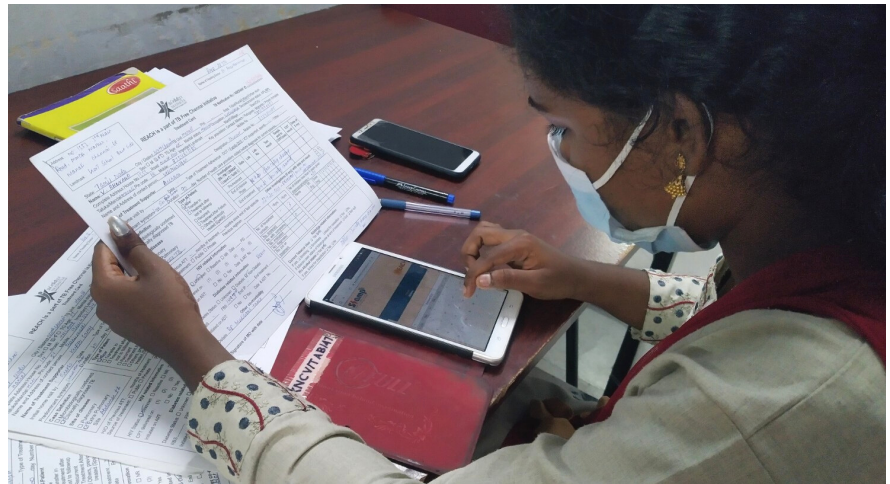




# STAMP






Support for Treatment Adherence  
and Medication Protocols



## STAMP - A multi-function medicine dispenser for adherence to treatment for TB

**STAMP**, an acronym for Support for Treatment Adherence and Medication Protocol, is a multi-function electronic medicine dispenser designed keeping People with TB (PwTB) front and centre. The device not only dispenses the medication at the press of a button, it also reminds users, i.e., people undergoing treatment for TB, to take their medicine at the same time everyday, thereby assisting them to complete their treatment regimen successfully. To avoid being detected as a TB medication dispenser and to address stigma associated with TB, the dispenser is camouflaged as a common household device. STAMP is available in three loose-pill dispensing models - Camouflaged, Ultra-Portable and High Capacity, for monitoring adherence to treatment for various health conditions.

### Goals of STAMP

-  To empower PwTB to take charge of their treatment conveniently
-  To support successful TB treatment completion through regular reminders
-  To ensure privacy and confidentiality of TB treatment
-  To leverage technology to monitor adherence of TB treatment
-  To empower healthcare workers to prioritise areas of action to assist treatment completion

# How STAMP works

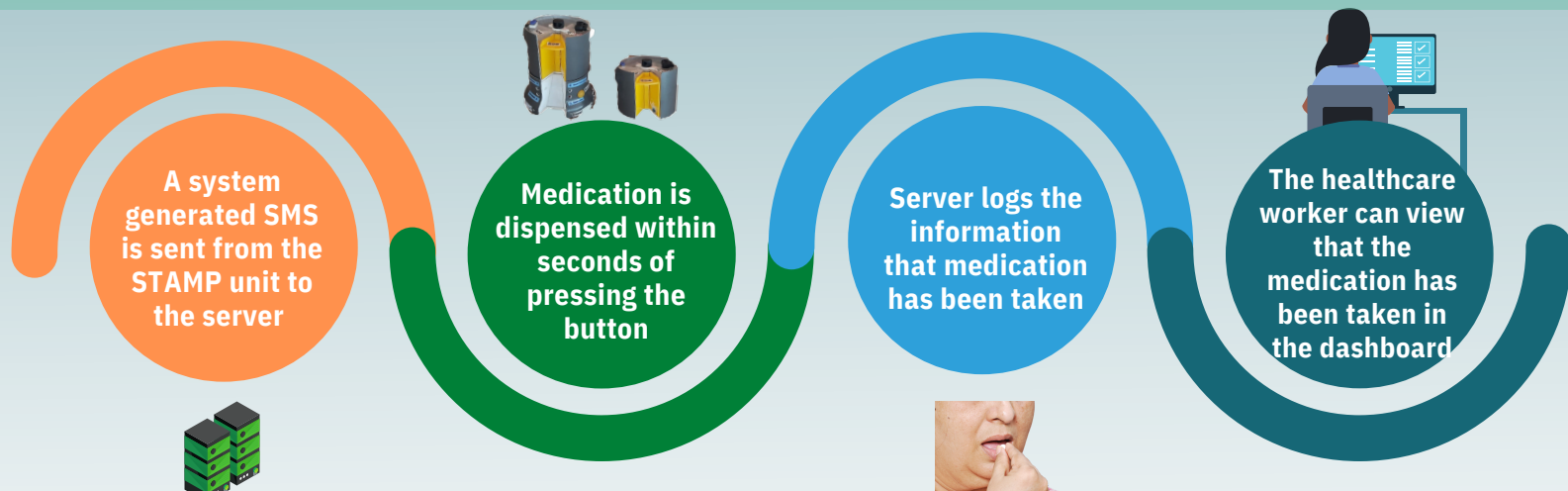
When treatment is initiated, PwTB get a STAMP device with one cartridge (7 days' medicines) inside the pillbox and two more cartridges, each having a week's medication (total 21 days' medication).

