MINISTRY OF HEALTH

NATIONAL TUBERCULOSIS AND LEPROSY PROGRAMME (NTLP)

ELECTRONIC TB AND LEPROSY REGISTER (ETL)

User Guide

PREPARED AND SUBMITTED BY:
UDSM DHIS2 LAB
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
UNIVERSITY OF DAR ES SALAAM

June, 2022

Table of Contents

1 Accessing the System

Electronic Case Based TB and Leprosy System is the web-based system used to collect, store and analyse information on TB and leprosy patients. The system also monitors progress on treatment of TB and Leprosy patients from when registered throughout to treatment completion. The system contains two registers; eTB Register (created by merging TB, DR-TB and Laboratory register) and eLeprosy Register (merger of leprosy Unit register LEP 03 and POD register lep05) (DHIS2-ETL$_2$).

The system is web based, hence accessible over the internet using a web browser at www.etl.moh.go.tz.

1.1 System Requirements

To access the system you need to have the following:

i. Computer either laptop or desktop
ii. Web browser installed in your computer such as Mozilla Firefox, Google Chrome, Safari, Internet Explorer **(Google Chrome is preferred)**.
iii. Internet access.
iv. User account that is username and password.

Figure 1: Requirement for accessing the system

2 Setting Up the Electronic TB Register

2.1 Setting up a User

To setup an account, user needs to provide the following:

- Full name
- Active email address
- Phone number
- Designation (DOT provider; DTLC, TBHO; RTLC; D-HMIS FP; D-RMIS FP; Lab staff; Program Officer National,)
- Level (facility/district/region/Zonal lab; national)

2.2 Password Policies

For a user to login to the system, the password has to be strong enough. It should contain a mixture of letters, numbers and special characters in which at least one letter must be capital letter.

3 Getting Started

3.1 Accessing the system

To get access to the system you must have username and password, in order to login do the following:

1. Open web browser (Google Chrome is Preferred)
2. Type the URL, currently (https://etl.moh.go.tz) in the address field it might change later. You will see the login screen as in Figure 2.

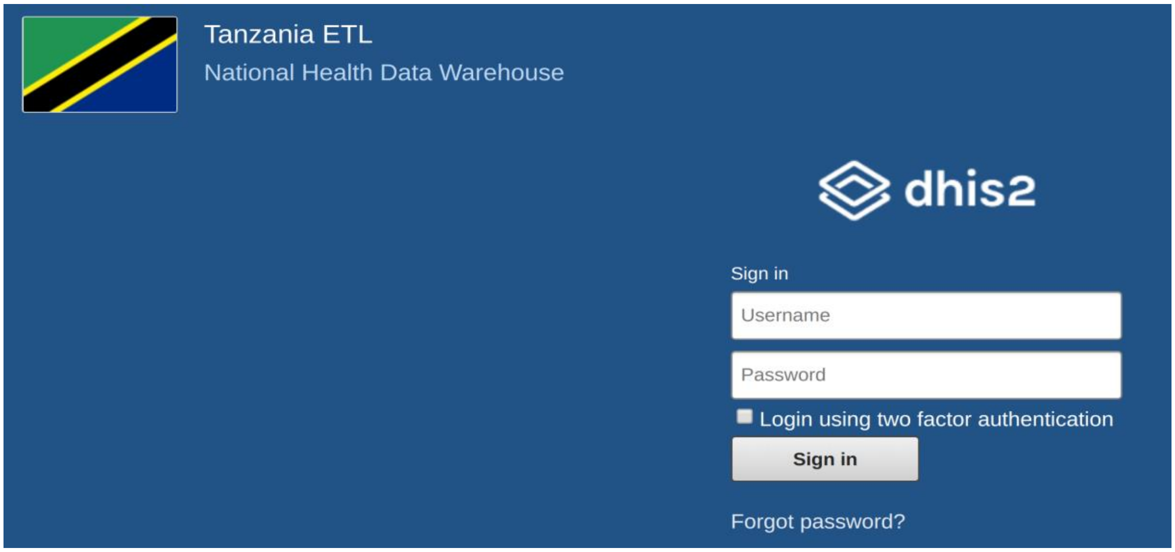


Figure 2: Login Screen

3. Enter username and password to login.
4. Once you have successfully logged into the system, you will see the start page which depends on system setting.

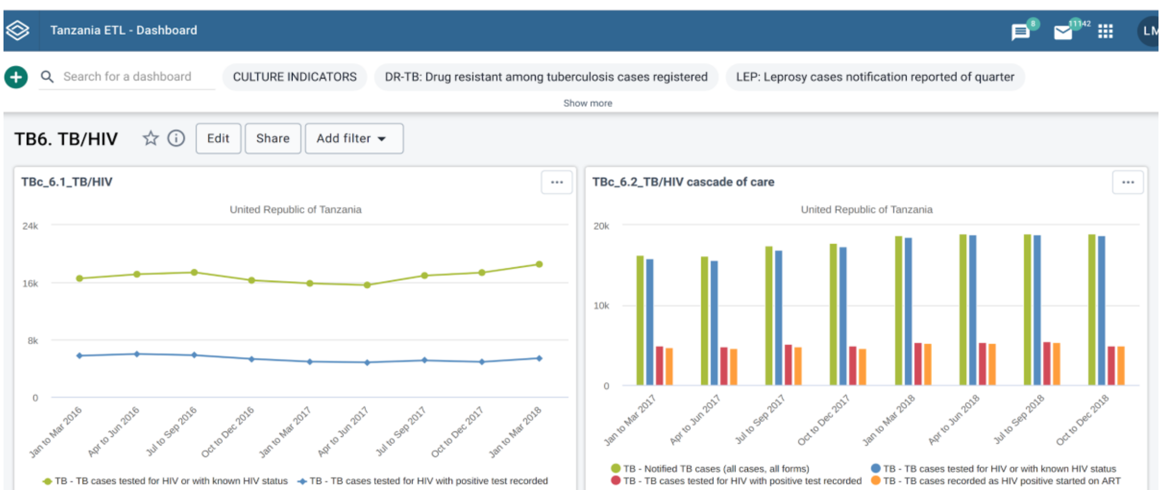


Figure 3: System Dashboard

5. To logout of the system click on the initials of your name located at the upper right corner and use the **Log out** sub menu, you will be returned to the login screen.

