The Global DAT Task Force

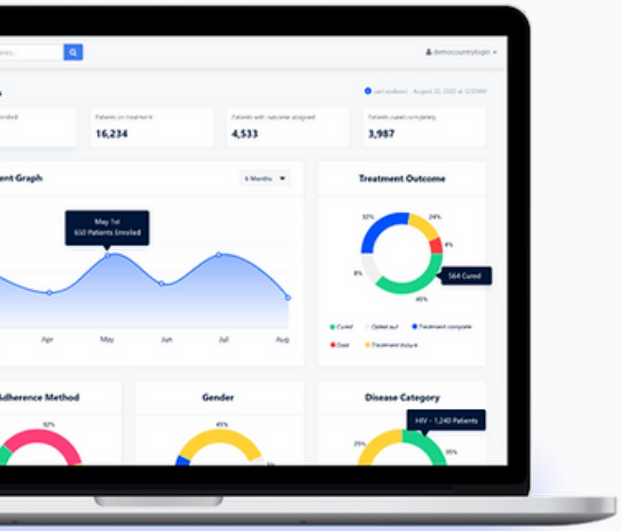
tbdigitaladherence.org

SELECTING AN ADHERENCE PLATFORM TO SUPPORT A DIGITAL ADHERENCE TECHNOLOGY INTERVENTION

TB DIGITAL ADHERENCE

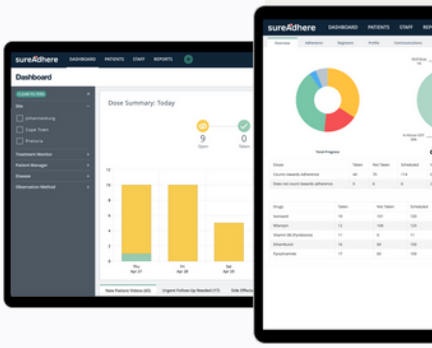
2024

ABOUT THIS RESOURCE



As countries aspire to #EndTB and recognize the power of digital adherence solutions to support their local strategies, the need for a resource on **Key considerations on selecting and planning for adherence platforms** becomes necessary. Adherence Platforms offer a supportive approach, identifying non-adherence patterns among People with tuberculosis (PwTB) and enabling tailored support.

This resource emphasizes key considerations in selecting these platforms, addressing factors such as digital readiness, interoperability, costs, and minimum requirements tailored to country contexts. Collaboration, adaptability, and strategic planning emerge as vital elements for success in implementing Digital Adherence solutions. As countries plan to uptake digital adherence solutions, the *Global DAT Task Force* stands ready to provide Technical Assistance.



OBJECTIVES

1. Emphasize key factors to consider when planning and selecting a Digital Adherence Platform.
2. Share the experiences gained from countries that have implemented Digital Adherence Platforms within their National TB Program (NTP) strategy.
3. Support the identification of challenges and steps to achieve a successful Digital Adherence Platform adoption.
4. Updating stakeholders on the integration of various Digital Adherence Platform solutions supporting Digital Adherence interventions.

FROM D.A.T. TO DATA

Digital Adherence Technology (DAT)

In simple terms, Digital Adherence Technologies (DATs) are tools generated to provide daily support for individuals in the continuation of their treatments through the use of:

- mobile phones, and/or
- electronic sensor technology.

The input generated from these tools is sent automatically to an adherence platform.

