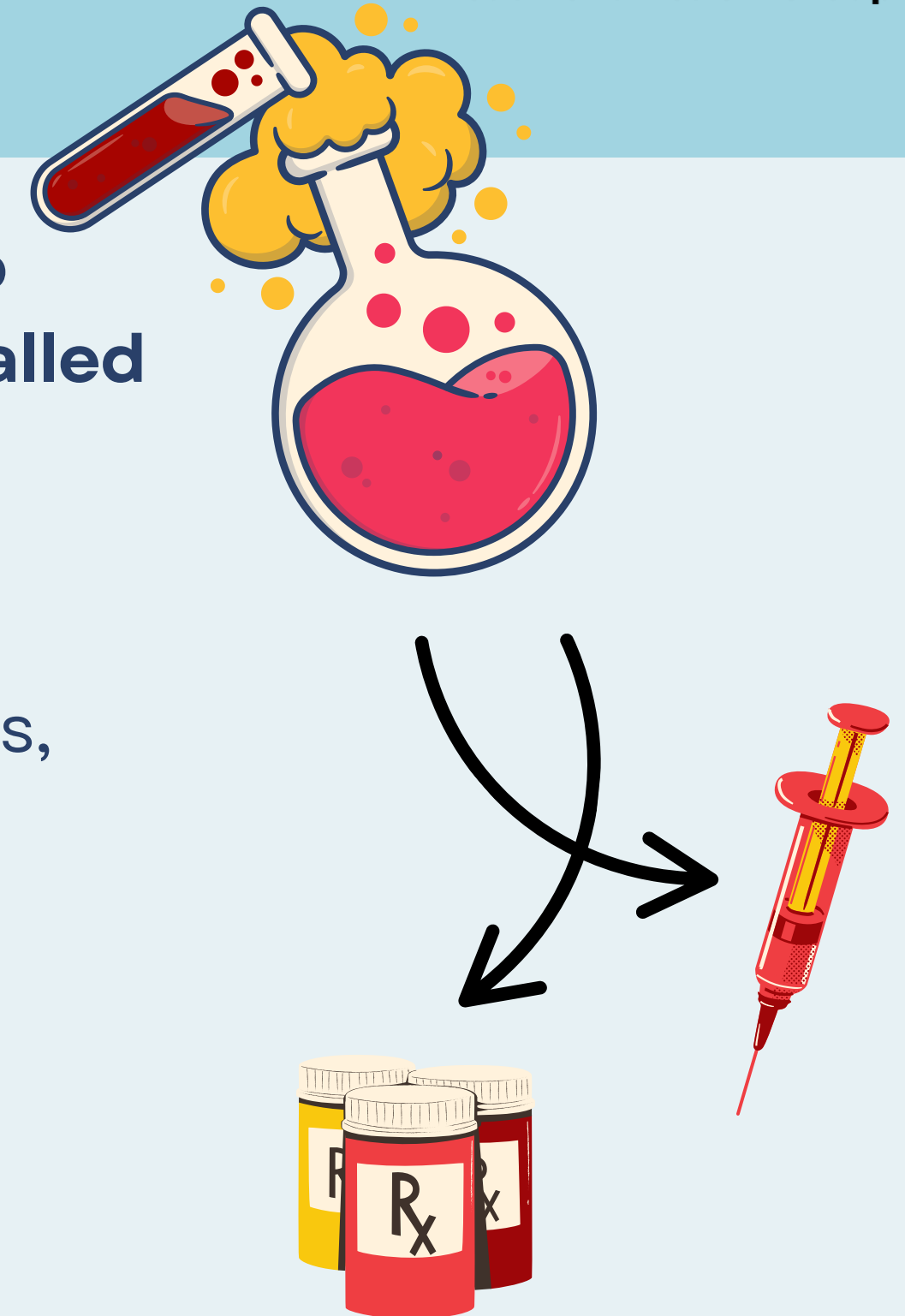
# Coformulation

Long-acting technologies can be designed and/or optimized to **combine multiple medications in a single injection or dose - called coformulation.**

Coformulations can **reduce the number of individual doses required** - i.e., the number of pills, number of injections, patches, etc.

Drugs can be coformulated for any administration type. Coformulated pills (referred to as fixed-dose combinations or FDCs) are common for TB treatment and prevention.

One existing coformulated LAT combines cabotegravir/rilpivirine for treatment of HIV.