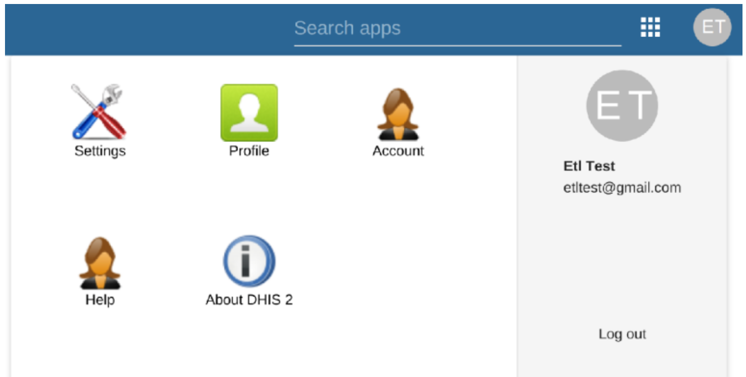


Figure 4: Logout of the system

4 Performing Data Entry into the System

To enter data into the system view and-or edit existing cases we use an application called ETL_v2. To open the ETL_v2 app window, follow these steps:

1. Hover/click on the Apps menu  displayed in the main menus at the upper right on the left of your name initials. A drop-down menu will appear listing the applications provided by the system.

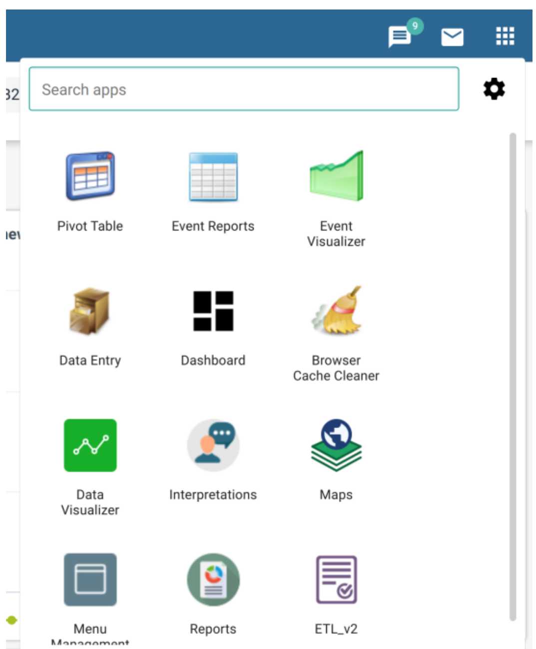


Figure 5: Accessing the ETL_v2 app

2. Click on the ETL_v2 app.
3. If ETL_v2 app does not appear in the list after step 1 above, type "etl" on the search app text box or scroll up and down to locate ETL_v2 app then continue with step 2.

4. The Tracker capture app window will open as shown in Figure 6.

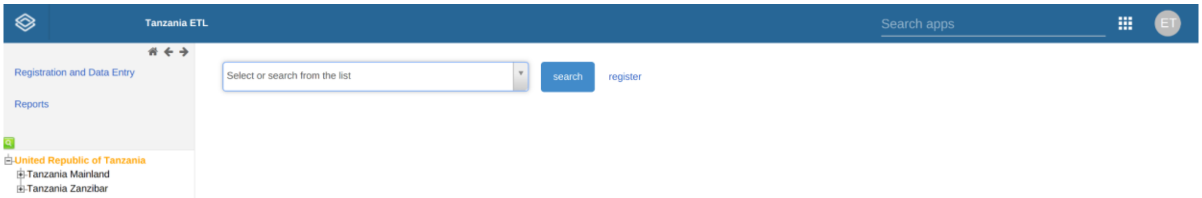


Figure 6: ETL_v2 app *Window*

4.1 Selecting Register

To start entering records or viewing and editing records, the first step is to open the correct register by following these steps:

1. Locate the organization unit you want to enter/view/edit data in the tree menu to the left through expanding and closing branches by clicking on the +/- symbols as follows:

   a. Expand the United Republic of Tanzania
   b. Expand the Tanzania Mainland or Tanzania Zanzibar depending on the facility
   c. Expand the Region in which the facility belongs (e.g. Arusha Region).
   d. Expand the District in which the facility belongs (e.g. Arusha City Council)
   e. Then Select the facility (e.g. AICC Hospital)

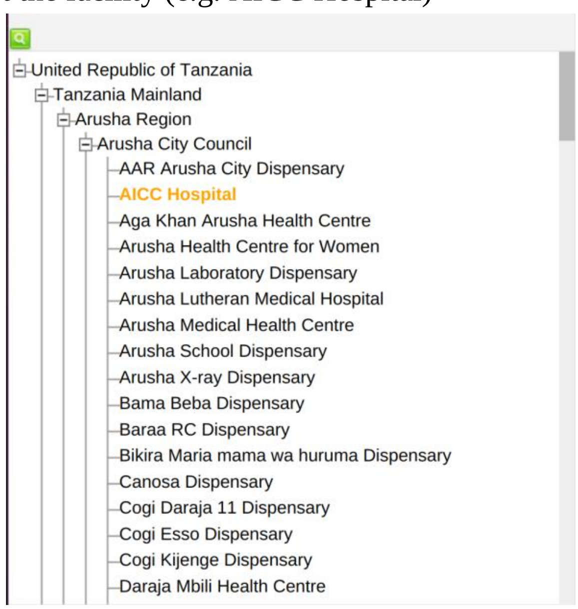


Figure 7: Selecting Organization Unit to Enter Data

2. Select the appropriate register from the dropdown list of registers available to your selected organization unit. The system has two registers (1. eTB Register; 2. eLeprosy Register) as seen in figure 7 below.

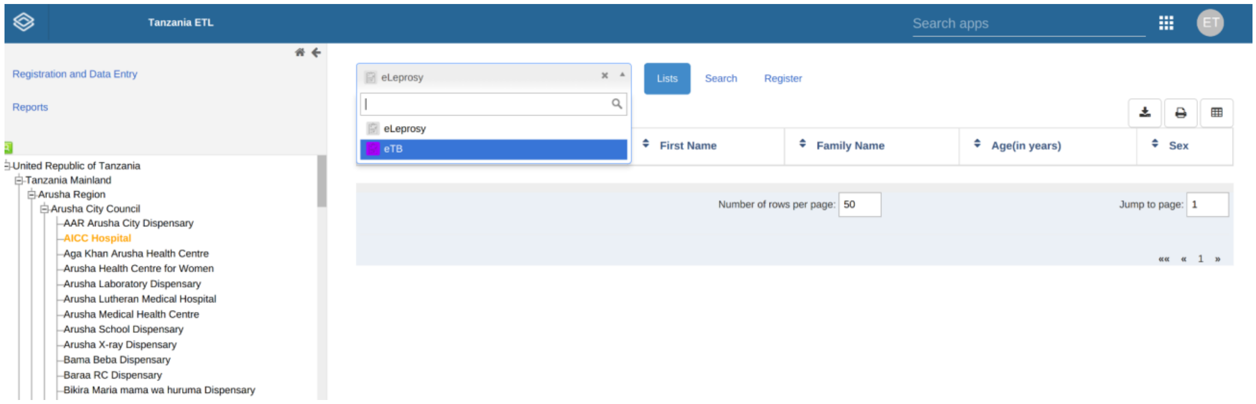


Figure 8: List of registers in the system

Please note the following:

a) *The register, in its simplest definition, is a form in which a TB or Leprosy patient's records are kept and tracked over time.*

b) *From ETL Register v2 perspective, there are two registers so far:*

- ***eTB Register**, which tracks each tuberculosis patient from the beginning to the end of treatment. It is comprised of three merged registers from the old system ie. TB Register, DR-TB Register and Laboratory register*
- ***eLeprosy Register**, which tracks each leprosy patient from the beginning to the end of treatment. It is comprised of two merged registers from the old system ie. Leprosy Register and POD Examination Register*

4.2 Entering records in eTB Register

To enter records into eTB Register do the following:

1. Select eTB Register from the list of registers listed in figure 8 above.
2. eTB Register will open and display a list of cases that have been registered in it based on the selected organization unit.

