

# TB REACH Wave 6: KNCV DIGITAL ADHERENCE (99DOTS) PROJECT IN TANZANIA

## Background:

People with tuberculosis (TB) must take treatment every day for six months or more. This can be very hard for patients to comply and complete. Though the national treatment success rates are better at 90% national average (NTP 2018 Annual report), treatment success is still lower among patients in the artisanal mining populations.

## What problem did your intervention address?

KNCV Tuberculosis Foundation (KNCV) implemented an intervention supporting adult DS-TB patients in mining populations to adhere to and complete their TB treatment using a digital adherence technology (DAT), 99DOTS. The project goals was to assess practicalities, scalability, and impact of using the 99DOTS for TB treatment in the artisanal population in Geita region, Tanzania, with a sub-objective of the impact on treatment outcomes.

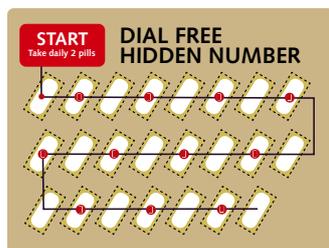
## Why was it innovative, what kind of vulnerable population did you work with, what made your project unique?

The 99DOTS demonstration project specifically targeted the persons involved in artisanal/informal mining as they are susceptible to TB infections. Miners in these rural communities typically live in poorly ventilated, crowded mining camps, work underground in small, dusty spaces, and do not have access to the company-employed TB doctors that are available in the large-scale mining industry. While chasing gold rushes, these miners often move between different mining camps and lack family or community support that is available to persons diagnosed with TB in the communities. Furthermore, when miners who are infected with TB return home to their families, they spread the infection to their family members.

## 99DOTS Platform:

A total of 937 (327 female and 610 male) adult DS-TB patients have been enrolled on the 99DOTS platform between February 2019 and May 2020 in 11 intervention facilities in the Geita region.

Patients are given their TB drugs in special 99DOTS medication sleeves and asked to make a toll free call to a random number which is only displayed when the pill is removed from the blister daily. The patient receives an automated confirmation message indicating their daily dose has been successfully logged on the 99DOTS platform. Health care providers log onto the 99DOTS platform to view patient daily adherence.



99DOTS (phone call technology)



## Patient support:

Patients who do not log their daily dose on the 99DOTS platform, are sent an automated reminder message on the same day. Patients who do not log their daily dose for two or three (or more) consecutive days are called by a health care provider or paid a home visit by a community health workers (CHW) respectively.

## Results of the intervention Preliminary Results:

As part of ongoing operational research, a sample of 200 patients on the 99DOTS platform was surveyed, 97.5% of them agreed that the use of the 99DOTS helped them to complete their TB treatment: 98% of patients said they liked the automated reminder messages to take their daily dose; and 96% of the patients found the platform easy to use. Similarly, 21 health care workers were interviewed, and 100% of them agreed that the platform simplified their work, saved their time on managing a high load of patients at the facility, and most importantly improved the relationship between

the health care workers and the patients.

Comparison for quarter 1 2019 cohort (which is the only cohort with the treatment outcomes so far), indicates that the treatment success rate among patients on the 99DOTS platform is 98% compared to 96% in the control facilities. Similarly, the cure rate among bacteriological confirmed patients was higher (38%) compared to (29%) from the control facilities. The mortality rate was lower (2%) compared to (4%) in control facilities. Additionally, for the duration of the implementation (Feb 2019 to April 2020) only 2% of patients enrolled on the 99DOTS platform were lost to follow-up (LTFU) compared to 7% of patients from the control facilities during the same period.

## Conclusion and Recommendations:

Preliminary findings indicate that patients and healthcare providers accept the use of Digital Adherence Technologies to support their treatment. Despite the infrastructural limitations in the set up of the 99DOTS platform – difficulties in securing 20 national toll free lines. In general using DATs was seen to simplify the healthcare provider's role in supporting the patient improved the patient/healthcare provider relationship which is a critical component of treatment support.

## Patient and Health Care Worker Stories

"On the 99DOTS platform patient records are well kept and easily accessible. As a health care worker, you don't have to take much time to go through the bundle of

patient cards. Here it's simple; just a click. I remember once we had a TB patient taking medication at this facility. We wanted to contact him, but we couldn't get his treatment card to find the details to reach him. Then we remembered that we have the patient on the platform. We did the click and less than twenty seconds we were already talking with him"

**Mbusiro Marwa is a health care worker and DOT provider at Katoro Health Center.**

"One day I traveled to a nearby village and forgot to take the drugs with me. When I returned home in the late evening, my normal time for taking the pills had gone and so I forgot to immediately take the pills after I returned. I received a message reminding to take the pills and make the call. I took the pills and called the number. Without the reminder message, I would have missed the dose on that day" .... **Jacob Edward a 32 year old TB patient**

"99DOTS was very important in the successful completion of my treatment. The system of taking the pills and making a call; it was like getting a motivational message every time called. There was a day when I almost forgot to take the pills, I was busy in the mines. In the evening I received a message reminding me to take the medicine, I was about to miss the dose that day if not for this message. The process of using 99DOTS is not time consuming, not at all. It is an interesting practice. I encourage other TB patients to use 99DOTS it supports patients to complete treatment in many ways." **Riziki William was diagnosed with pulmonary TB, he was enrolled on the 99DOTS platform and never missed a dose, every day he took pills and successfully made the free call to the 99DOTS platform, with an outstanding 100% adherence from enrolment to treatment completion.**



DOT nurses at work in Bukwimba

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