

THE INTRODUCING NEW TOOLS PROJECT (iNTP)

Experience Using 99DOTS in Nigeria



Background

The use of directly observed treatment (DOT) to ensure tuberculosis (TB) treatment adherence can be burdensome for people with TB. Daily visits to health facilities require significant time commitment and incur costs for transportation. Furthermore, the availability of health care workers to support DOT can be a challenge where human resources are scarce. In addition to that, the use of DOT has been found to have limited effectiveness in improving treatment outcomes: a systematic review of studies conducted in 15 countries between 1998-2012 showed no convincing evidence that clinic-based DOT was more effective than self-administered treatment.¹

Digital Adherence Technologies (DATs) can add value to improving TB treatment adherence, as they can remind people being treated for TB to take their medications, facilitate digital observation of pill-taking, compile dosing histories, and triage people with TB based on their level of adherence. These features can improve the provision of people-centered TB care based on individualized needs and risks for treatment interruption.

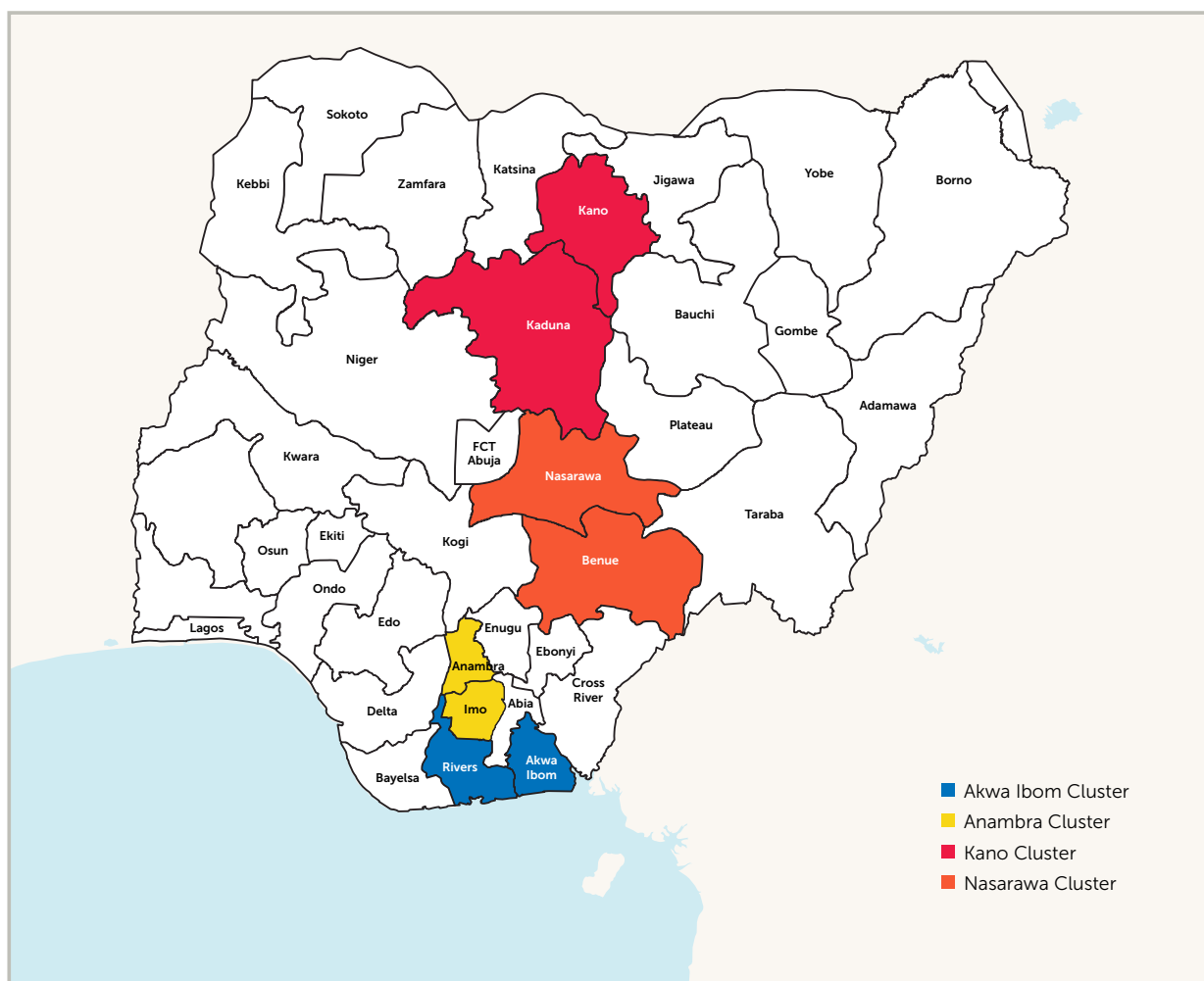
¹ Tian J, Lu Z, Bachmann MO, Song F. Effectiveness of directly observed treatment of tuberculosis : a systematic review of controlled studies. *Int J Tuberc Lung Dis.* 2014;18:1092-8