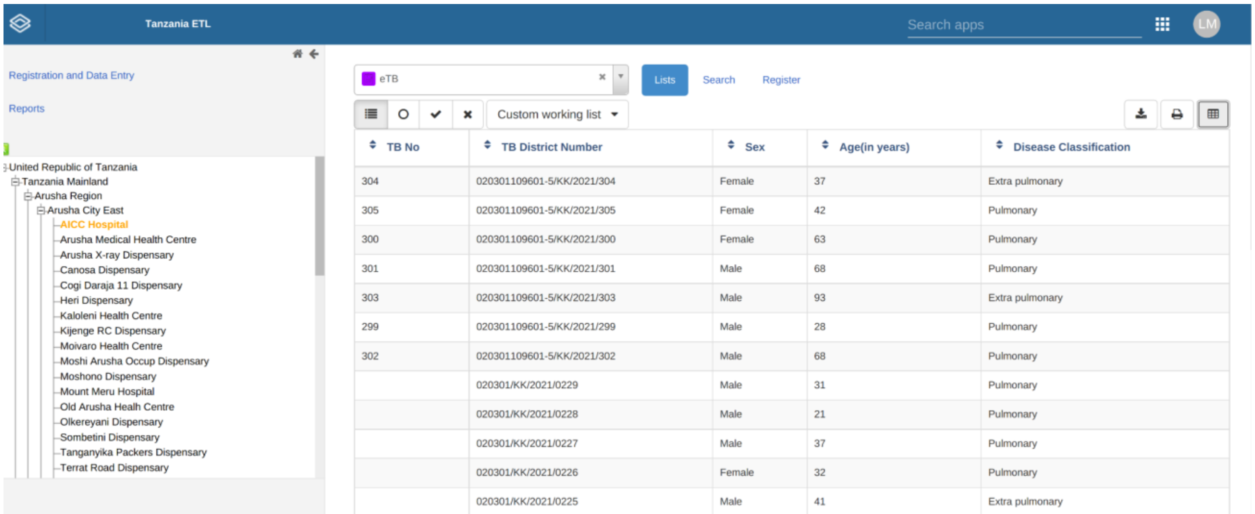
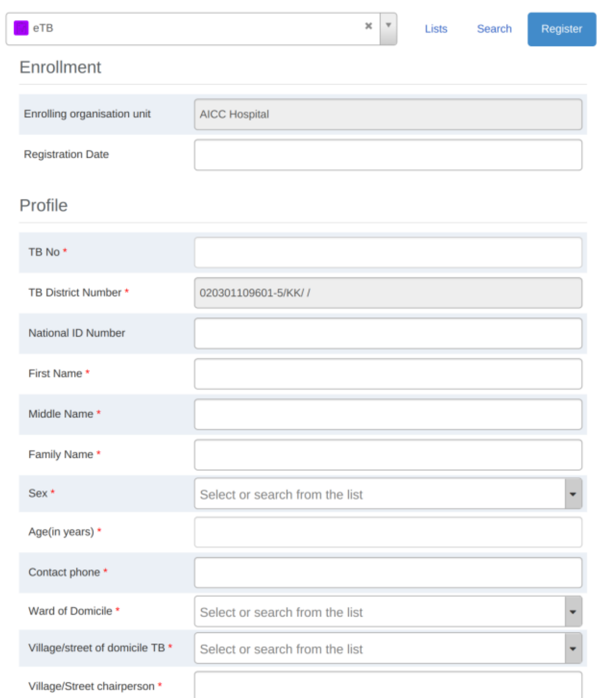


Figure 9: TB Cases registered in the system for selected Organization unit.

3. Click on the register button to register a new TB case, registration form will open for filling the patient's demographic information as shown in figure 10.
4. Select the appropriate registration date and continue entering enrollment data.



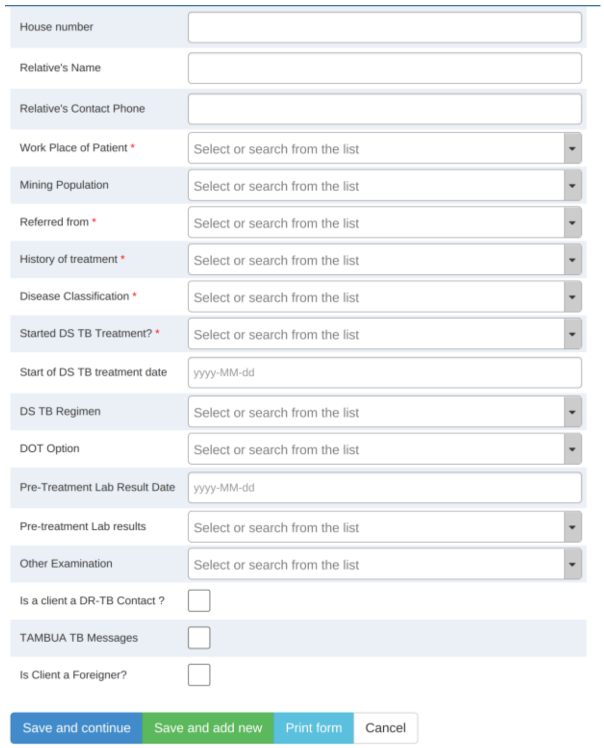


Figure 10: The TB Case Enrolment Screen

Please note the following:

- *The fields with red asterisk symbols in their label are mandatory and value must be entered to be able to proceed.*
- *Enrolling organization unit is the one you selected to enter data, if you want to change it then click on "Cancel" at the end of the enrolment form and go back to step 1 above.*
- ***Registration Date** is the date when the TB case was registered, is set to the current day by default but if registration was done on another day click on the date and pick the correct date.*
- ***TB District Number** and DR-TB Number are partially automatically generated (E.g. 020302/KK/2017/…) for each new TB case registered and the last unique number for a patient is autofilled using TB No which are district/facility generated yearly.*
- ***Age** cannot exceed 99 years, and mandatory.*
- *The **Site** option is hidden when Disease Classification is Pulmonary.*
- *If **"Started Treatment"** field is selected "No" or "Died before start of treatment", Start of treatment date, regimen ,DOT Option and Tambua TB messages will be hidden otherwise you will be required to fill the details about start of treatment in figure 11*