The healthcare worker loads the medicine into the cartridges, and also refills them every two weeks in exchange for the empty cartridges.

The healthcare worker guides the PwTB to press the button on the first day of treatment initiation. On the next day, an alarm rings to remind the PwTB to take the medicine.



## When the Dispense Button is pressed



When the Dispense Button is not pressed, (i.e. medicine not taken on time) an escalation protocol is triggered

2 hours later



Text (SMS) in PwTB's preferred language sent to registered mobile number

4 hours later



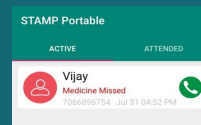
Pre-recorded voice reminder sent to registered mobile number

6 hours later



SMS sent to PwTB's designated caregiver's mobile number, asking them to remind PwTB to take medicines

8 hours later



Healthcare worker notified that PwTB has missed medication so they can directly follow up with PwTB

Next day



Healthcare worker calls PwTB to inquire about missed medication & counsel on importance of treatment adherence

# STAMP delivers the right number of the right pills at the right time in the hands of people



**Adherence to treatment:** The STAMP system helps people on treatment for TB adhere to the treatment regimen towards successful treatment completion.



**Multi-functional and easy-to-use:** The device camouflaged as a household device to address concerns on privacy and stigma. It dispenses medicines at the press of a button.



**Access to information:** On the STAMP website, the PwTB can access their information on key milestones during their treatment, such as adherence, follow-up test, contact screening details etc. via an OTP login anytime

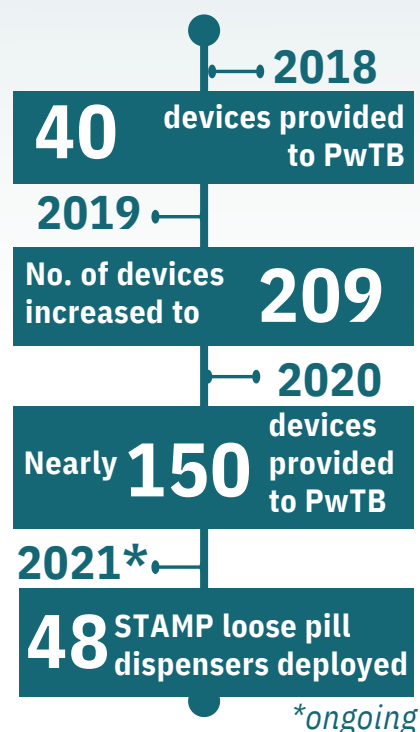


**Leveraging technology for monitoring treatment adherence:** Mentors can monitor the treatment adherence of all people under their care on a daily basis.



**Monitoring and evaluation:** A mentor-administrator can support the monitoring and evaluation of the various actions taken by healthcare workers for supporting PwTB

## Timeline



### Recommendations

19. Prioritize the procurement of digital technology on time and validate the STAMP pill dispenser technology.

41. Consider implementation of the standard treatment adherence medication protocol (STAMP); maybe by first running a pilot with approximately 200 devices. This system works as follows: patient presses button; the machine dispenses the correct number of pills; and then sends an SMS to the supporter/electronic dashboard.

**Recommended by WHO-led JMM:** For improved adherence to treatment of Drug Sensitive TB (DS-TB), the procurement and validation of the STAMP device has been recommended in the 2019 report of the Joint Monitoring Mission. The report also recommends the implementation of STAMP through a pilot

Source: Report of the Joint Monitoring Mission, Revised National Tuberculosis Control Programme, Central TB Division, MoHFW, 2019, P: 140,142



We feel a sense of ownership around our treatment. The design of the device helps preserve my privacy. The small size of the device also made it easy to carry while travelling, ensuring I don't miss a single dose.

