

Conflict of Interest

The author has declared no conflict of interest.



**Video Observed Therapy:
Digital adherence support for patients with
drug-resistant tuberculosis in eSwatini**

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Background

- eSwatini placed in COVID-19 lockdown measures, but essential health services had to continue.
- COVID-19 has the potential for adverse health outcomes among patients with drug-resistant tuberculosis (DR-TB) and so use of video-observed therapy (VOT) was crucial.
- VOT implemented to minimise exposure of DR-TB patients.

- Historically DRTB patients and community treatment supporters travelled to facilitate direct observed therapy.
- In collaboration with the National Tuberculosis Control Programme, MSF began VOT in three TB clinics in Shiselweni region.



What is video observed therapy (VOT)?

- An innovative, patient-centred way of linking patients and healthcare workers using media devices, such as smartphones.
- Patients are provided with a fully installed smartphone, with a monthly internet subscription, and trained how to take and share videos.
- This method provides instant interaction between patients and healthcare workers throughout the treatment course.

Eligibility criteria

- All DRTB patients , regardless of age , initiated in DRTB treatment at Shiselweni region and who are being followed up by the MSF community nurses from Shiselweni, and residing within Eswatini
- Patient with at least 3 months of treatment duration before completion
- Patients who can use smart phone properly and can maintain its functionality
- Psychiatric patients are included taking into consideration their Mental Health Status Evaluation.

Roll out journey

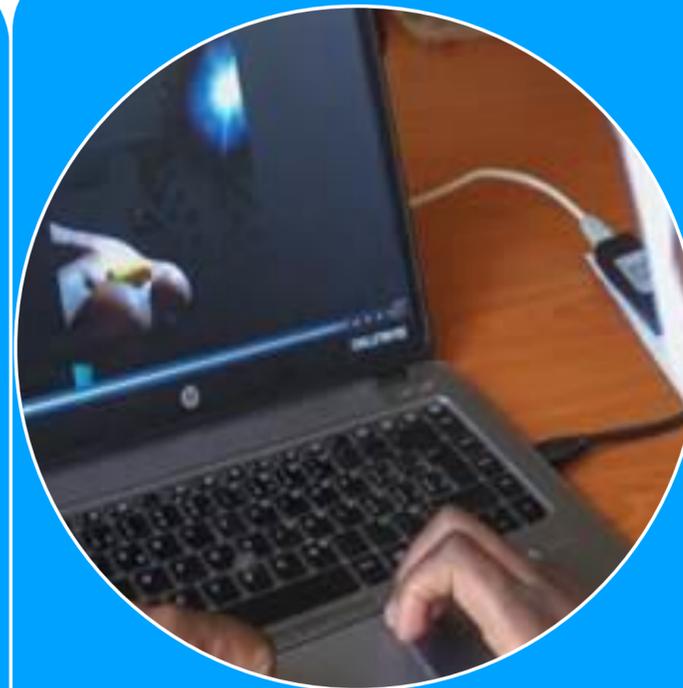
- May 2020: **18 out of 42 patients** (43%) fulfilled the eligibility criteria and started VOT
- End December 2020: **26 out of 41 patients** (63%) **active** on VOT
- End December: Cumulative **total of patients** enrolled on VOT were **28**
- **2 DR-TB patients** successfully completed VOT



A nurse explains the VOT procedure and hands over the smartphone with pre-installed application

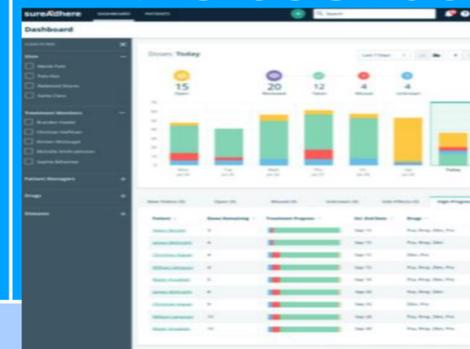


The patient can take medicines at home while recording the video through smartphone application



The video will sync automatically, and the nurse reviews it daily.

An overview treatment history in the dashboard:



If the nurse does not receive the video at the scheduled time, she will call the patient to find out challenges