Continue reading... 

Under the USAID-funded *introducing New Tools Project* (iNTP), the Stop TB Partnership provided funding support for the introduction of DATs in Nigeria using two intervention models: Video Supported Treatment (VST), in which people with TB use the SureAdhere App on their smartphones to send videos of medication intake daily; and 99DOTS, adapted to country context to use medication labels with a unique hidden 3-digit code on each blister pack sent to the country short-code 3340 to log in medication intake daily using one's phone. The Everwell App provides a dashboard to allow health care workers to digitally monitor medication adherence.

With oversight from the National Tuberculosis and Leprosy Control Program (NTBLCP), KNCV Tuberculosis Foundation Nigeria implemented the DATs alongside partners in 8 states of the country: Akwa Ibom, Rivers, Kano, Kaduna, Benue, Nasarawa, Imo and Anambra states. These states were selected within the USAID-funded TB LON 1&2 project coverage area and reflect a mix of TB burden and treatment success rates.

Figure 1: Map of the selected eight states for DAT implementation



Continue reading... 

7,665

people with TB cumulatively enrolled on DATs in both intervention models

98%

adherence to the DAT among individuals who were cured

99%

adherence to the DAT among individuals who completed treatment

Overview

A total of 248 health care workers, including DOT officers and TB LON 1&2 project facility-level support ad-hoc staff, were trained on DATs implementation and enrollment of people with TB using the SureAdhere VST App and Everwell 99DOTSlite App from 98 selected facilities, within the 8 states of implementation.

Through the support of the NTBLCP call center, KNCV Tuberculosis Foundation Nigeria and partners provided

an additional layer of differentiated care support to both health care workers and persons on treatment using DATs. The NTBLCP call center supported health care workers in managing individuals who did not report digital doses resulting in at least 3 consecutive missed doses; these people were line-listed and contacted to identify reasons for missed doses and provided support to encourage treatment continuation and improved adherence.

Highlights

KNCV Tuberculosis Foundation Nigeria enrolled persons with TB into DATs between October 2021 and August 2022. A total of 7,665 people were cumulatively enrolled on DATs in both intervention models by August 2022: 7,605 (99%) were enrolled on 99DOTS, while 60 were enrolled on VST. Of the total number of those enrolled, 38 had drug-resistant TB while 7,627 had drug-susceptible TB.

The main limitation in rolling-out the VST was that people undergoing treatment needed a smartphone to be able to use the SureAdhere app for video recording of medication intake. This resulted in a low uptake of VST, which remained below 2% against project targets for the duration of the project. Furthermore, there was a subsequent decrease in the number of people with TB enrolled on VST as 55% of them (82/150) switched from VST to 99DOTS.

Interviews were conducted with people who switched from VST to 99DOTS to ascertain the reasons for poor VST uptake and guide future DAT implementation. Out of the 25 people interviewed, 48% (12) reported issues surrounding stigma and not wanting to be seen while making videos, 16% (4) reported a knowledge gap and difficulty in using the SureAdhere video app, 12% (3) reported technology fatigue complaining of sending too many videos while 16% (4) reported other reasons including loss/damage of smartphone, time constraints and error in enrollment into VST. There was a sustained enrollment of people with TB on 99DOTS throughout the project period (7,605); this was largely attributed to the ease of entry to 99DOTS which required a basic feature-phone easily available to people on

treatment, their family members or treatment supporters, as opposed to access to a smartphone to utilize VST.

To ensure additional continuous support and counseling, a NTP call center was established for this, which served as a differentiated care approach to reach out to patients who were observed to miss their doses after contact by the HCW providing an additional layer of accountability for the patients. Based on the Adherence Reports, 33% (294) of patients in this cohort had more than 2 missed doses requiring contact from the NTP call center. Of that number, 259 patients were successfully returned to care accounting for 88% return rate.

