

THE ACCEPTABILITY AND FEASIBILITY OF DIGITAL ADHERENCE TECHNOLOGY (99DOTS) TO SUPPORT PATIENTS AND HEALTH CARE WORKERS IN A RURAL SETTING Evidence from Tanzania

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Background

In Tanzania, patient adherence to TB treatment has been particularly low in the artisanal mining populations. These populations live in poorly ventilated, dusty spaces underground. KNCV implemented a digital adherence technology (DAT), 99DOTS, to support adult DS-TB patients in mining populations to adhere to and complete their TB treatment.

99DOTS Platform

Patients were given their TB drugs in special 99DOTS medication sleeves that revealed random toll-free numbers, which they called to log their dose on 99DOTS.

Positive Predictive Power

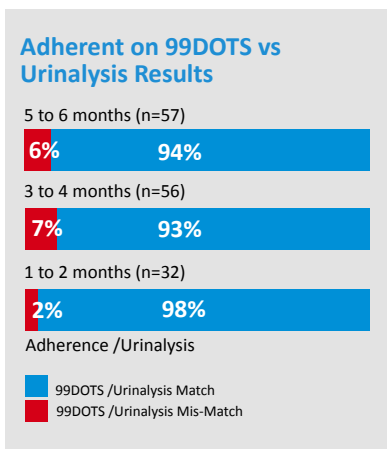
The positive predictive power of 99DOTS was 95%— testing the presence of Isoniazid in the patient’s urine sample with an accurate prediction that the pill was taken (positive adherence) in 95% of patients who had logged their dose on the platform. The positive prediction was highest (98%) in patients who were in the first 2 months of treatment.

99DOTS Feasibility

The cure rate among bacteriological confirmed patients was higher in the intervention facilities (38%) compared to (29%) from the control facilities, and the mortality rate was lower (2%) than in in control facilities (4%). Additionally, 2% of



Patients using 99DOTS



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.

Limitations

50% (100) of patients surveyed did not own phones but had access to phones shared by family or friends. Additionally, changes in medication form factor affected the supply of the pre-designed medications sleeves as these we sourced outside Tanzania.

Patient Testimonial

“The 99DOTS was very important in the successful completion of my treatment. I take my pills and make a free call to a number revealed only after the pill is removed from the 99DOTS package, and I received a message every time confirming my dose is successfully logged on the platform. The process of using 99DOTS is not time consuming, and it helped me complete treatment.” Riziki William was diagnosed with pulmonary TB, he was enrolled on 99DOTS and never missed a dose, with an outstanding 100% adherence from enrolment to treatment completion.

Conclusions and Recommendation

99DOTS was seen to be a reliable proxy for patient adherence, and patients confirmed the DAT helped them adhere to/complete their treatment. It simplified HCWs work and improved their relationship with their patients - a critical component of treatment support. To combat the challenges of access to mobile phones, other types of DATs such as a smart pill boxes should be considered in this setting. Countries should be made aware of any changes to medication form factor supplied.

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99DOTS Patient Acceptability

