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Introduction

Tuberculosis (TB) control is well standardized through, for example, World Health Organization (WHO) forms, guidelines, and recommendations, but managing information for adequate TB program support usually requires a challenging and complex integration of systems with separate modules developed and managed in separate sectors.

The e-TB Manager software is a comprehensive tool for programmatic management of TB and DR-TB cases and medicines. It is designed to integrate in one place cases, medicines, and other TB commodities for NTP management purposes at different levels. The system provides key information consolidated online at any level for rapid decision making and epidemiological surveillance where interventions are needed.

The emergence of drug-resistant TB, including multidrug-resistant TB (MDR–TB) and extensively drug-resistant TB (XDR-TB), has created significant health problem in many countries, increasing the need for close monitoring and tools that can control the amplitude of TB and support an uninterrupted supply of medicines. The team approach to case management and appropriate surveillance systems is necessary to successfully address these issues.

The e-TB Manager offers great potential for significantly improving the management of TB and DR-TB cases, first- and second-line medicines, and commodities used for treatment. It is also a useful tool for TB and DR-TB surveillance and control. It can be used as a Web-based data information system integrating the central unit for TB and DR-TB surveillance with periphery treatment units. Version 3 of the program can also be used offline as a desktop version that will be able to synchronize data with a central site if an Internet connection is available.

The tuberculosis team would use the e-TB Manager tool according to TB unit procedures and approved national guidelines. The data captured and reports generated by the tool can be summarized as follows:

- **Treatment and case management:** The e-TB Manager uses online notification and follow-up, records clinical and laboratory results, tracks patients transferring in and out, and provides data for treatment adherence and patient contacts evaluation. The *Cases* module of e-TB Manager, for example, allows NTP staff to closely monitor first-line TB or DR-TB case evolution from a status of TB suspect to a notified case until the final result of treatment.

- **Information and surveillance management:** The e-TB Manager maps TB and MDR/XDR cases, epidemiological indicators, resistance panels, co-morbidities, previous treatment history, and treatment cohort results, providing surveillance reports and updated information with ready access online at central and peripheral levels.

- **Operational and clinical research:** The tool provides easy methods for analyzing collected data and exporting data to other statistical programs.

- **Stock management:** A stock management module is in development.
What Is e-TB Manager?

The e-TB Manager is—

- A tool for online notification, case treatment, monitoring, follow-up, and patient transfers in and out of TB units
- A system that allows for recording of clinical and laboratory results and provides data for treatment adherence and patient contact evaluation
- A tool for monitoring medicine safety and efficacy at the patient level by tracking side effects of TB medicines reported and providing data on treatment outcomes
- A tool that provides monitoring and evaluation (M&E) of medicine stock levels at any health facility and by each supply source
- A database from which reports can be produced that can have an impact on future policy and NTP strategies and decisions

Who Will Benefit from e-TB Manager?

All facilities, staffs, and programs involved in TB and DR-TB case management and first- and second-line TB medicine management may benefit from the new e-TB Manager, including:

- TB physicians
- Pharmacies
- Pharmaceutical warehouses
- DR-TB centers or TB hospitals
- TB coordinators from the district level
- NTP coordinator
- Ministry of Health
- National Health Insurance Plans
- Donors and partners such as WHO/GLC and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)

What are e-TB Manager's Technical Characteristics?

e-TB Manager is a computer application that can be used either online via the Internet, on a local area network, or on a standalone computer. It can be used at all levels by designated facilities, such as the central warehouse, TB and DR-TB reference centers, or pharmacies and by TB physicians and health centers in charge of authorizing and validating medicine orders.
Every user has access to the system depending on his or her level of participation in medicine management.

To use the application, the user must be equipped with:

- A computer (with Internet capabilities if e-TB Manager is to be synchronized with other computers in the country)
- A network connection to the system (Internet access is required only if the system is based on an Internet server)
- An HTML browser (e.g., Google Chrome, Internet Explorer, or Mozilla FireFox)

The instructions and figures in this Quick Start Guide refer to both the web-based version of e-TB Manager and the desktop version. This Guide is meant to give a quick overview of the software and is not intended to cover all of the requirements for installing, configuring, and using the system. If you are interested in more information or technical assistance on e-TB Manager, please contact us at siaps@msh.org.
Viewing or Installing e-TB Manager

You can review the web version of e-TB Manager and explore the software by visiting www.etbmanager.org. Click the Try It! button to see the online version’s features with sample data. You will need to register on the site to be able to access the software.

![Try e-TB Manager!](image1)

Figure 1

This site also contains a file you can download to install on your own computer to use offline. Click the Download for Windows button to get the file. This version doesn’t contain all functions and is meant to let you experiment with QuanTB.