At the end of the project period, 890 preliminary treatment outcomes were reported for people enrolled on DATs between October – December 2021. Of this number, 326 individuals were reported as having been cured, 493 were reported as having treatment completed, 41 were reported as having died, 23 were reported as having been lost to follow-up, and 7 were reported as having treatment failure. This showed a 92% treatment success rate for the outcomes reported at the end of the project.

For the cohort of people on 99DOTS in this case study, those who were cured had a 98% adherence to the DAT, and those that completed treatment had a 99% adherence. People that did not have positive treatment outcomes had a lower adherence rate to the DAT: those who died had a 75% adherence, those who were lost to follow-up had an 86% adherence, and those with treatment failure had a 79% adherence.²

² Everwell Adherence Platform

Continue reading... 

Figure 2: Monthly Enrollment by DAT Type

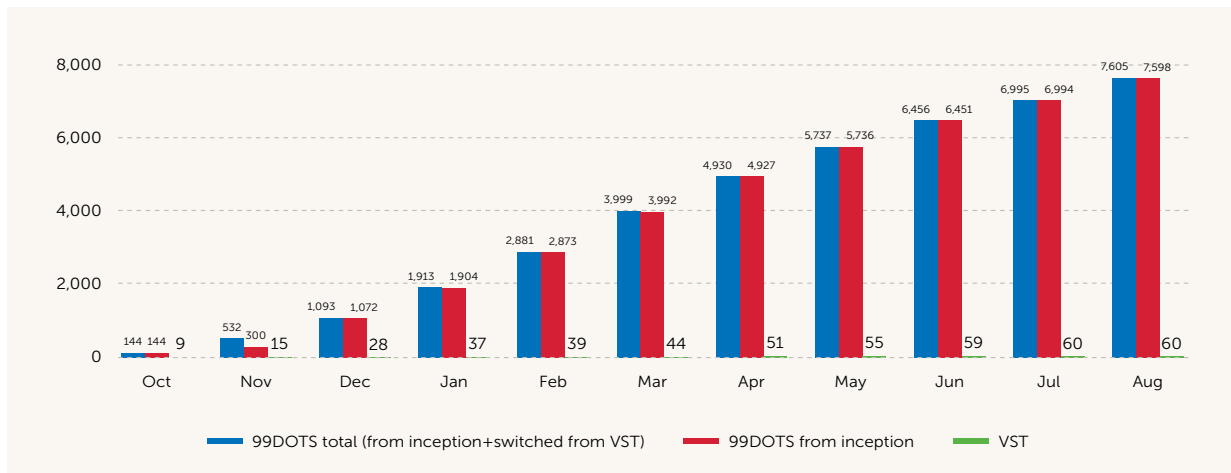


Figure 3: Enrollment by Age & Sex

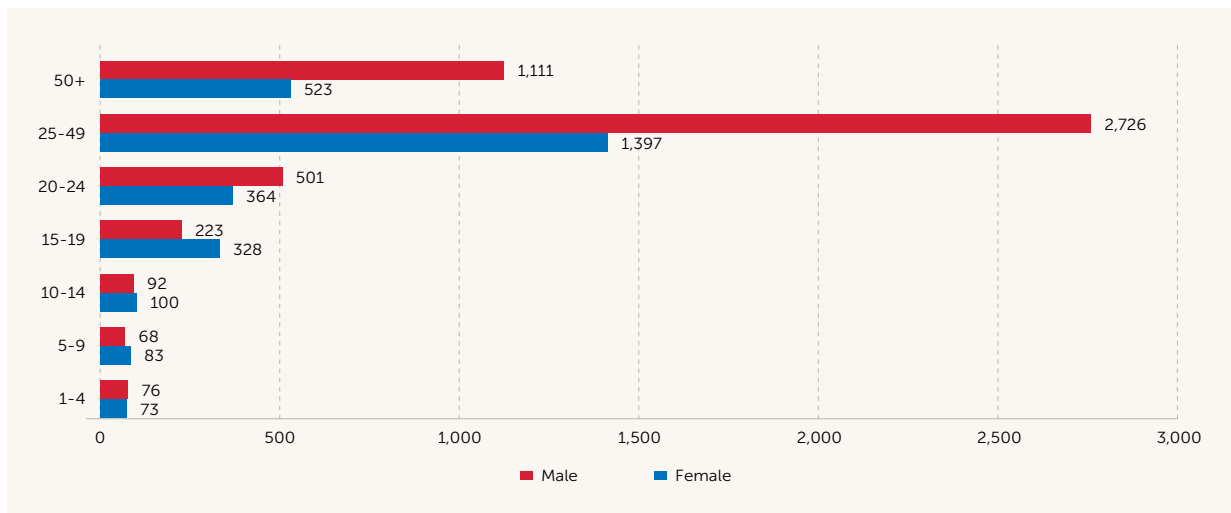
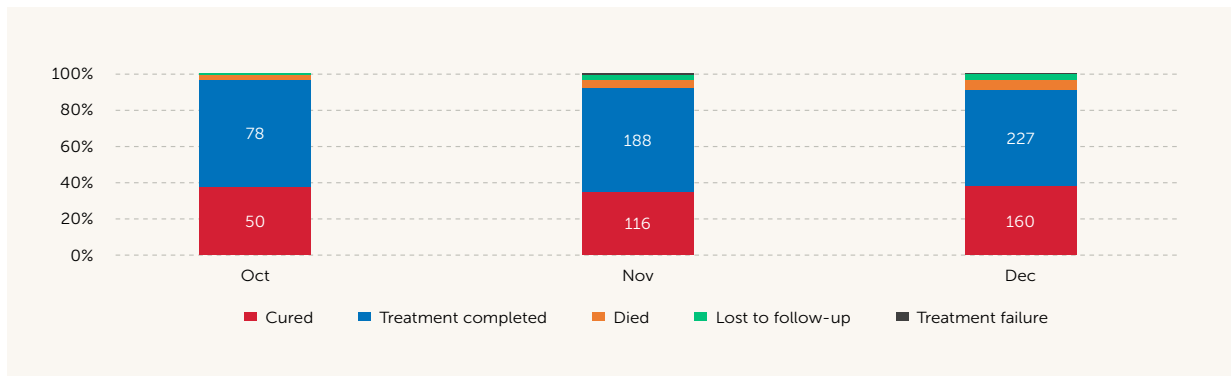


Figure 4: Preliminary Treatment Outcomes



Source: Everwell Platform Program Data

Continue reading...



Lessons Learned



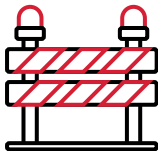
1. Quality Counseling

Client counseling at the time of DATs enrollment and routine counseling post-enrollment during facility visits is pivotal to DATs compliance. When structured to encourage people to use the features of the adherence app, these counseling sessions provide people with a continued understanding of the benefits of DATs in supporting treatment adherence and adherence to using the DATs.



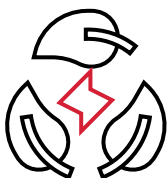
2. DATs Demonstration

