

## Introduction

In the Philippines, a high multi-drug resistant tuberculosis (MDR-TB) burden country, directly observed therapy (DOT) resulted in a 45% loss to follow-up (LTFU) of MDR-TB patients due to issues in access. (1) Video-Observed Therapy (VOT) presents a solution by allowing virtual follow-up of patients. Between January 2019 and July 2020, DLSMHSI, a research institution in Cavite, Philippines piloted a VOT technology, SureAdhere (SureAdhere Mobile Technology Inc; California), in six MDR-TB clinics. This project was supported by TB REACH.

## Objectives

To evaluate rate of adherence when using VOT for MDR-TB treatment support and monitoring MDR-TB program and to determine the feasibility and acceptability of the digital tool in this setting.

## Methods

SureAdhere allows patients to record and upload medicine intake videos to a secure server for health care personnel (HCP) to view. We enrolled adolescents and adults (>13 years) with MDR-TB to use SureAdhere for treatment support. Each patient received a smartphone with the SureAdhere application pre-installed and with SIM cards to enable daily reminders and text messages. Patients participated in pre (baseline) and post (after 5 months of treatment) interviews. A self-administered questionnaire was also completed by HCP.

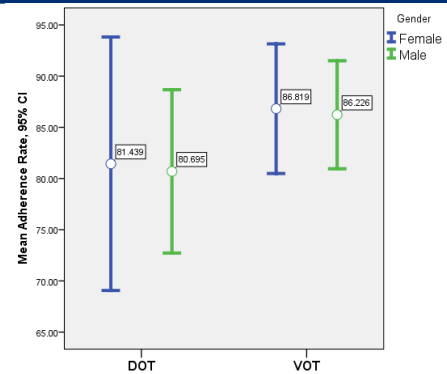


Participant undergoing training on the use of the digital adherence technology

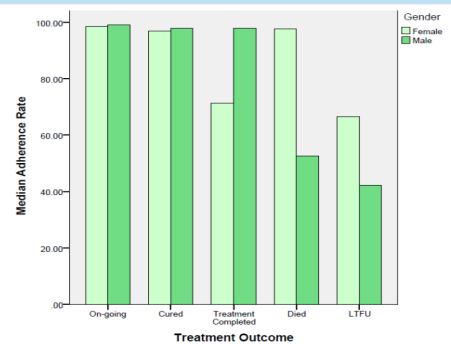
## Results

### Adherence Rate and Treatment Outcomes

DLSMHSI enrolled 110 MDR-TB patients on the SureAdhere platform. After 16 months, 47 (43%) of the enrolled patients were still on treatment with SureAdhere and 32 (29%) completed treatment, while 15 (14%) reverted back to DOT due to poor quality videos, potential non-adherence to treatment, and relocation. In this study, good adherence was defined as intake of equal or more than 90% of prescribed doses. The overall adherence rate of males on VOT was 86.2% which was higher than the 80.7% among males on DOT. While the overall adherence rate among females on VOT was 86.8% which was also higher than the 81.4% on the comparator group.



The overall adherence rate in VOT was less than 90% due to low adherence rate observed in males who died and were lost to follow up and among females who completed treatment and were lost to follow up. For those participants still doing VOT, results indicate good adherence for 39 (83%) patients still on treatment and in 28 (87%) patients who had completed their treatment. Lost to follow-up rate among the VOT patients is at 7.3% (8/110) which is considerably lower than reported 31% lost to follow-up rate among 2016 MDRTB cohorts in the Philippines (2).



### Feasibility and Acceptability

Of the 90 patients who completed interviews, 88 (96%) indicated they would recommend SureAdhere to family or friends affected by TB and that SureAdhere improved their relationship with their HCP. 9/10 HCP shared that SureAdhere helped them provide better counseling and support and that they would recommend SureAdhere to their patients.

### Conclusion and Recommendation

This implementation study showed good adherence rate among MDR-TB patients who were cured and whose treatment are ongoing and completed. The good adherence rate is similar for males and females. The digital adherence technology (DAT) is acceptable for patients and HCP. Due to its success and the positive response among patients and HCP, expansion of VOT services to MDR-TB patients in the Philippines is feasible especially during this pandemic.

## References:

1. Tupasi TE, Garfin AMCG, Kurbatova EV, et al. Factors Associated with Loss to Follow-up during Treatment for MDR-TB, the Philippines, 2012–2014. *Emerg Infect Dis.* 2016 Mar;22(3):491–502.
2. National TB Control, 2019. Review Report 2019 Philippines TB Joint Program Review. Manila Philippines: Department of Health.

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**Correspondence:** Dr. Ma. Tarcela S. Gler, [mmsgler@my.dlshsi.edu.ph](mailto:mmsgler@my.dlshsi.edu.ph)