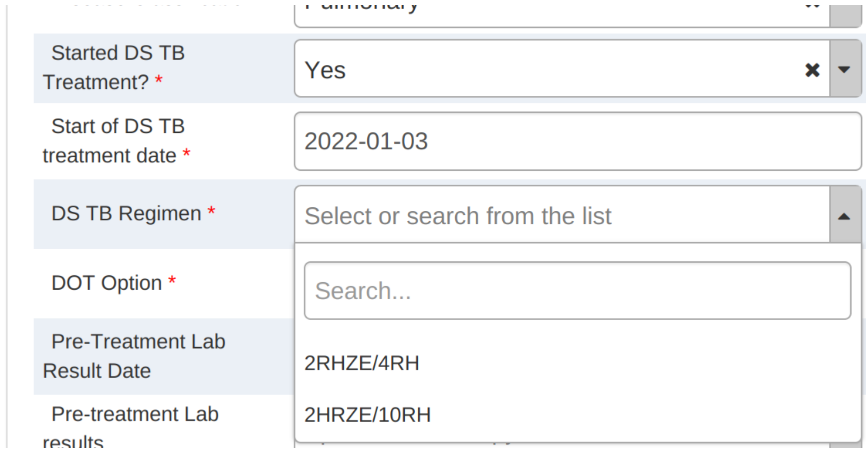


Figure 11: Details about start of treatment

- *On **TB regimen** the kids' regimen is hidden when the client's age is above 15 years.*
- *On **Pre-treatment Lab Result** a field to choose appropriate test results will come up depending on the selected test.*
- *On selecting "No" in the field, "**Is Client a Foreigner**" the option for filling "Country of residence" will disappear as the patient will automatically be Tanzanian*

5. Click on:
   - *"**Save and continue**" to save enrollment (registration) of the TB case and continue entering further records related to the TB case as shown in the figure 11.*
   - *"**Save and add new**" to continue enrolling other cases for the same organization unit and later you can get back to enter further stages of each case one after another.*
   - *"**Print form**" to print blank enrolment form*
   - *"**Cancel**" to cancel registration*

After clicking save and continue, new screen with the stages contained in the eTB register as in Figure 12 will open up to allow data entrant to enter more treatment records for the case

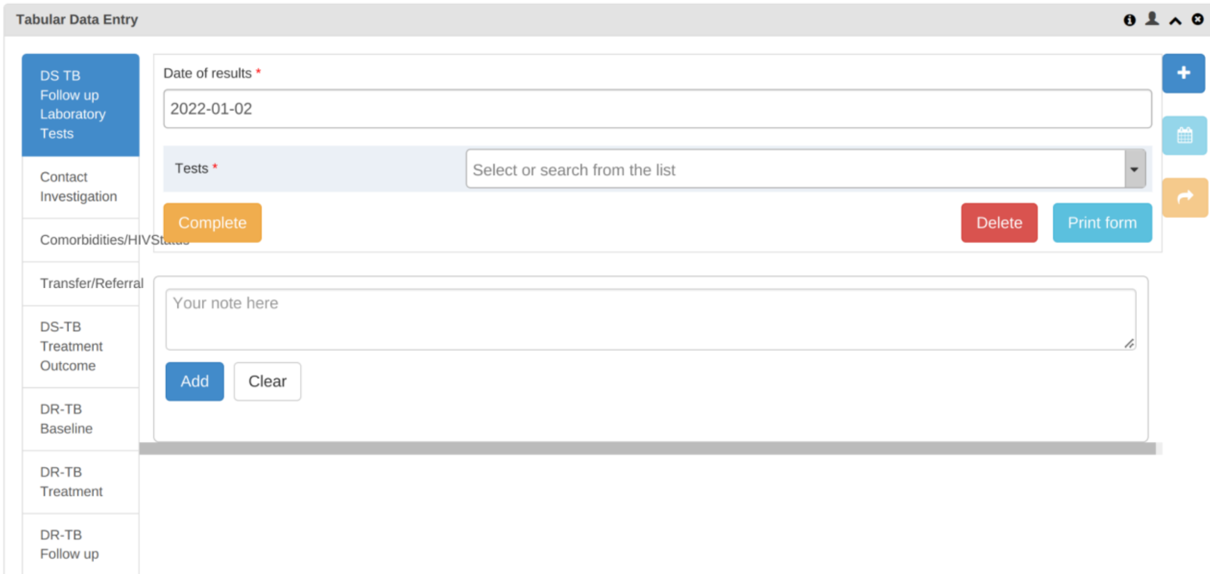


Figure 12: DST Follow up and Laboratory Tests section

Please note the following:

- *A stage contain similar records about certain service provided to the patient*
- *Some stages are common to both TB and DR-TB cases and some are specific depending on the type of case.*
- *Some stages open automatically and others will open up depending on specified program rules.*
- *After entering records in a specific stage you will be required to hit the Complete button so as to save the records. The button will be renamed as Incomplete and you will be required to click it for you to edit the records.*

6. Select Date of results and appropriate test done as appears in the dropdown list eg. Sputum microscopy.
   Please note the following:
   - *Depending on the test selected a new filled will appear for you to fill in the test results.*
   - *In the field that is written "Your note here", you can type your note for the section when necessary and click add to keep the note but they are not used by the system they are just for your own uses.*