Individuals with lower digital literacy levels who were unable to send codes during the enrollment training were observed to be less likely to send codes during the treatment period. This was due to inadequate hands-on information on the use of DATs, as reflected in call center reports of client feedback on reasons for missed doses.



3. Technology Barrier

DATs with low technology requirements and reminder systems (such as 99DOTs) were observed to be more acceptable to people on treatment and easily accessible, especially for those in remote areas with poor network coverage.



4. Sustainability

To ensure sustainability of the project gains, there is a need to integrate DATs into the routine management process of people with TB. Review of treatment adherence statistics should also be integrated into quarterly TB program review meetings to inform decision making by TB stakeholders.

Continue reading... 



Acknowledgements

KNCV Nigeria

Dr Bethrand Odume | Executive Director
 Chidubem Ogbudebe | Director of Strategic Information
 Iboro Gordon | Project Coordinator

National Tuberculosis, Leprosy and Buruli Ulcer Control Program

Dr Chukwuma Anyaike | National Coordinator
 Dr Obioma O. Akaniro | M&E Manager

USAID Mission, Nigeria

Dr Austin Ihesie | Senior TB Advisor
 Debby Nongo | Program Management Specialist, TB
 Dr Rupert Eneogu | Program Management Specialist, TB and HIV/AIDS-TB
 Omosalewa Oyelaran | Deputy Director, HIV/AIDS & TB

Disclaimer: The findings in this publication are those of the authors and do not necessarily represent the views of the U.S. Agency for International Development or the U.S. Government.

For more information on the introducing New Tools Project, visit:

<https://www.stoptb.org/accelerate-tb-innovations/introducing-new-tools-project>