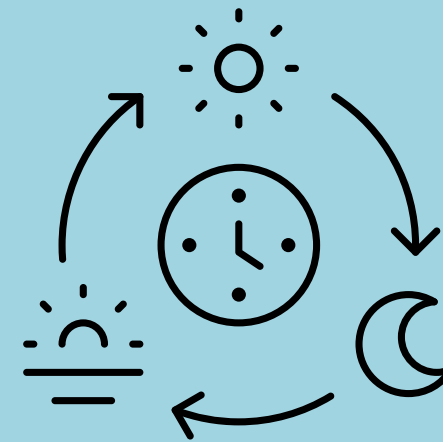


# Coverage Duration

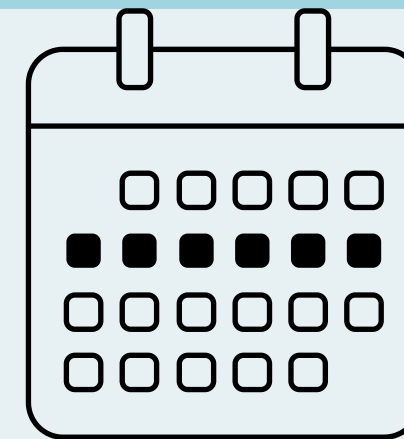
For LATs, **the time that treatment remains effective after placement, use, or injection**, is called the coverage duration.

The coverage duration is **varies for different LATs, drugs, and formulations**. It may be one month, or longer.

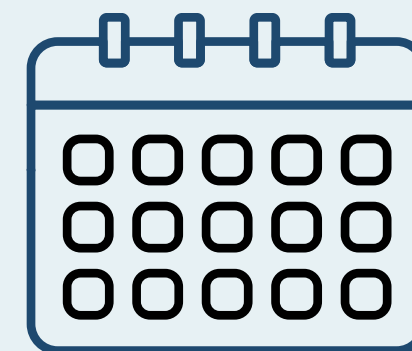
During the coverage period, effective treatment may look like: prevention of disease progression, symptom suppression, no bacterial growth (i.e., culture conversion for TB) – all without daily pills.



Most existing TB treatment regimens require daily medications. The “coverage duration” can be considered **one day**. *Ex: 1HP, 4HRZE, 6BPaLM*



Some TB prevention regimens require taking pills once a week, making their “coverage duration” **one week**. *Ex: 3HP*



LATs hold the promise of extending coverage duration to a **month or longer**.

# Treatment Facilities

## The When and Where of LATs

### Local Clinics

Depending on the type of LAT and storage requirements, some LATs may be **administered in nearby local clinics.**



### Central Hospitals

If specialized skills, tools, or facilities (e.g., freezer) are needed to store or administer LATs - **you may need to travel to a central hospital.**





# Routes of Administration

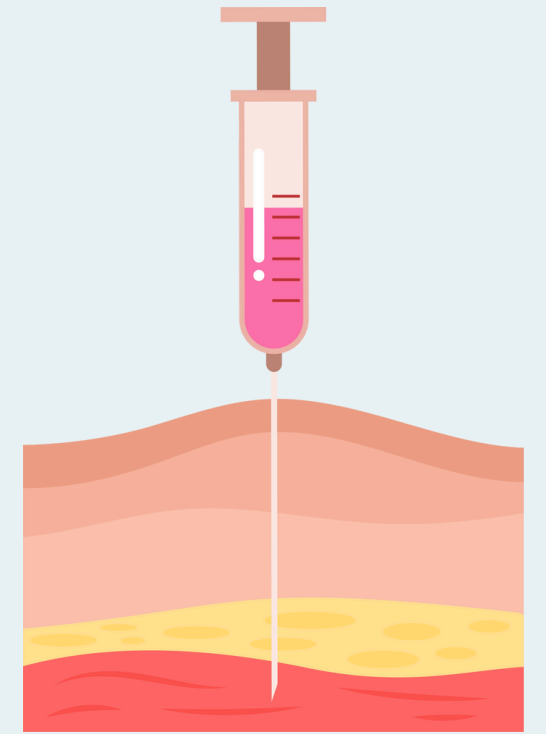
## Intramuscular vs. Subcutaneous Injections