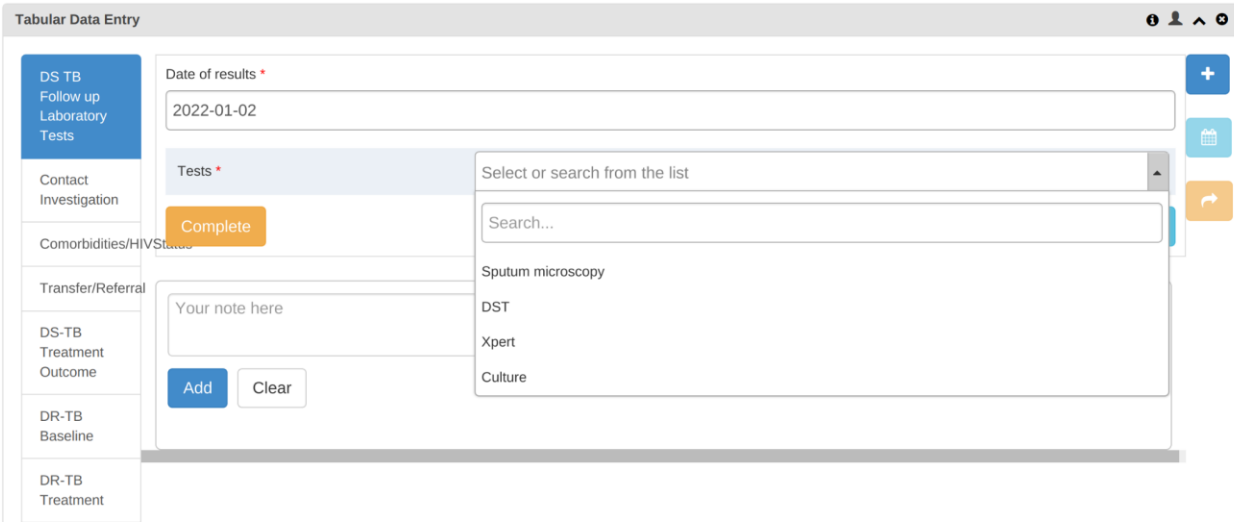


Figure 13: Various diagnosis TB tests options available

7. Record the diagnosis result for the selected test as appears in Figure 14 and then click Complete to Save.

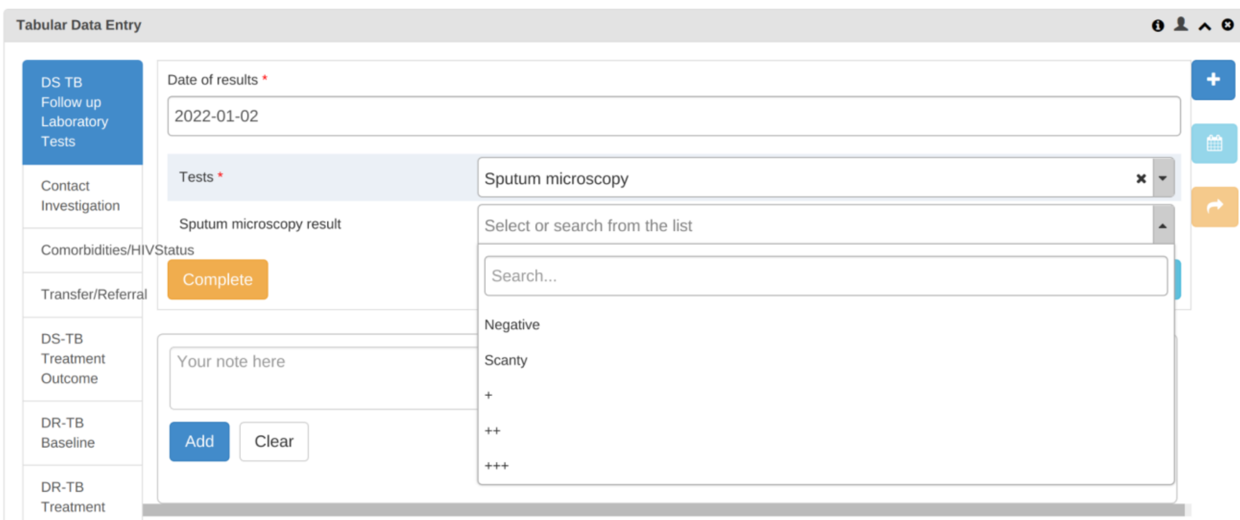


Figure 14: Recording test results

Please note the following:

- *Several tests can be done over time for the same TB case. After saving the current test result, the system will open a new form where you can fill in the other results. You will only need to select the date of result and test then fill in results.*
- *You will be required to fill the details of this stage on every followup*

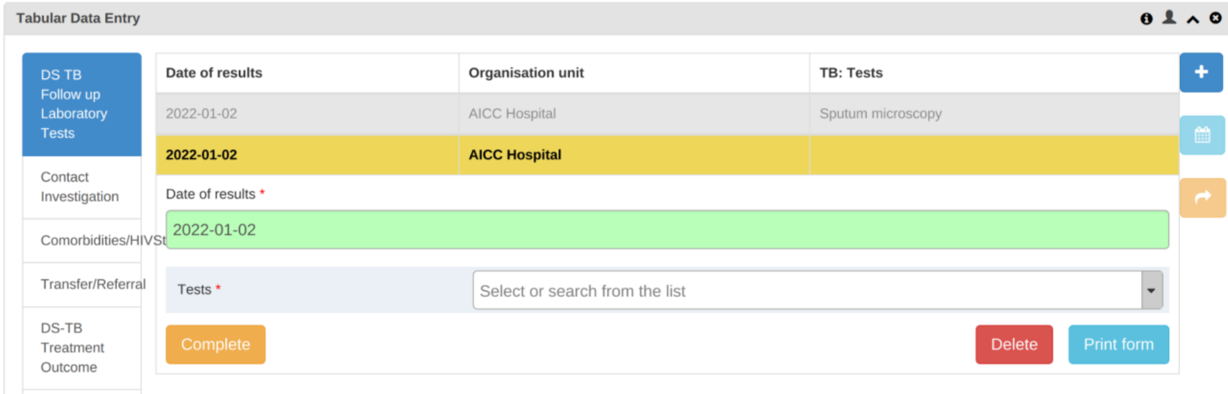


Figure 15: Adding more Test Results

8. Select the Contact Investigation section to fill in details of people who live in the same house with such a TB patient then click Complete to save.