Digital Adherence Platform

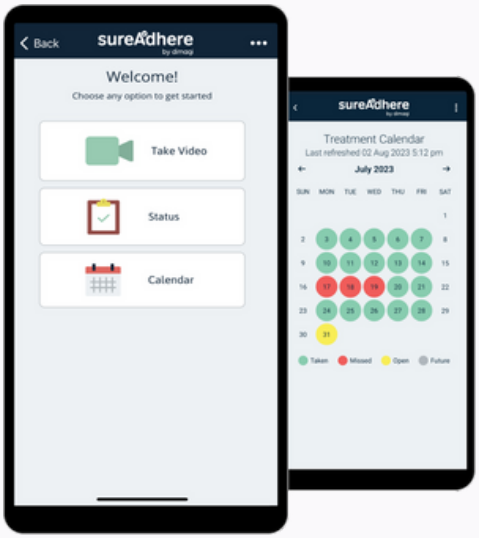
A digital adherence platform is a comprehensive technology solution designed to monitor and enhance a person's adherence behavior to prescribed medication regimens through the digital tools and interventions mentioned above.

More on Digital Adherence Platforms, features and market availability is detailed in the following sections.

Data

The utilization of adherence data at the local level (healthcare worker/health facility) can be instrumental in designing personalized treatment approaches for individuals. Meanwhile, the availability of this data on a national scale presents chances for informed and strategic decision-making regarding future priorities.

ADHERENCE PLATFORMS: THINKING AHEAD



There are many reasons why countries may consider implementing DAT as a method for achieving treatment adherence goals. However, it is important to note that DATs only offer a benefit if they are accompanied by an adherence and hosting platform. It is recommended that platform procurement processes are established early in planning for the DAT intervention to ensure:

01

Accurate costing projections for budgeting purposes.

02

Adequate time to set up the necessary background infrastructure to support the implementation process.

03

The ability to customize the platform to meet the specific contextual needs of the project or NTP local strategy.

KEY CONSIDERATIONS FOR SELECTING AN ADHERENCE PLATFORM

01

Digital preparedness

Assessment of a country's digital readiness and the state of its healthcare system's digital infrastructure.

02

Costs

Comparing adaptation costs to development costs.

03

Avoid silos

Assessment of interoperability, integration, and enhancement.

04

Minimum requirements

Minimum requirements for an adherence platform based on the country's context.

05

Shared knowledge

Gaining insights from international networks with comparable settings.

01 DIGITAL PREPAREDNESS

Similarly to the scrutiny applied for the adherence technology itself, the following domains require evaluation prior to selecting a Digital Adherence platform: **a. the technological infrastructure**, encompassing country-wide, health facility technology and technology for PwTB; and **b. the intervention support structure**, comprising healthcare providers supporting the DAT intervention.

An adherence platform can be integrated with existing digital solutions in a country, either by leveraging it into an established platform or enhancing an existing digital solution, such as DHIS2.

THE TECHNOLOGICAL INFRASTRUCTURE

A thorough examination of the market and technology environment, coupled with regulatory considerations, is essential for crafting a platform that aligns with existing frameworks. Delving into the policies and regulations further refines the initiative planning, ensuring compliance and adaptability to the governing structures.

Furthermore, exploring active donors, implementers, and ongoing digital development initiatives within the implementation site is indispensable. The data collected through engagement with those experienced in the context, and primary research or consultation of published research, is cornerstone in this process and significantly contributes to well-informed decision-making.

Additionally, identifying other organizations, innovations, and donors operating in the same ecosystem is crucial to **avoiding redundancy and fostering collaboration**.

Reflecting on Tanzania experience, the use of a global hosting platform (Everwell Hub) as part of a large scale research study on the use of DATs (ASCENT), served as a learning experience for continued implementations of DATs globally, and the development of an adherence module for DHIS2.

Other key aspects to consider are: internet access for health facilities and PwTB, availability of communication devices (i.e. cellphones), access to airtime and cellphone signal, and the provision of a consistent electricity supply to both the health facility and PwTB.

These considerations are fundamental in determining the feasibility and effectiveness of implementing a digital adherence solution in the context of the existing technological landscape.