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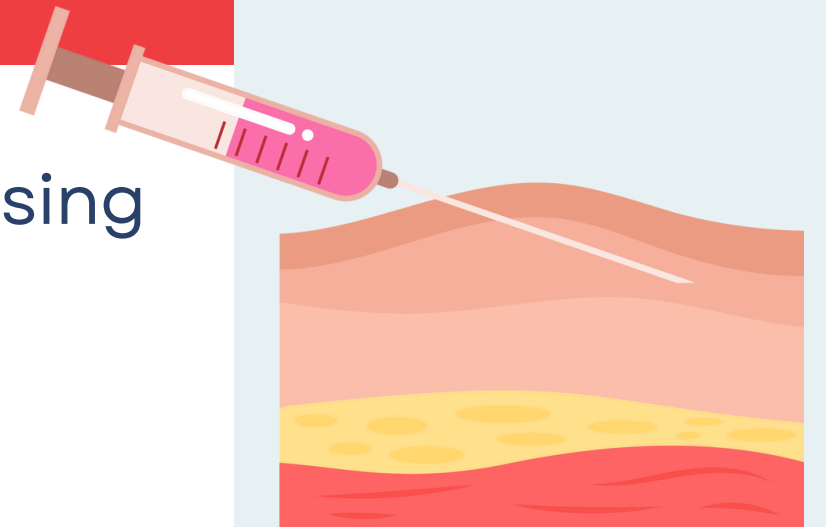
### Intramuscular

Deeper injections into your muscle using longer needles - generally given in the arm, thigh, hip, or buttocks. These may allow the medicine to work longer in your body.



### Subcutaneous

Shallow injections just under your skin using shorter needles. These often feel less painful.



# **LONG ACTING INJECTABLES FOR TB**



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# Long Acting Technology for TB Treatment and Prevention

## Why?

Existing all oral regimens for TB treatment and prevention come with a number of challenges.

These challenges are related to pill burden, stigma, drug-drug interactions, and stock-outs / supply security.

***LATs for TB can help address some of these challenges move the needle on TB elimination.***



# Opportunities and Benefits of LATs in TB



LATs support person-centered models of care by **broadening options for TB treatment and prevention** - which allows people to tailor their treatment to their needs and lifestyle.



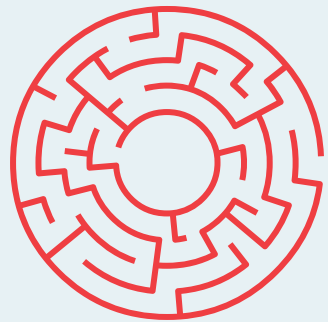
LATs could meaningfully **streamline access to care and treatment** by reducing the number of interactions with healthcare institutions and costs to individuals.



Incomplete adherence to regimens is one of the largest obstacles to achieving TB cure and elimination - LATs can **improve treatment adherence**, especially for those who struggle with daily pills.

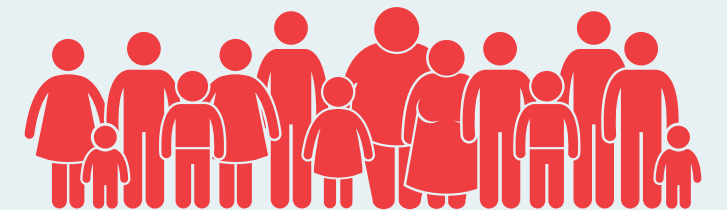


# Barriers and Challenges of LATs in TB



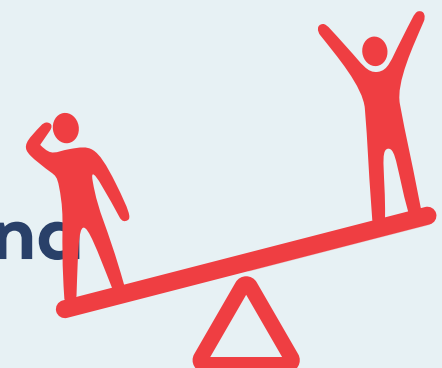
TB regimens are quite complex, especially for drug resistant TB. This **regimen complexity (3+ drugs at initiation)** creates a challenge when trying to combine the full scope of treatment into long-acting solutions.

Long-acting injectables (LAIs) are the furthest along in clinical trials. Introduction of any LAIs **requires deep community engagement and buy in** to overcome injectable hesitancy.



**Manufacturing LA products is far more complex than manufacturing medications taken orally** requiring specialized equipment and sterile environments.

