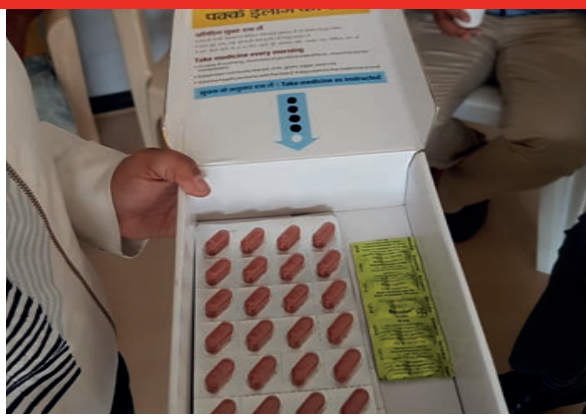




The ASCENT project helps patients adhere to their medicines by using digital technologies such as smart pill boxes or special sleeves with TB medication.

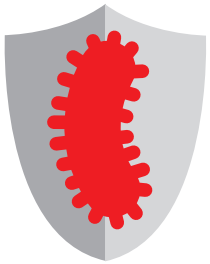
ASCENT: EMPOWERING PATIENTS THROUGH DIGITAL ADHERENCE TECHNOLOGY

The Unitaid-funded ASCENT project aims to help patients succeed in TB treatment using digital adherence technology, towards reducing TB incidence, mortality and financial consequences.

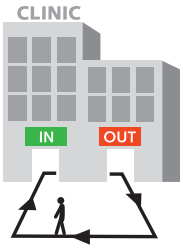
Tuberculosis (TB) is the deadliest infectious disease worldwide, killing over 4.000 people every day. This is unnecessary as TB can be cured using the appropriate medication. One of the difficulties in curing TB is the long treatment. Patients have to take medicines anywhere from six months to two years. After a few months of treatment, many patients feel better and stop taking their medicine. As a result, the illness returns, and the bacteria gets an opportunity to develop resistance to the tuberculosis drugs. With the use of digital adherence technologies (DATs) - smart pill boxes and mobile technology - ASCENT aims to help patients adhere to their medicines and raise the world's plateauing cure rates for TB.

Missing doses of medication during tuberculosis treatment has serious negative effects

Patients are more likely to stop their TB treatment



Patients can develop resistance to anti TB drugs



Patients are more likely to get TB again

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Adherence Support Coalition to End TB

The ASCENT project (July 2019 – Dec 2022) will build on existing evidence, innovations and growing global momentum to implement and evaluate three types of digital adherence technologies in five key countries for all types of TB, reaching a total of 70.000 patients.

The ASCENT project focuses on:

A. Facilitating country adoption and uptake of digital adherence technologies
B. Generating crucial evidence for optimal use and scale up
C. Creating a global market and implementation plan for digital adherence technologies

1: Ukraine, 2: Ethiopia, 3: Tanzania, 4: South Africa, 5: the Philippines

Rethinking optimal care for TB patients

Historically, the most widely-implemented means of supporting TB patients on treatment is Directly Observed Treatment (DOT) where a health care worker watches the medication being taken, either at a health care facility or at a patient's home. The DOT approach has advanced global decline in TB incidence. However, innovations are needed to improve patient-centered care, enable a more efficient health care system and empower patients and health care workers so that a greater impact in curing and preventing all types of TB can be achieved.

Patient challenges with the current DOT approach:

Daily (or weekly) transport to clinic leads to high costs & logistic issues

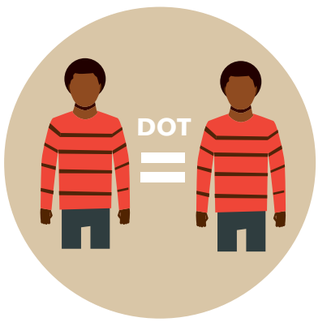
Loss of income due to missing work for daily (or weekly) clinic visits

Visiting a TB facility can increase stigma against a patient

Provider challenges with the current DOT approach:

Heavy workload for the health care worker (HCW) who has to directly observe so many patients

