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AUTOMATED ADHERENCE SYSTEM INTEGRATED WITH PUBLIC HEALTH ACTION IMPROVES TB TREATMENT ADHERENCE (98%); SCOPE FOR USAGE IN TB-DM

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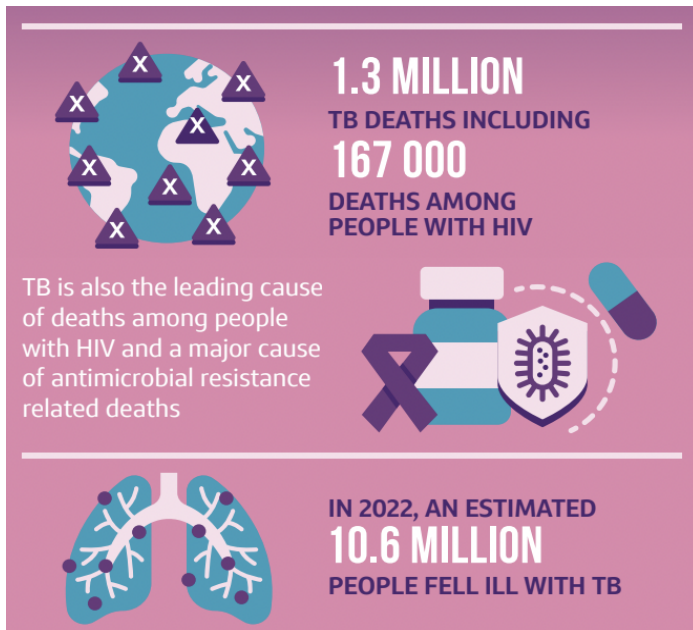
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NON-ADHERENCE TO ANTI-TB THERAPY IS RECOGNISED AS ONE OF THE MAIN CHALLENGES TO TB CONTROL



Non-adherence is a key reason why TB treatment programs fail, and it results in:

- high rates of mortality,
- MDRTB cases,
- expensive TB therapy,
- prolonged infectiousness,
- spread of TB in the community.

Patients with TB are expected to adhere to treatment plans at a level of more than 90% to facilitate a cure or have a favorable outcome



IN 2018 REACH AND SMD LAUNCHED A 5 YEAR STUDY TO EVALUATE MEDICATION ADHERENCE AMONGST PWTB IN CHENNAI

The primary goals of the project were to:

- Understand and improve medication adherence amongst PwTB
- Identify individuals who need additional support with treatment
- Collect verifiable data on medication adherence





MONITORING TREATMENT ADHERENCE AMONGST PWTB IN CHENNAI (2018-2023)

Population: PwTB (DS) enrolled in the national TB program through REACH Nakshatra Centers. Total number of PwTB in the study: 1535

Location: Chennai, Tamil Nadu - India

Duration: 2018 - 2023

Data collection & Analysis

- Adherence data from the STAMP database
- Interviews of PwTB
- Statistical analysis

Process

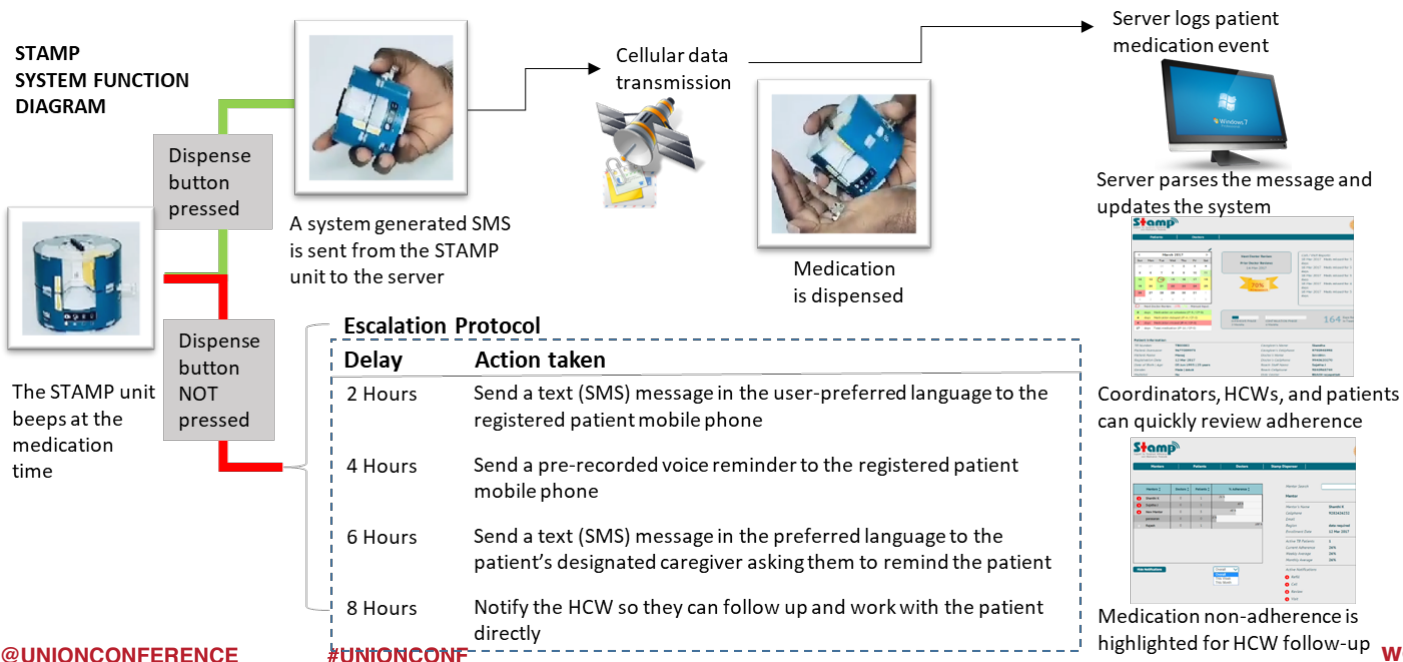
When treatment is initiated, PwTB gets a STAMP device with two prefilled cartridges (14 days' medicines)