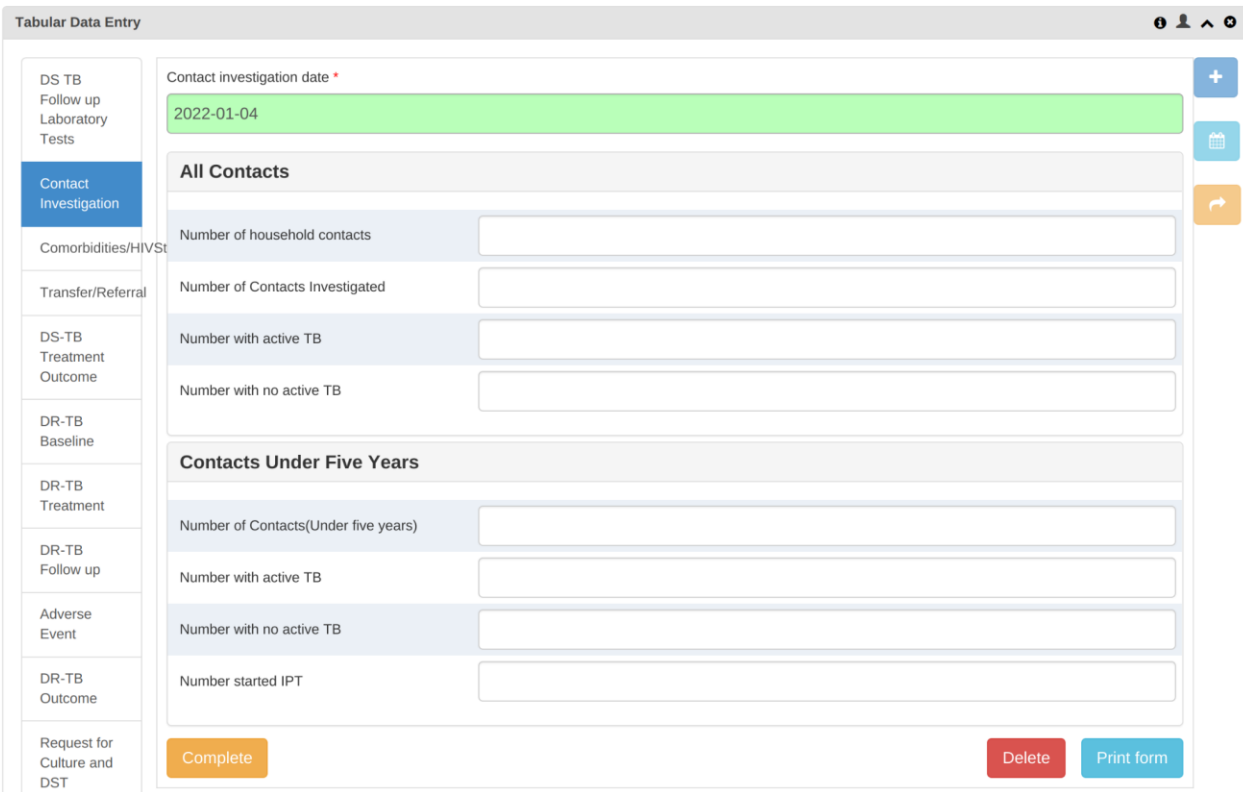


Figure 16: Household Contacts details

9. Select Comorbidities/HIV status stage and fill in required details then click Complete to save.

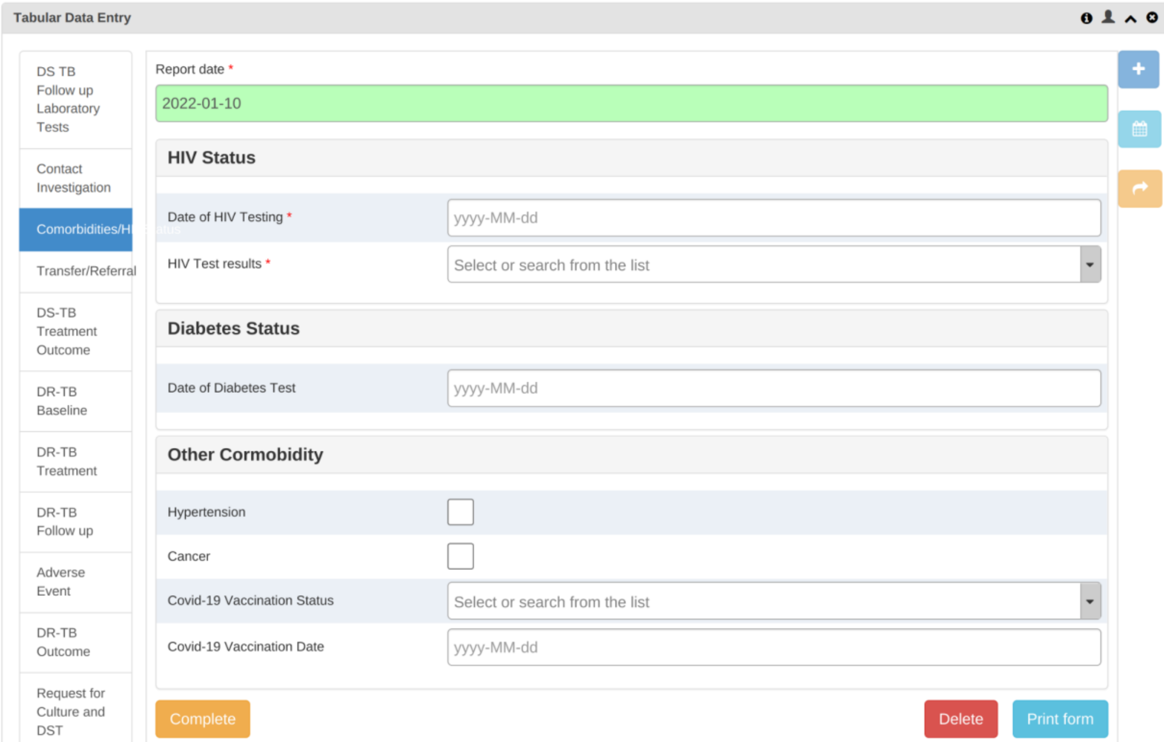


Figure 17: Comorbidities stage.

- *On "HIV status" if the HIV Test results is Positive, new fields will pop up to fill in the patient's HIV details.*
- *On "Diabetes status" if the status is Diabetic, a new field for choosing whether a client is enrolled to diabetic clinic or not will appear.*
- *Fill in other comorbidities "Hypertension" and "Cancer" if the patient was diagnosed against them.*
- *If Yes is selected on "Covid-19 Vaccination Status", you will be required to fill in Covid-19 Vaccination Date*

4.3 Handling Transfer and Referrals

The system allows transferring of cases across different organization unit (facility; district; region and outside the country).

1. Select Transfer/Referral, then select Transfer/ Referral date and the screen in Figure 18 will open. The stage has two sections; Transfer details for records of cases transferred or moved out and Referral for MDR Treatment Initiation for MDR cases referral.

