

Implementation Bottlenecks of evriMED for Improving Adherence to Anti-Tuberculosis Drugs Among Tuberculosis Patients in Kilimanjaro

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Background: Digital Adherence tools (DATs), including real-time medication monitoring (RTMM) and Short Message Service (SMS) reminders, have been described to improve medication adherence among Tuberculosis patients. Several bottlenecks have been identified in implementing digital technologies, like inadequate network coverage, limited knowledge on digital tools, and unreliable electrical power in limited-resource settings. The objective is to address implementation bottlenecks of RTMM using EvriMED for reminder cues and tailored feedback on adherence to anti-tuberculosis treatment.

Methods: We conducted a pragmatic randomized controlled trial (RCT) among Tuberculosis patients living in the Kilimanjaro region. In the intervention arm, patients used evriMED and received SMS reminders for medication intakes, while in the control arm, patients were exposed to standard care only. We assessed technical bottlenecks of implementing evriMED by measuring the number of SMS reminders scheduled and sent, device activity status (i.e., Battery), and integration of international SIM cards, and accessibility of real-time adherence report by DoT nurses.

Result: Currently, 445 participants have been enrolled, 266 in the intervention arm and 179 in the control arm. A total of 99601 SMS reminders were scheduled to be sent, and 49603 (50%) were actually sent. For Airtel it was 76%, (62%) TTCL, (60%) Vodacom, (53%) Halotel, (14%) Tigo and (1%) Zantel. Out of 266 devices distributed, 24 (9%) recorded critical battery low, which leads to loss of data. Other bottlenecks that were reported; DOT nurses experienced difficulties in accessing online adherence reports due to limited knowledge of DAT; Unreliable electricity in rural areas.

Conclusion: Despite preliminary results indicating that the EvriMED device has several technical bottlenecks, this data provides insight for future studies aiming to improve digital adherence interventions. We believe we will be able to address alternative strategies to overcome bottlenecks.

