99DOTS for tuberculosis treatment supervision in Uganda: Adherence rates and acceptability

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BACKGROUND

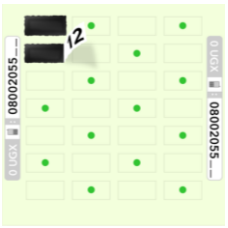
- Tuberculosis (TB) treatment completion rates are below WHO's 90% target
- Innovative technologies like 99DOTS are currently being tested as possible alternatives to directly observed therapy (DOT)
- We aimed to evaluate treatment adherence rates, benefits and challenges of using 99DOTS

ADAPTED 99DOTS PLATFORM

- Re-designed pill pack to reduce stigma, facilitate counseling, provide clear instructions
- Automated daily SMS dosing reminders
- Toll-free phone calls to self-report dosing
- Educational/motivational messages when calling to report dosing

Front of the envelope

Back of the envelope



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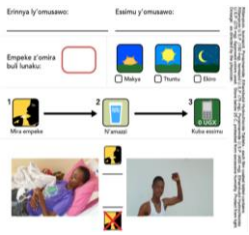

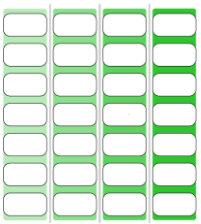

METHODS

Design:

- Stepped-wedge randomized trial design (November 2018-December 2019) at 18 health facilities in Uganda,

Data Collection:

- Review of routine NTLP notification data
- Medication adherence for all patients enrolled on 99DOTS were extracted from the 99DOTS system
- Surveys were conducted with a random sample of patients and providers to assess acceptability of implementing 99DOTS

RESULTS

Patient enrollment

- 1528 of 3738 (41%) patients initiating TB treatment during study period were enrolled on 99DOTS
- Half of patients not enrolled lacked access to a phone

Table 1. Patient treatment adherence

	n (%)
Total number patients enrolled on 99DOTS	1528
Total expected doses	229487
Total doses recorded by patient call	123063 (54)
Total doses recorded as taken (patient call and manual reporting)	211055 (92)
Patients with adherence > 50%	1452 (95)
Patients with adherence > 80%	1320 (86)
Patients with adherence > 90%	1160 (76)
Patients with 100% adherence	672 (44)

Patient survey findings (N=128)

- 112 (88%) reported reduced clinic visits
- 127 (99%) reported increased connection to their health care workers
- 108 (84%) were comfortable using 99DOTS from anywhere.
- 65 (51%) reported occasional difficulty in making calls to 99DOTS due to low battery or poor network.

Health care worker findings (N=24)

- 23 (96%) providers reported reduced workload
- 22 (92%) reported occasional difficulty in accessing the 99DOTS dashboard due to software malfunctions

CONCLUSIONS

- Patients using 99DOTS achieved high levels of adherence.
- Despite challenges of phone availability, poor network and software malfunctions, patients and providers found the technology acceptable and convenient.

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