01 DIGITAL PREPAREDNESS

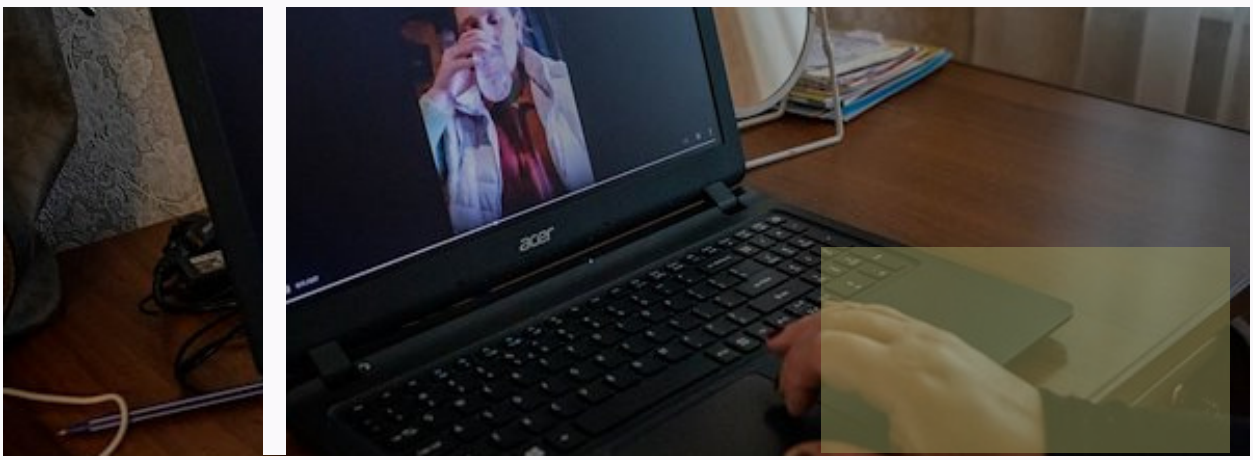
THE INTERVENTION SUPPORT STRUCTURE

This assessment involves critical aspects, such as the availability of time for supporting the rollout of the DAT and the uptake of an adherence platform, the healthcare provider's familiarity with technological interventions, the time availability for engaging with treatment adherence data, and the capacity for follow-up actions with DAT users triggered by their adherence behavior.

For these considerations and aligned with the previous assessment, it is required to **minimize potential burdens on healthcare providers** by adding an extra step to their daily workflow. This might include the time allocation for training providers and allow for familiarization with the platform's interface. The adherence platform should be seamlessly incorporated in their daily tasks, and provide access to technical support as soon as it is required.

Depending on the administrative layout of the healthcare system, specifically the TB care cascade provision, it is essential to **consider other key players** in this assessment: **community health workers, community volunteers and leaders, etc.**

These considerations play a crucial role in gauging the practicality and success when selecting a digital adherence platform, emphasizing the **need for adequate time and technological proficiency among healthcare providers**.



02 COSTS

While budgeting for a DAT intervention, attention must be placed on the Digital Adherence platform to be used. These cost considerations should be included into the two main groups detailed for DATs:

- Capital expenditure (CAPEX) representing one-time costs related to adopting the adherence platform.
- Operating expenditure (OPEX) includes ongoing costs for utilizing the adherence platform within a current TB program.

Among the first, there is a need to evaluate platforms and products pricing, equipment that needs to be shipped and distributed, installation and trainings, and the cost of the infrastructure itself. In this phase, it is crucial to **determine the available options in both the global and local markets**.

For operational costs, it is necessary to consider technical assistance, labor, replacements and other maintenance requirements throughout the period in which the platform will be running.

The cost considerations for these activities may vary per country and project setting, and will depend largely on the DAT to implement, and will need to be assessed further within the setting of implementation.

ADJUSTED COST AT SCALE

It is crucial to take into account the target population for the DAT intervention, as it dictates the server and hosting specifications, and potential cost savings when catering to a significant user base.

For instance, in the implementation of the adherence platform, the cost remains consistent regardless of whether one user or a thousand users are registered. The project becomes increasingly cost-effective with a higher number of enrolled users, allowing for the distribution of costs among a larger user base.