HCW demonstrates to the PwTB how to setup STAMP, dispense medication, change the cartridge once empty, etc.

The next day the alarm rings at the designated time to remind the PwTB to take their medication. Once the cartridge is empty (after 7 days), PwTB replaces the empty cartridge with a pre-filled cartridge.

PwTB exchanges two empty cartridges for two filled cartridges, during their fortnightly visit to the health center.

STAMP HELPED PWTB ADHERE TO THEIR MEDICATION REGIMEN AND ENSURE TIMELY INTERVENTION BY HCWS



SUPPORT FOR TREATMENT ADHERENCE TO MEDICATION PROTOCOL (STAMP)





DURING THE COURSE OF THE STUDY, ON-TIME MEDICATION ADHERENCE IMPROVED TO 98%

The analysis revealed a significant improvement in medication adherence rates among PwTB after the implementation of STAMP.

Medication Adherence	2018	2023
On time:	73%	96%
Delayed:	7%	2%
Missed:	3%	1%



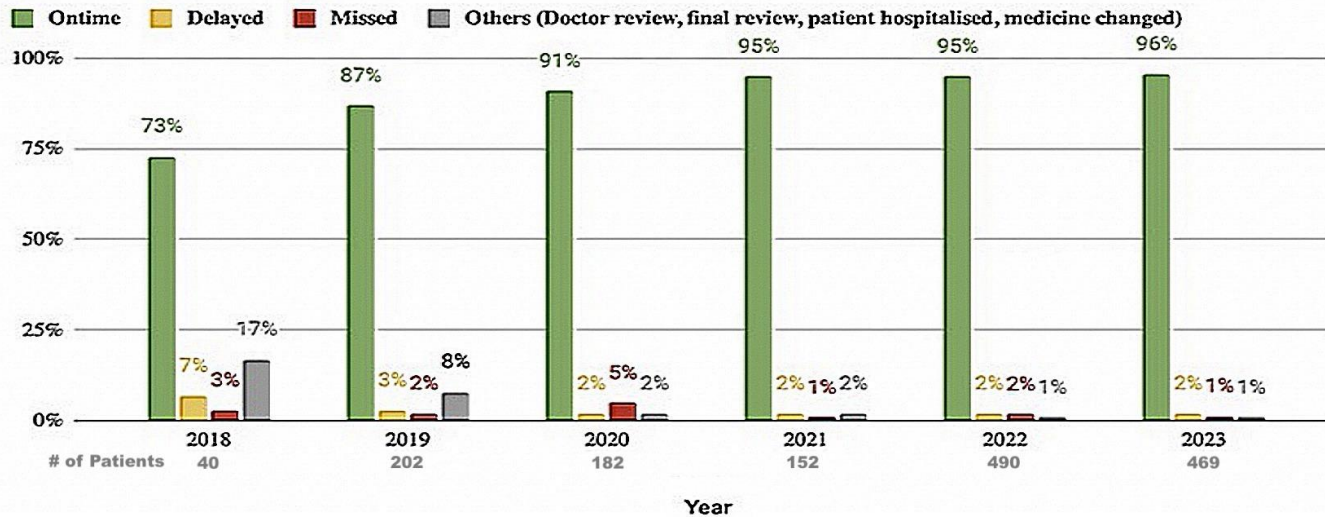
Implementation of STAMP, improvement in HCW follow-ups, reduction in stigma and change of drug (FDC) led to

- improvements in medication adherence among PwTB,
- reduction in workload and increase in efficiency of HCWs, and
- better patient care due to automation in adherence monitoring and patient communication.