There is an anticipated delay between innovator LATs and generic manufacturing. The introduction of **LATs for TB must be rigorously and thoughtfully planned to ensure equitable access.**



# LATs in Development for TB

## LA BDQ Injectable

Currently in Phase I trials – of interest as a pan-TPT and/or as component of combined LA/oral regimens for TB treatment. (J&J)

## NextGen Diarylquinoline

Preclinical development of potential BDQ replacement – more potent & lower risk of QTc prolongation. (TB Alliance)

## Isoniazid Prodrug

A variation of isoniazid designed for inclusion in LATs. Currently in advanced preclinical studies. Phase I likely 2026/2027. (LONGEVITY)

## LA Rifapentine

Currently in preclinical studies. Phase 1 trials targeted for 2026/2027. (LONGEVITY)

## LA Rifapentine + Isoniazid

Coformulation currently in early preclinical studies. (LONGEVITY)

# Ongoing Research in LAIs (and LATs) for TB



## **Oral vs LA Differences**

Despite using the same drugs, how drugs are provided can influence how the drugs behave in the body. Researchers are exploring the difference in pharmacokinetics and bioavailability between oral medicines and LATs.



## **Drug-Drug Interactions**

For the same reasons, DDIs may differ between oral and LA drugs. Researchers are investigating how LATs could affect DDIs, especially for common regimens (e.g., ART/ARVs).



## **Complexity**

Researchers are working through how to convert TB regimens into optimized LA formulations. Converting different drugs into long-acting technologies may require different approaches and base technologies.



**INTRODUCING:**

***SURVEY ON COMMUNITY  
PERCEPTIONS AND  
PREFERENCES TO INFORM  
THE DEVELOPMENT OF  
FUTURE LATS FOR TB  
TREATMENT & PREVENTION***

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# Survey Structure

## PART ONE: EXPERIENCE AND PERCEPTION

The first part of the survey, following a very standard format, asks for basic **demographic information**, your **past experiences with TB treatment**, and **perceptions** associated with injectables.

## PART TWO: INTEREST

The second part of the survey asks you to **rate your willingness / interest** depending on different features of long-acting injectables for TB. You'll be asked to determine if you are more, less, or equally interested in different scenarios.

## PART THREE: PREFERENCE

The final part of the survey will present a series of scenarios and ask you to **pick between two different options** each. We will cover this question type more in the following slides.

Standard of care vs LAI regimen without co-formulation \*

We want to know which you would prefer: the current 6-month pill treatment or a new possible 3-month treatment with injections. At first, each medicine may need to be given as a separate shot to work as well as your daily pills.

Under this scenario, please consider the following two options:

**Option A.** Standard of care treatment. The oral treatment duration for TB is 6 months. You need to take medication every day.

**Option B.** A three-month treatment regimen in which you would take four medicines orally (by mouth) in the first month, followed by four injections in the second month, and the same four injections in the third month.

- ☐ Stongly prefer Option A
- ☐ Prefer Option A
- ☐ Neutral
- ☐ Prefer Option B
- ☐ Stongly prefer Option B

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Option A						
Option B						

Understanding Preferences

The survey is designed to assess community preferences around LAI features.

You'll be asked to choose one of two options; and indicate how strongly you favor one option over the other.

# Participation in Focus Group Discussions



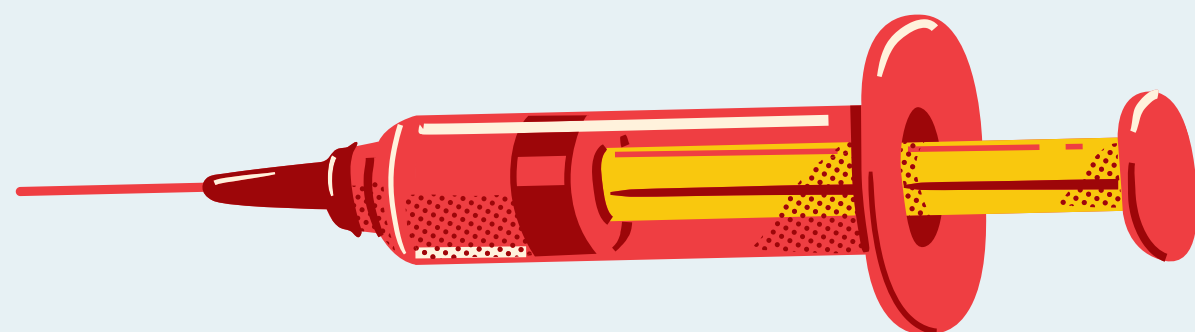
## Diving Deeper: Focus Group Discussions (FGDs)

The results of the survey will guide four FGDs, organized regionally. These **FGDs will be opportunities to gain deeper insight into perceptions around injectables** in TB communities and potential barriers to implementation of LAIs for TB globally.

## Participation in FGDs

In the **survey**, you'll have the **opportunity to indicate if you'd like to be considered** for participation in the FGD.

# Questions?



[taglink.info/m/TBLATs](https://taglink.info/m/TBLATs)