Benefits of VOT

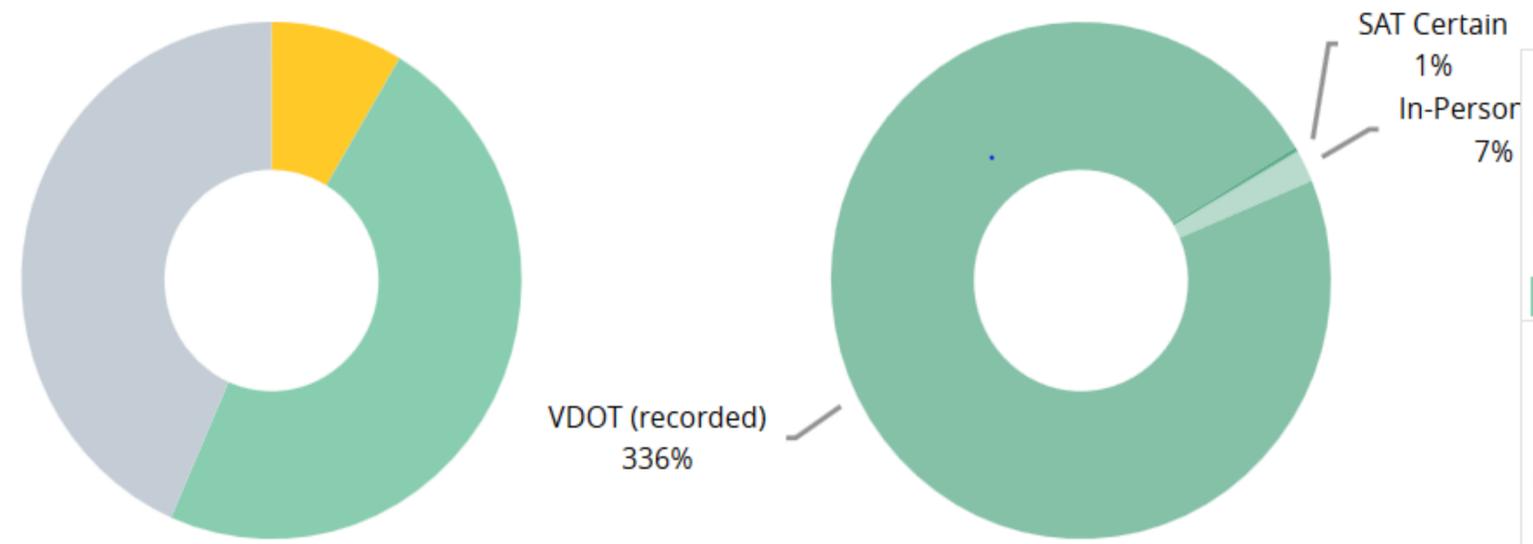
In response to the pandemic, we needed to use VOT to:

- reduce unnecessary contact
- reduce exposure to COVID-19 in healthcare settings
- prevent interruption to DR-TB patient treatment
- help with good adherence.
- It reduce travelling burden and costs

Data collection and analysis

A web-based dashboard allows nurses to collect monthly data on:

- how many DR-TB patients used VOT
- adherence level of patients (right time, correct number of tablets, route, swallowing).



Total Progress Taken Missed

Doses	Taken	Not Taken	Scheduled	Held	Challenge	Rescheduled
Counts towards Adherence	343	371	714	0	0	0
Does not count towards adherence	1	0	1	0	0	0

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28 2x ✓	1 2x ✓	2 2x ✓	3 2x ✓	4 2x ✓	5 2x ✓	6 2x ✓
7 2x ✓	8 2x ✓	9 2x ✓	10 2x ✓	11 2x ✓	12 2x ✓	13 2x ✓
14 2x ✓	15 2x ✓	16 2x ✓	17 2x ✓	18 2x ✓	19 2x ✓	20 2x ✓
21 2x ✓	22 2x ✓	23 2x ✓	24 2x ✓	25 2x ✓	26 2x ✓	27 2x ✓
28 2x ✓	29 2x ✓	30 2x ✓	31 2x ✓	1 2x ✓	2 2x ✓	3 2x ✓

Adherence monitoring results

Adherence level	Very Good 95>	Good(90-94)	Moderate <90
May-2020 (no=18)	100%		
Jun-2020 (no=23)	100%		
Jul-2020 (no=24)	96%	4%	
Aug-2020 (no=25)	92%	8%	
Sep-2020 (no=26)	81%	7%	12%
Oct-2020 (no=26)	77%	15%	8%
Nov-2020 (no=25)	80%	20%	
Dec-2020 (no=26)	100%		

Lessons learnt from VOT

- DR-TB patients are **empowered** through self-administered treatment.
- VOT allows DR-TB patients to be **shielded** from COVID-19.
- **Privacy**, confidentiality and comfort for patients.
- **Adherence** can be remotely monitored by nurses without reliance on community and family treatment supporters.
- VOT facilitates **early identification** of poor adherence to DR-TB treatment and prompt interventions.
- We were able to provide adherence support despite COVID-19 and movement restrictions

Challenges

Patient related:

- Patients depleted their data packages before the end of the month thus it delayed uploading videos to the nurses
- Poor recording of videos

Other factors:

- Network coverage issues delaying videos to the nurses

Next steps



- Building on lessons learnt and , continue supporting patients on VOT
- VOT to be considered as standard of care in eSwatini after COVID-19
- Qualitative research to get the perspectives of patients on VOT

Acknowledgement

to all the patients and healthcare workers, Ministry of Health who were involved in this project.

Ethics statement

This description and evaluation of an innovation project involved human participants or their data, and has had ethics oversight from Medical Director, Operational Centre Geneva, MSF.



Thank you

Siyabonga