Heavy workload for HCW in case of house visits to observe patients at home



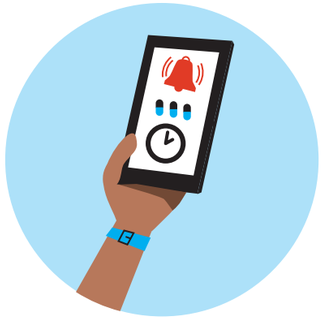
DOTS: Not all patients require the same level of monitoring and support

Treatment at a suitable time and place

By taking advantage of today's powerful communication tools, there is an opportunity to support TB patients with their treatment in a different way. DATs make it possible that patients take their treatment at a time and place that is suitable for them, instead of daily visits to a health care facility or from a health care worker. This gives patients greater freedom to self-manage and participate in their own care, guarding their autonomy and dignity. The use of DATs can also reduce financial burdens, for patients can more easily combine their treatment with work (if their health allows).

Patient benefits of DATs for example:

With DAT, a patient can decide where to take their medication (e.g. at home/ work/while travelling)

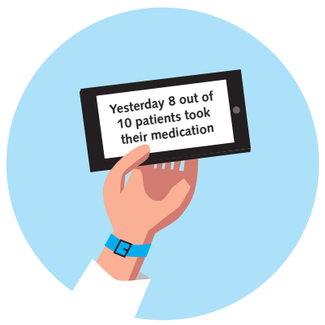


Patient can be prompted by text message (SMS) to take a certain action (e.g. take their medication/ doctor appointment)

Patient receives individualized information about their treatment via text messages (SMS) or voice recordings on their mobile phones

Provider benefits of DATs for example:

With the app, healthcare workers have access to real-time adherence information per patient

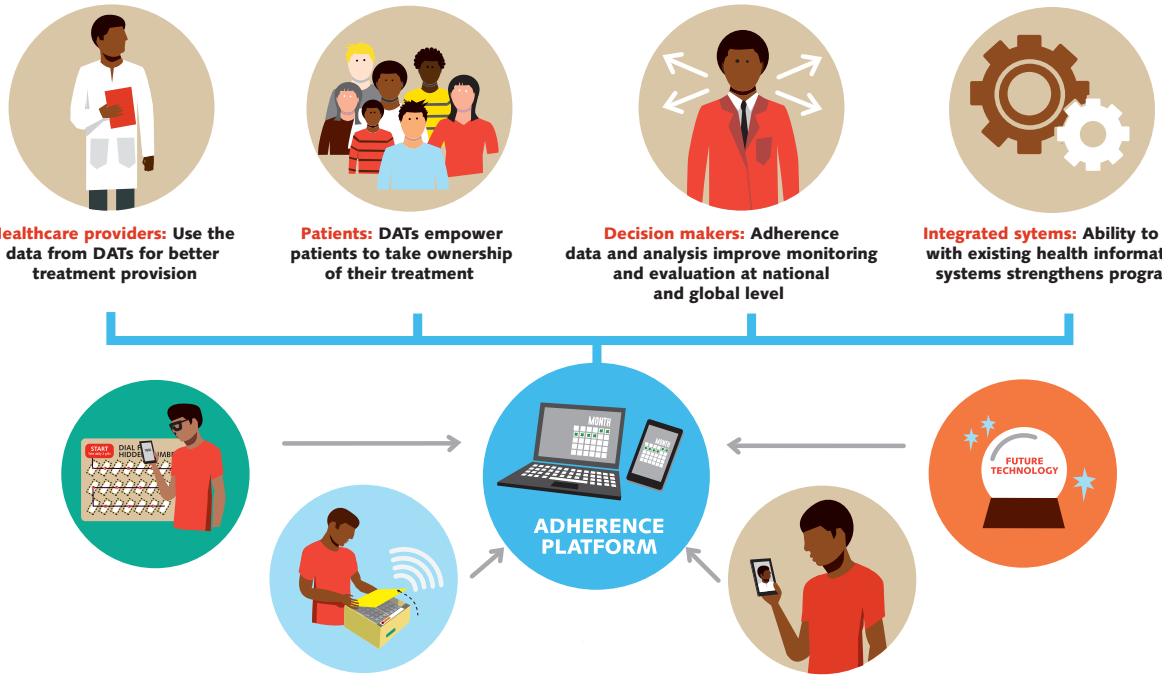


The adherence platform can send healthcare workers automated alerts and reports about their patients, prompting action