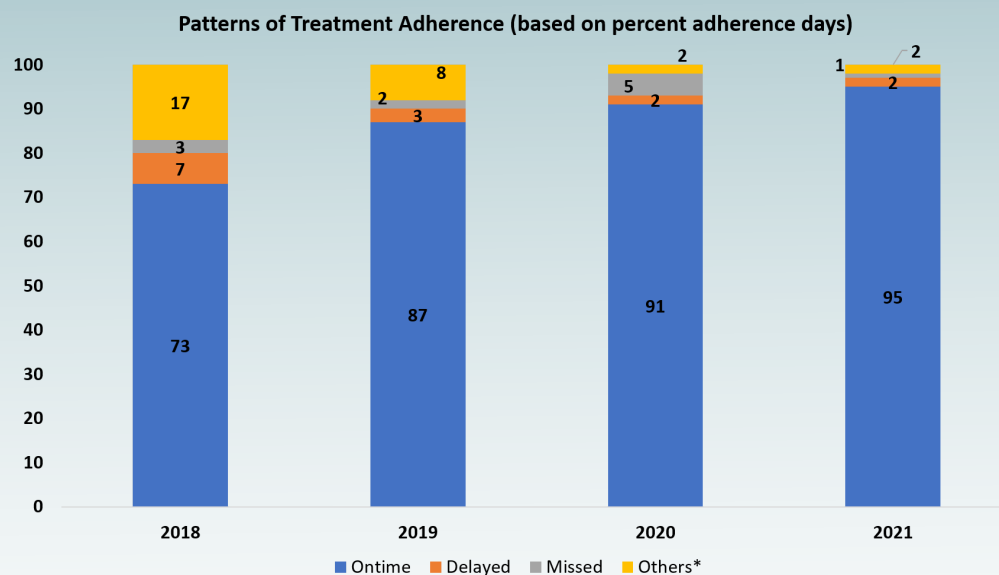
Excerpts from focus group discussion with PwTB using STAMP

Using STAMP, I am able to track people taking medicines via a dashboard and identify people who hadn't taken their medicines. This allowed me to focus on those who need immediate support and ensure minimal gaps in treatment.

Ms. R Kalpana  
Senior TB Nanban, with REACH for 9 years



# On time and overall medication adherence among STAMP users monitored by REACH has improved to >97%



\*Medication paused/not taken due to patient hospitalizations, delayed doctor reviews or device and network issues

## Learnings

- For the very first time, STAMP digitally captures the adherence patterns among PwTB
- STAMP has ensured the right number of pills at the right time into the hands of people
- STAMP empowers PwTB by allowing them to take ownership of their treatment by providing alerts and reminders
- PwTB across income and education levels found STAMP to be easy to setup and use
- TB Nanbans, most of whom are first-time tab users, are able to monitor treatment adherence using the dashboard easily.
- The dashboard helps TB Nanbans to prioritize their day-to-day work, moving from work-hard to work-smart. This encourages digital empowerment among TB healthcare workers
- The dashboard helped the health worker to effectively manage the medicine refills for different PwTB

## About REACH

Resource Group For Education and Advocacy for Community Health or REACH is a non-profit organisation established in 1999. Through an unrelenting focus on TB for the last two decades, REACH has been a key partner in India's efforts to end TB, by developing innovative strategies to engage a range of stakeholders including the public health system, private sector, TB-affected communities, business leaders, celebrities and the media. Challenges were faced during REACH's past efforts to engage Chennai's private medical practitioners in the fight against TB from the inability to quickly detect and address breaks in adherence to treatment, difficulties in focusing efforts on those struggling with adherence, and collecting good data for compliance assurance. REACH collaborated with SMD to provide a rigorous solution to these problems, enabling healthcare workers (TB Nanbans/mentors) to more effectively support people through their journey from TB diagnosis to cure.

## About SMD

Sundaram Medical Devices (SMD) is a Harvard Business School award winning startup based in Chennai. It was founded in 2009 and aims to bring the automotive industry's engineering and cost rigor, manufacturing systems, and high-quality standards to bear on medical manufacturing, delivering devices that embody the highest global quality and usability standards at prices that are affordable to the Indian market. System for Treatment and Adherence Protocol (STAMP) was developed by SMD, based on guidance and feedback from doctors, experts at REACH, and individuals undergoing treatment.

Date of development: 27.9.2021 - This information, based on the present evolving situation, will be updated when new information is available.

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