![Free downloadable version](image2)

Figure 2

After you have downloaded the etbm-desktop.exe file, double-click it to start the installation process. The installation will take a few seconds to begin.
You can choose English, Portuguese, or Russian as your language.

The next step is to create a workspace. This represents your data’s institution, so it could be a country, a hospital, etc. You also enter a name and password for the administrator of the
software. Tick the box in the lower left corner of the screen to include demonstration data in your installation. When you’re finished entering information, click **Create**.

![Figure 5](image)

The installation will finish and display a screen to confirm the workspace creation. Click the **Goto Login Page** button to continue.

![Figure 6](image)
Enter the name and password you created, and then click **Enter** to start the program.

Figure 7
Configuring e-TB Manager

Your initial login for the program has administrator privileges, which means you can access parts of the software that a normal user cannot. This is to allow you to see how e-TB Manager can be configured. Throughout the software, required fields are marked with 🔄.

Click on the Administration link in the menu bar to open the list of options: Tables, Reports, and Settings.

![Administration - Tables](image)

**Figure 8**

### Tables

Click the Tables menu option to see a list of the tables in which you can enter information specific to your setting. These tables are Administrative units, TB units & laboratories, Medicine sources, Medicine generic names, Products & Medicines, Treatment regimens, Case tags, Age ranges, Users, and User’s profiles. A few sample tables are show below.

The **Products & Medicines** screen is for customizing your list of medicines. Enter information about your medicine or product, and then click **Save** or **Cancel** to finish. If you want to enter information on another medicine, click the **ADD** button.
The **Treatment regimens** table is shown below. You can enter multiple treatment regimens by clicking the **ADD** button.

![Figure 9](image)

The **Case tags** table allows you to enter “tags” to attach to your cases. These are various categories or descriptions that you want to assign to cases in order to easily group or find or report on cases with the same tag. These are optional. Some examples are shown below.

![Figure 10](image)
Figure 11

Figure 12
If you installed e-TB Manager with sample data it is not necessary to enter additional information in these tables to experiment with the program.

**Reports**

The Reports option in the Administrator menu is where you find reports on the use of the software, such as user session histories. It does not contain reports on your case data.

**Settings**

The Settings option in the Administrator menu allows you to add and delete workspaces.
Using e-TB Manager

After the software is configured, the primary work in e-TB manager takes place in the General and Cases screens.

General
The General screen shows a Dashboard that can be customized to display selected data. Two examples of Dashboard graphs are shown below.

![Dashboard Graph](image)

**Figure 13**
On the **General** screen, select one of the TB units that has patients to be able to access case information or notify cases.

![Figure 14](image-url)
Cases

If you have selected a TB unit that has patients, clicking the Cases link takes you to a screen with three “tabs” showing the Presumptive cases, TB cases, and DR-TB cases, if you have all three of those types entered. Click the appropriate option on the left side of the screen to Notify case if the patient has been confirmed to have TB, DR-TB, or NTM. Click Notify presumptive if the patient is presumed to be a TB, DR-TB, or NTM case.

![Figure 15](image1)

Case search

Before you can enter a new case in e-TB Manager, you must search the database to ensure that the case is not already in the system.

![Figure 16](image2)
If you do not find your patient when you search, click the **New Patient** button that appears on the screen.

![Search for patient to be notified](image)

**Figure 17**

Enter information for your new case on the next screen. The screen is similar for notifying presumptive and confirmed cases. When you are done entering information click **Save** to keep your information.
After you have a patient in the system, you can add more information about them, including Adverse Reactions to Medicines, Comorbidities and Associated Factors, Previous TB Treatment, and Contacts Information. Click the ADD or EDIT buttons to enter information in these areas.
In addition to case data, you can also enter **Follow-Up**, **Treatment**, and **Issues** information about each patient, as shown in the screens below.

The **Follow-Up** section allows you to enter information about lab results.
Enter information about the patient’s regimen in the **Treatment** section, as shown in the next three figures.

**Figure 21**

Start standard regimen

**Figure 22**
Other actions that you may need with a case are on the left side of the screen. Options include buttons to **Delete case**, **Validate case**, **Close case**, and **Transfer to another health unit**. Any tags that you have assigned to the case will appear in the **Case tags** section, and any other cases the patient has will appear in the **Other cases** section.
Reports
The e-TB Manager software allows you to easily create your own reports. Click on the Cases tab and then on Reports in the left menu. Click the NEW REPORT button to begin creating your report, as shown in the figure below. Click the + sign under Filters to select the filters for your report.

![Figure 25](image-url)