Nevertheless, as the number of DAT users escalates, certain infrastructure expenses also rise. These may include heightened costs associated with expanding server capacity and bandwidth to ensure seamless access to the adherence platform.

Based on the needs of the TB program, the existing digital ecosystem and the resources available, there are a number of platform options available in the market, such as **SureAdhere, Wisepill, Everwell, I-Like-VST, Adhere2TX-TB, ZMQ, and smart pill box API Integrations**. For the assessment of suitability of the different platforms available to support the DAT intervention, the *Global DAT Task Force* provides Technical Assistance, and can be requested by reaching out to us.

Make sure to check out additional resources on finance assistance and budgeting at www.tbdigitaladherence.org/resources/resources-funding-budgeting/. It is imperative to obtain a detailed quotation tailored to the infrastructure needs of your TB program to establish a precise budget. Reach out to secretariat@tbdigitaladherence.org for support.

03 AVOID SILOS

In the strategic planning of a digital adherence platform supporting a DAT intervention for TB programs, a crucial consideration involves **mitigating silos to ensure seamless integration with existing digital solutions within the region**. For this approach, it is imperative that the chosen adherence platform is designed with interoperability in mind. This aligns with the concepts framed in previous sections, through the use of a comprehensive assessment of the digital landscape to identify and understand the various digital solutions currently in use across the local healthcare system.

By fostering interoperability, the adherence platform can facilitate **data exchange** and **collaboration** with other digital tools, thereby avoiding the creation of isolated silos of information and duplicate efforts.

Country highlights

In the context of Tanzania, where the NTP spearheaded digital adherence solutions implementation, collaboration and integration have been essential. The NTP, being the lead in the process, required that the adherence platform is not an isolated platform but is directly integrated into the existing platform (DHIS2) used at facility level. This involved the integration of the adherence platform into an already established digital solution or enhancement of an existing platform to incorporate the adherence module seamlessly.

The collaborative effort extends beyond TB-specific interventions, with the adherence platform accommodating modules for both TB and Tuberculosis Preventive Treatment (TPT). This comprehensive approach, managed

What is a “silo”?

In the context of digital health and healthcare systems, a "silo" refers to the isolated and disconnected storage or management of information within distinct, non-communicating systems or components. When planning for a Digital Adherence platform in the context of TB programs, the term "silo" implies the risk of developing or implementing digital solutions that operate in isolation, without seamless integration with existing digital tools or platforms within the healthcare infrastructure of a country or region.

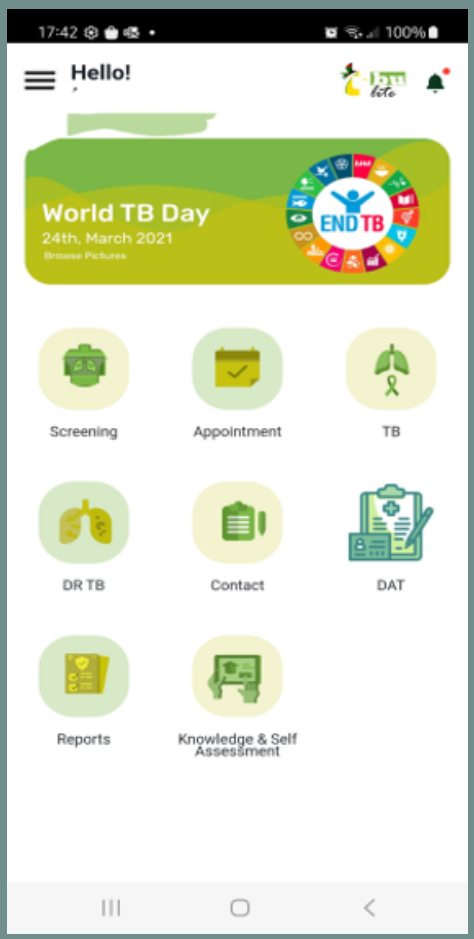
03 AVOID SILOS

within the Ministry of Health (MOH), ensures that the digital intervention aligns with broader healthcare management strategies, preventing the formation of silos and promoting a unified, interoperable digital health ecosystem.