The integration of STAMP with health programs can help address non-adherence challenges and improve outcomes.

FINDINGS: IN ADDITION TO IMPROVED ADHERENCE RATES, HCWS WERE ABLE TO REDUCE GAPS IN TREATMENT

Medication Adherence Rate (2018 - 2023)





FINDINGS: HCW INVOLVEMENT, TRAINING OF HCWS, AND FAMILY SUPPORT ARE KEY COMPONENTS OF TREATMENT SUCCESS

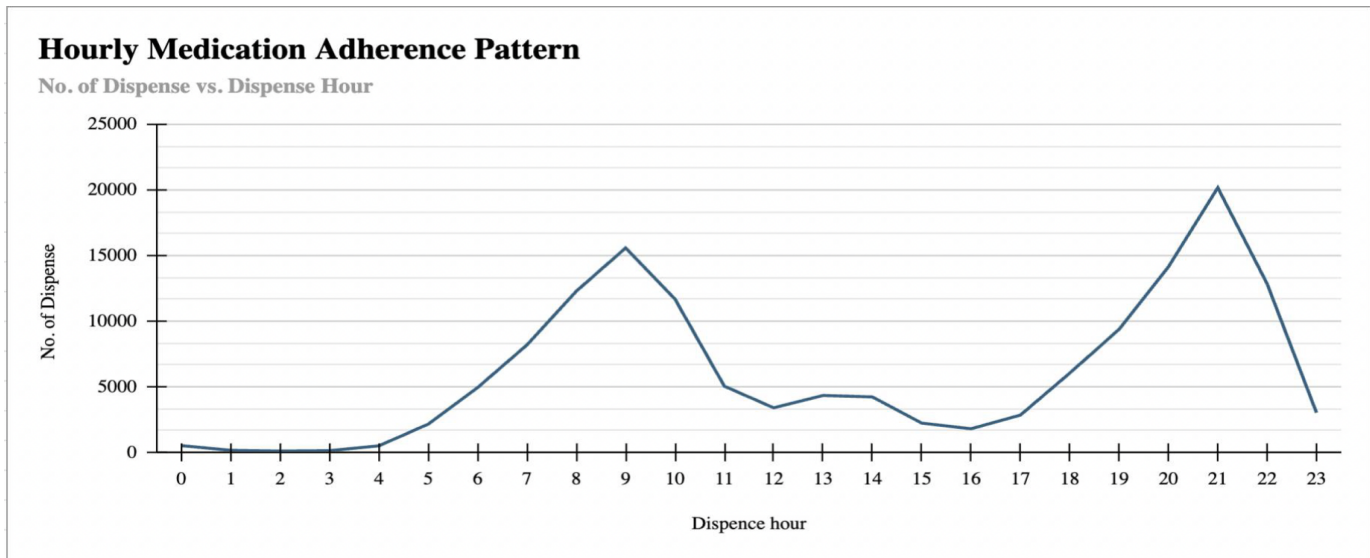


- **Health Care Workers (HCWs):** Serve as frontline advocates ensuring medication adherence and patient education. Their timely interventions improve treatment outcomes.
- **Training for HCWs:** Essential for staying updated on protocols, communication skills, and technology use like STAMP, enabling effective patient management.
- **Family Support:** Key in motivating and reminding patients to adhere to medication, offering emotional backing, and fostering a supportive home environment. This reduces non-adherence.

Together, these elements improve patient adherence, care quality, and health outcomes.



FINDINGS: CLEAR PREFERENCES FOR MEDICATION CONSUMPTION AT BEDTIME, ESPECIALLY AMONGST INDIVIDUALS EXPERIENCING DRUG SIDE-EFFECTS





NEXT STEPS

Consider scaling the use of STAMP for broader healthcare applications in TB control, including DR-TB treatment and Tuberculosis Preventative Therapy (TPT) programs.

Expand research on the long-term impact of STAMP on treatment outcomes and healthcare worker efficiency.

Evaluate STAMP's effectiveness in different demographic and healthcare settings.

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.

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*

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



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Pic source REACH, Chennai, India



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