Video and family directly observed therapy for drug resistant tuberculosis in Karakalpakstan, Uzbekistan

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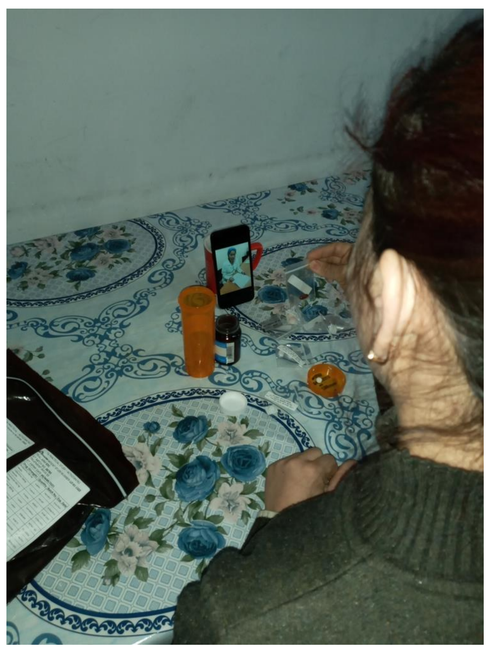


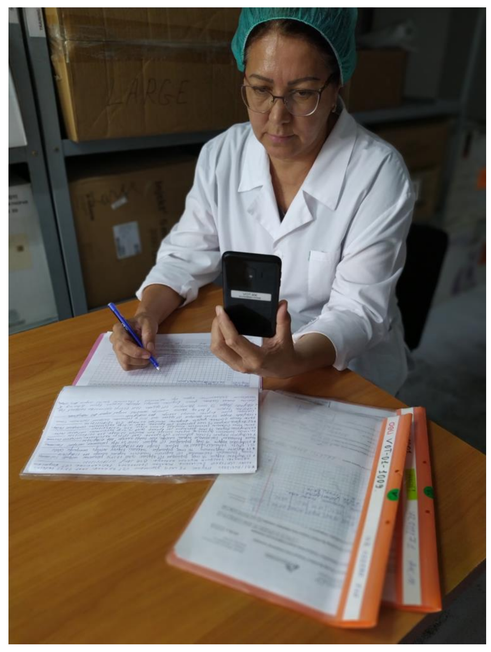
19 year old Kundyz, a patient with multi-drug resistant tuberculosis from Karakalpakstan in northwest Uzbekistan takes her daily TB medicines by VOT.

Introduction

In the Republic of Karakalpakstan (Uzbekistan), TB care is decentralized to 17 districts under the national TB programme. Individuals who are not able to attend daily DOT are admitted to a TB hospital. Barriers to DOT include distance, travel costs and community stigma. Nurse-led home DOT is capacity restricted.

April 2020 saw a five month strict lockdown due to the COVID-19 pandemic. MSF used this opportunity to mobilize support for VOT/F-DOT implementation.

We report data on 107 individuals started on VOT/F-DOT from 1st April 2020 to 1st December 2021 across 23 facilities.



MSF nurse Gulnara monitors online the patient with multi-drug resistant tuberculosis taking daily TB medicines.

Methods

For inclusion, patients were over 18 years, had completed two weeks of in-person DOT, were able to identify each medication, and for VOT, had reliable mobile internet connection.

Patients in the last two months of treatment or with significant co-morbidities were excluded. Following hospital admission, outpatient DOT was nurse led for two weeks prior to VOT/F-DOT restarting.

Medications were collected once a week by the patient or care-giver. Asynchronous VOT was provided by texting daily video recordings via Telegram.

Follow up time is from enrolment to VOT/F-DOT, to DRTB treatment outcome, or 10th July 2022 if outcome is not yet given.

Descriptive analysis VOT/F-DOT cohort

	VOT/F-DOT (n=107)
Age	
VOT (n=35)	35 [19-57]
F-DOT (n=72)	46 [15-81]
	VOT/F-DOT (n=107)
Gender n[%]	
Male	42 [39.3]
Female	65 [60.7]
Average treatment start month	6.0 [0.5-16.4]
Average total months F-/VDOT	9.7 [2.7-18.3]
Microbiological diagnosis n[%]	
H/HE resistant	10 [9.3]
MDR	83 [77.6]
Pre-XDR	11 [10.3]
XDR	3 [2.8]
	VOT/F-DOT (n=75*)
Outcomes n[%]	
Treatment success	72 [96.0]
Cured	64 [85.3]
Treatment complete	8 [10.7]
Failure (reversion to culture positive)	2 [2.7]
Died	1 [1.3]

* 32 individuals remain on treatment

“With close monitoring and support, patients are able to return to VOT/F-DOT despite events such as hospitalization, and achieve treatment success.

Acknowledgements
We would like to thank the Ministry of Health nurses and MDs who have adopted VOT/F-DOT into their practice, and the MSF Nukus medical team for initiating and supporting the programme.

Results

107 patients (42 men and 65 women) participated, with an average age of 35 years (19-57) for VOT and 46 years (15-81) for F-DOT. 10 patients were isoniazid +/- ethambutol resistant, 83 MDR, 11 pre-XDR and 3 XDR. All rifampicin resistant patients were on an all oral 18-24 month regimen.

VOT/F-DOT started an average of 6 months into treatment (0.5-16.4), with an average treatment duration of 9.7 months (2.7-18.3 months).

“This novel treatment approach has made life easier for stigmatized patients who do not want others to know they have TB,” nurse Gulnara

75/107 individuals have achieved a TB outcome; 72 (96%) treatment success, one death (1.3%) and two failures with reversion to culture positivity (2.7%).

VOT/F-DOT was interrupted for 38 individuals, with 9 individuals being interrupted more than once. Absolute indications to stop were poor adherence, missed follow up and unreliable internet (n=6), patient choice (n=2) and culture reversion (n=2).

Reasons for interruption to VOT/F-DOT

	VOT/F-DOT paused* (n=47)	VOT/F-DOT discontinued (n=20)
Hospitalized		
Side effects	23	4
Co-morbidity	7	4
Mental health	5	2
<80% doses / missed follow up / poor internet	6	6
Culture reversion	2	2
Care giver migration	2	0
Patient choice	2	2

* 9 individuals VOT/F-DOT was paused more than once

Conclusion

VOT/F-DOT reduces travelling time and cost for patients and healthcare providers, and helps maintain confidentiality. With careful patient selection, the implementation of VOT/F-DOT is feasible, acceptable and successful for DR-TB. With close monitoring and support, treatment complications can be identified timely, and patients are able to return to VOT/F-DOT despite events such as hospitalization, and achieve treatment success.