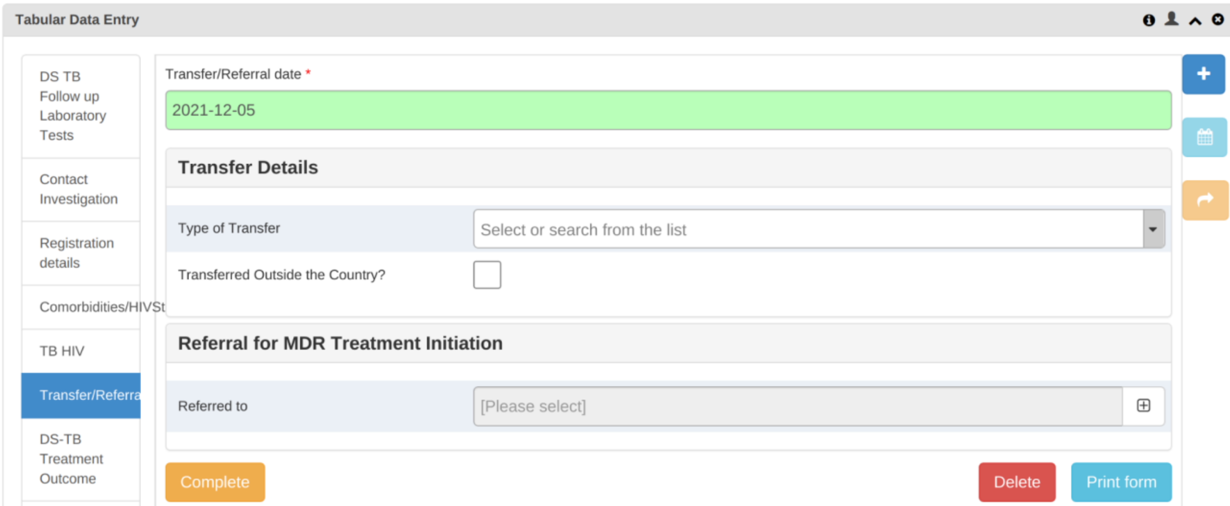


Figure 18: Transfer/Referral screen

2. Select Type of Transfer for such a specific case either Moved out or Transferred out.

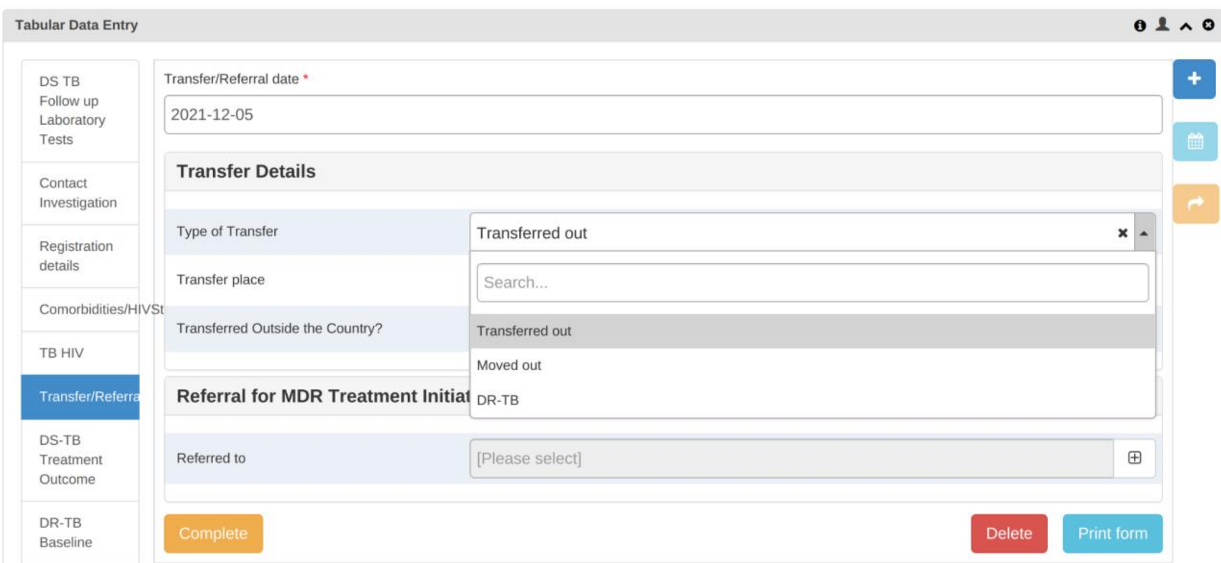


Figure 19: Selecting type of Transfer

4.3.1 Moved out

A patient is moved out if he has been shifted from one facility to another facility within the same region. From the list in figure 18 select Moved out option.

1. After selecting the Moved out option on the Type of Transfer. A new field named District/Facility will appear for you to select a facility where the patient is moved.
2. Click on the + sign on the District/Facility field.

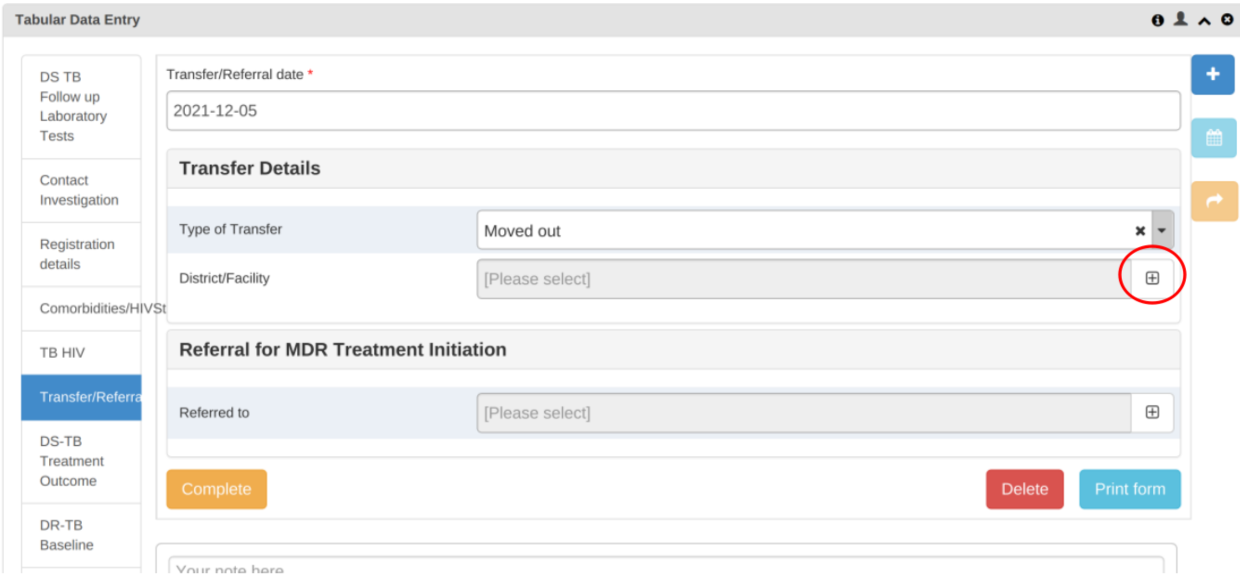


Figure 20: Moved out screen

3. A new screen for selecting a facility for moving out a patient will come up where you can either search the name of the facility or select it from the organization unit tree.

- Type in the full name of the facility to search it or select it from the organization unit tree.
- Click select after choosing the facility

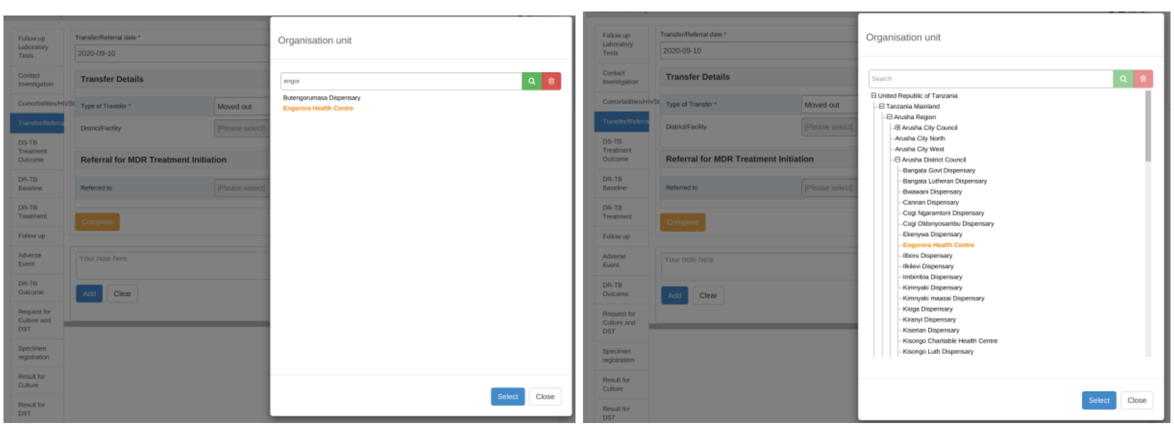


Figure 21: Selecting facility

- Click complete to save the details of moving the case out. Notification message will be sent to the receiving facility. DTLC in the receiving facility will be able to open the patient and record treatment details as he/she continues with treatment.