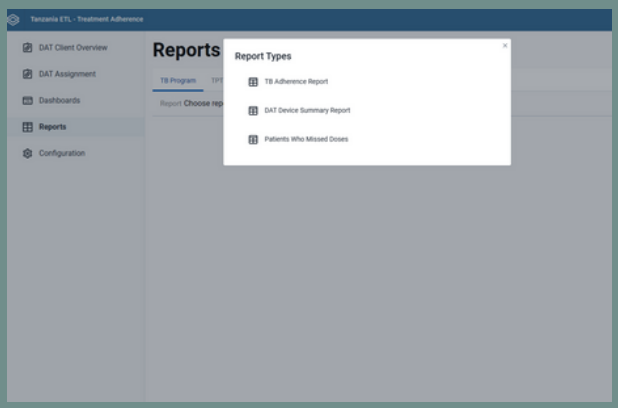
In Kenya, a comparable situation is observed where the country embraced a domestic solution known as **t-bu lite**, seamlessly integrated into the national TB surveillance system known as TIBU.

To enhance this system, a technology provider was commissioned to create **t-bu DAT**, a platform that incorporates various functionalities enabling the amalgamation of different components within the TB care continuum, including enrollment, appointments, DAT, adherence reporting, and more.

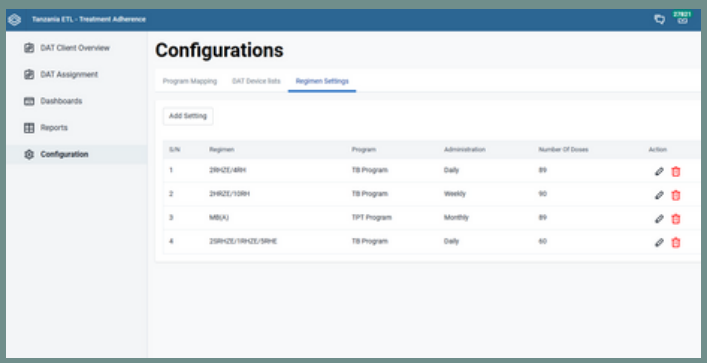
For both examples, **stakeholder engagement has been cornerstone in designing, implementing and sustaining DAT interventions**.



t-bu lite features.
(Adherence platform - Kenya)



Adherence module integrated within DHIS2
(Adherence platform - Tanzania)



04 MINIMUM REQUIREMENTS

Various adherence platform solutions exist, each tailored to meet the specific requirements and contexts of different countries. When assessing an adherence platform, several essential features demand consideration:

Firstly, the platform should provide **accessibility** through either a mobile application (compatible with different operative systems) or via a web browser interface. This ensures widespread availability and ease of utilization for users at the healthcare provider level. Secondly, **efficient data collection** and organization from DATs are crucial. The platform should facilitate the seamless integration of adherence information gathered from various DATs.

Furthermore, automated SMS reminders for both PwTB and healthcare providers enhance the communication and adherence monitoring process, and can be considered as a minimum requirement. **Registration field functionalities** should be robust, and have a logical workflow to align with healthcare providers workflow, allowing for comprehensive and accurate DAT user data input.

The platform should also offer features such as an overview of DAT users categorized by facility, region, or country, **task lists** to prompt healthcare providers based on adherence patterns, and the option to host the adherence platform globally (**cloud hosting**) or on a **local server**.

Additionally, the ability to exchange information with other in-country information systems, like DHIS2, and the capability for **custom report generation** contribute to the platform's effectiveness in supporting TB care and other healthcare adherence initiatives.

