

PARTNER

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STUDY TYPE

Prospective pilot cohort, decentralized continuous cough monitoring, nested in the R2D2 TB Network

THERAPEUTIC AREA

Tuberculosis / respiratory infectious disease

SETTING

Primary care centers, Kampala, Uganda

KEY OUTCOME

In a decentralized TB pilot in Kampala, Hyfe's CoughMonitor Suite captured continuous, objective cough data on standalone wrist-worn watches, with no study phone or mobile network required during each monitoring window, at a fraction of the setup and staff burden of the team's other digital health tools.

CHALLENGE**462****TOTAL MONITORING
DAYS CAPTURED****40****PARTICIPANTS
MONITORED****112 498****TOTAL COUGHS
CAPTURED**

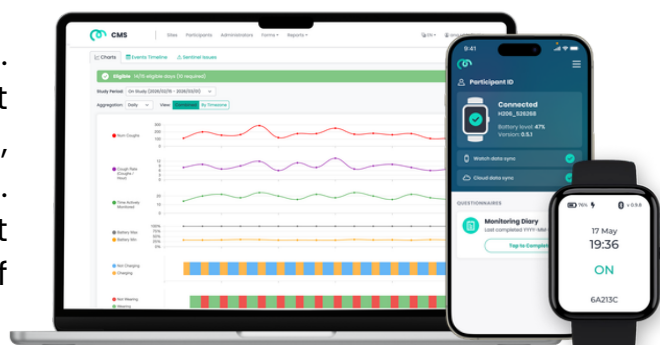
The team needed objective cough data

from people beginning TB treatment, captured at two short windows: at treatment initiation and again around day 30. The work had to run in real-world primary care in Kampala, not a controlled clinic, and it had to fit alongside the demands of a busy research program.

The central question for this pilot was practical rather than scientific. The team had used a range of digital health tools for research data collection, and wanted to see how the new wrist-worn cough watches would fare in their setting. Specifically: could the watches capture high-quality data on their own, with no connection to a mobile network or a paired phone, across each three-day observation window?

SOLUTION

Hyfe deployed the CoughMonitor Suite. Participants wore the watch continuously for at least three days at each of two timepoints, treatment initiation and approximately day 30. The watch passively detects sounds consistent with cough and records only the timestamp of each event, so no audio leaves the device.



The distinctive part was how little the deployment needed to work. The watches were sent out on participants and ran standalone for the full observation window, with no paired study phone and no mobile-network connection required during monitoring, then returned for the team to extract data. That removed the phones, chargers, and hands-on staff time that the team's other tools depended on.

Hyfe supported the deployment with training sessions and SOPs, and stayed responsive through the study: when participants said they wanted the watch to display the time so they would not have to wear a second watch, Hyfe pushed that software update within a week. The team used the CoughMonitor Suite dashboard to check data quality and wear time, confirm successful data transfer, and monitor collection across all of their sites.

RESULTS

Metric	Result
Participants with cough data	40
Monitoring windows per participant	2 (treatment initiation and ~day 30)
Minimum continuous wear per window	3 days
Total monitoring days captured	462
Total coughs captured	112498
Successful data transfer / data quality	All watches synced and no recording sessions were lost

The TB field is often slow to benefit from technological advances, but mobile health tools, like continuous cough monitoring, are an exciting avenue to make TB care more responsive and less burdensome on people with TB.

— Study Investigator, UCSF

OPERATIONAL SNAPSHOT

MONITORING

At least 3 continuous days at each of two timepoints

DESIGN

Prospective pilot cohort, continuous cough monitoring at treatment initiation and ~day 30

PARALLEL MEASURE

EQ-5D health-related quality of life

SITES

Primary care centers, Kampala, Uganda

TECHNOLOGY

Hyfe's CoughMonitor Suite. Dashboard used for data quality, wear time, and data-transfer confirmation, accessible across all sites.

POPULATION

Ambulatory adults with microbiologically confirmed TB, willing to wear a cough-monitoring smartwatch

WHAT THIS MEANS FOR YOUR STUDY

For sponsors and CROs running decentralized or multi-site respiratory studies, this pilot shows that objective cough monitoring can be stood up in real-world, low-resource settings with minimal infrastructure and staff time.

Because the watches run standalone, with no paired phone or network dependency during monitoring, the deployment carried low operational overhead and, in the team's experience, a very low participant refusal rate, making it feasible to monitor larger numbers of participants at once.

Objective, quantitative cough data sits alongside patient-reported outcomes to give a fuller picture of participant health, and the possibility of real-time data syncing opens the door to future study designs that use cough data for real-time, adaptive decision-making.