Machine algorithms on the adherence platform help to automatically identify which patients need more attention/support

DATs can also empower health care workers by providing accurate and timely information to help determine the most appropriate treatment support approach for each patient. The use of an integrated platform of mobile phone, computer, and electronic sensor technology will enable both improved individual outcomes and greater impact of TB treatment approaches worldwide. The implementation of DATs therefore has the potential to be a major step forward in the fight against TB.

The adherence platform



Digital adherence technologies

The ASCENT project will implement and evaluate three different types of digital adherence technologies that will be available in the participating health care facilities at no additional costs to the patient. Digital adherence technologies linked to an integrated adherence platform can ultimately benefit patients, health care providers and decision makers in the fight against TB. The use of the specific technology will be explained and guided by the health care worker.

1: Medication Sleeve

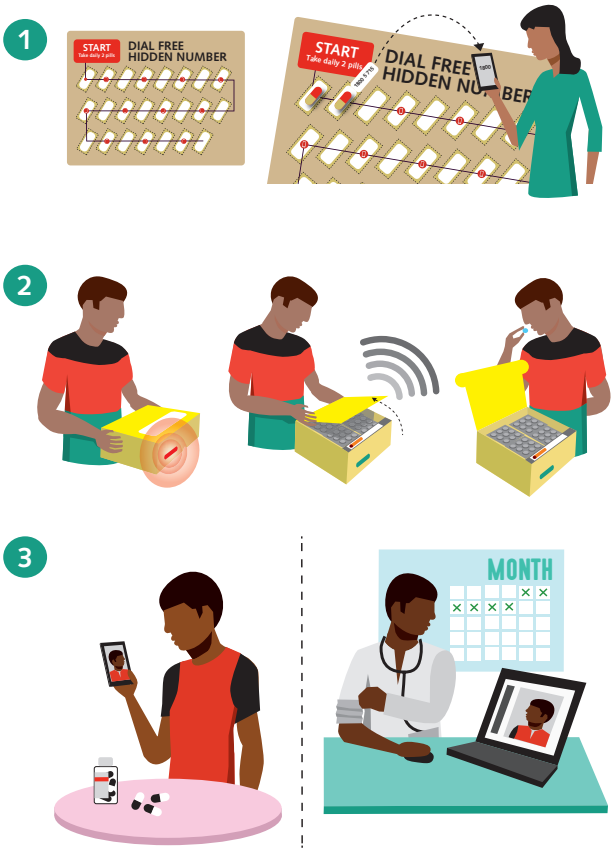
The patient receives their TB medication sleeved in a customized envelope. When the patient pushes out their pills from the blister pack, a hidden number is revealed whereby they are instructed to make a toll-free call (or text) to that number to automatically log their daily dose.

2: Smart Pill Box

The patient is provided with a specially-designed box to store their TB medication. Every time the patient opens the box, the embedded device sends a signal and automatically notifies the health care worker of the logged daily dose.

3: Video Supported Treatment

During medication intake, the patient records a video message using a customized app on their mobile phone. After completion, the video is sent to the health care worker for review.



Consortium partners

With its strong consortium of partners (KNCV Tuberculosis Foundation, The Aurum Institute, London School of Hygiene & Tropical Medicine and PATH) and partnership with the governments of the implementing countries, the ASCENT project will the ASCENT project will contribute to the adoption and uptake of digital adherence technologies. By providing operational guidance, critical evidence generation and improved market mechanisms the ASCENT project works towards the ultimate goal of reducing incidence, mortality and financial consequences from TB. The ASCENT project is made possible thanks to Unitaid's funding and support.

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