IMPLEMENTATION REQUIREMENTS

The adherence platform requires a **server infrastructure**, which can either be cloud-based or implemented through in-country servers. This server configuration is key for hosting and sustaining the adherence platform, demanding rigorous maintenance to ensure seamless functionality.

Healthcare providers are granted **accessibility to the adherence platform** through diverse devices, including smartphones, tablets, or laptops. The platform is structured to be accessible online, enabling healthcare professionals to engage with it conveniently, fostering efficient and flexible utilization across various devices.

The adherence platform is equipped with mechanisms that facilitate **targeted follow-up actions** and support initiatives by healthcare providers and other pertinent staff members. These actions are established on the adherence data captured by the platform, allowing for **strategic and tailored interventions** to enhance adherence to prescribed regimens. This feature underscores the platform's utility as a dynamic tool for personalized healthcare management and intervention strategies.

05 SHARED KNOWLEDGE

A pivotal consideration when selecting an adherence platform is **drawing insights from the global community and similar implementing regions**. This entails leveraging shared knowledge and learning experiences to inform the design and implementation of the adherence platform, as well as the monitoring phases and evaluation of success elements within the project.

A pertinent example illustrating the importance of **cross-regional learning** is the **ASCENT project**, a randomized pragmatic trial conducted concurrently in five countries with distinct healthcare systems, settings, and digital ecosystems. The project, focused on testing the effectiveness of DAT in relation to TB treatment outcomes, yielded multifaceted insights.

Ongoing results dissemination from the study highlights the significance of understanding the cost implications of hosting an adherence platform parallel to existing systems. The lesson gleaned for one of the implementing countries, Tanzania, was that such an approach could pose financial challenges, potentially hindering government scalability and takeover of the DAT post-ASCENT project phase-out.

Furthermore, implementation research projects underscore opportunities for improvement, particularly in the utilization of the different DATs. These insights contribute to refining strategies for tailoring adherence platforms to different user groups.

Participating in collaborative spaces, such as the **Global DAT Task Force Learning Hub**, proves invaluable in gaining a comprehensive understanding of best practices and challenges encountered by diverse regions in deploying DATs.

Noteworthy advancements in Kenya's DAT implementation, coupled with a phased approach and continuous learning, serve as an encouraging model. This iterative process not only facilitates the introduction of DATs but also allows for the **assimilation of lessons learned**, fostering ongoing **optimization and adaptability** in the deployment of DAT interventions.

Participating in and facilitating cross-country discussions and knowledge sharing environments, such as *The Union World Conference on Lung Health*, enables exchanging experiences and connecting individuals and organizations essential in the TB care cascade, promoting collaboration and building of expertise across different regions.

About The Global DAT Task Force

As a broad group of global partners and stakeholders from multiple organizations, we share the common goal of seeing a world where tuberculosis (TB) is no longer prevalent.

Our approach is to contribute to the further evaluation of Digital Adherence Technologies (DATs) as a tool to support TB treatment, optimal introduction and scale-up of DATs in the context of people-centered treatment and care modalities, and the further innovation of DATs and supporting and enabling tools, processes, and systems.

While continuing the evaluation and research of DATs in practice, we offer technical support for optimal introduction and scale-up of DATs for National TB Programs (NTPs).

The Global DAT Task Force
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Acknowledgements

The *Global DAT Task Force* reflects the collaboration of a broad group of global partners and stakeholders that share the common goal of seeing a world where TB is no longer prevalent: KNCV TB Plus, Stop TB Partnership, World Health Organization, Bill and Melinda Gates Foundation, Tufts University - School of Medicine, London School of Hygiene and Tropical Medicine, McGill University, The Global Fund, Unitaid, PATH, Everwell and the Association for Social Development - Pakistan.

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The *Global DAT Task Force* is fully funded to provide technical assistance to countries in their DAT planning, roll-out and scale up. Contact us for technical assistance via the details below:

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www.tbdigitaladherence.org