Figure 22: Notification Message for a moved out case

4.3.2 Transferred out

A patient is said to be transferred out if he has been shifted from one facility to another facility which is outside the region.

1. Select Transferred out option on the Type of Transfer. A new field called Transfer place will appear.
2. Click on the + sign on Transfer place field

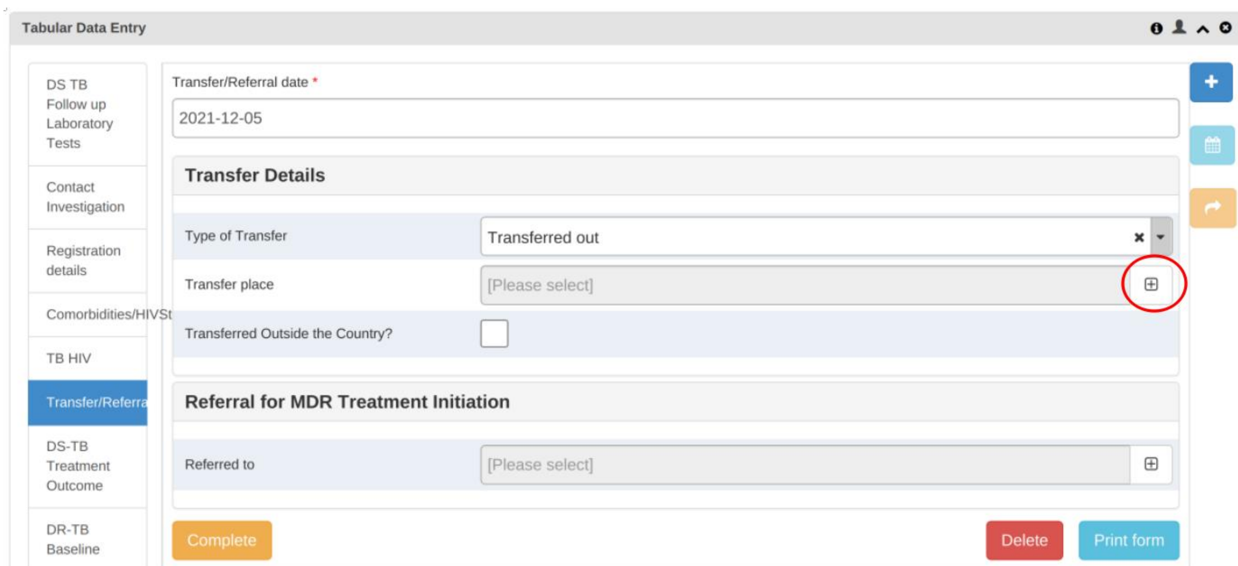


Figure 23: Transferred out screen

4. A new open screen for selecting a facility for transferring out a patient will come up where you can either search the name of the facility or select it from the organization unit tree.
    - Type in the full name of the facility to search it or select it from the

organization unit tree.

- Click select after choosing the facility as in Figure 20 above.
- Click complete to save the details of moving the case out. Notification message will be sent to the receiving facility. DTLC in the receiving facility will be able to open the patient and record treatment details as he/she continues with treatment.

4.3.3 Referral for MDR Treatment Initiation

If the patient has been diagnosed with RR/MDR TB and moved out to another facility to initiate second line treatment go to Referral for MDR Treatment Initiation section and perform the following:

1. Click on the + sign on Referred to field a new screen will appear for choosing the referral facility.

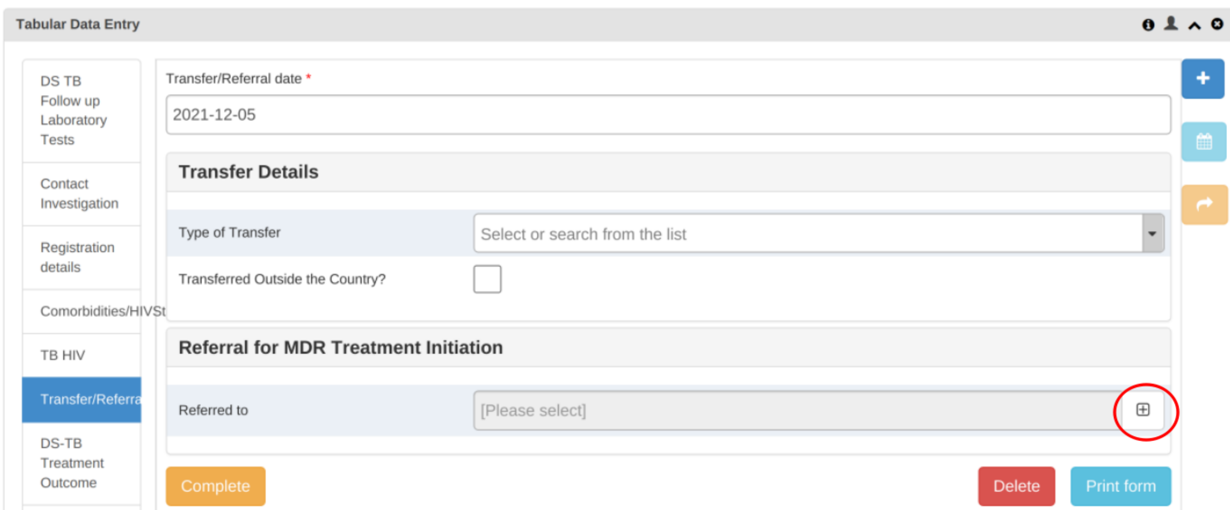


Figure 24: Referral screen

2. Type to search or select the facility from organization unit tree as in figure 20 of the section 4.3.1
3. Click on select to save selected facility.
4. Click complete to refer the patient. Notification message will be sent to the receiving facility. DTLC in the receiving facility will be able to open the patient and record treatment details as he/she continue with treatment

4.4 Accessing a Transferred or referred case

When an case is Transferred from one facility to another means the following in eTL Register context:

i. Its enrollment (registration) remains in the previous facility i.e. the facility where the case was enrolled.
ii. In the eTL Register, the case will still be appearing in the facility where it was enrolled.
iii. A notification message is automatically shared within the system and respective staff will receive this notification as explained in section 4.3.
iv. The transferred case will be accessible in the facility where it has been transferred to through searching.
v. The facility to which the case was transferred to will be able to view the previous data recorded for that case by the enrolling facility but will not be able to change them.
vi. The facility to which the case was transferred to will be able to continue recording new data for the transferred case and this data will be recorded in this new facility.
vii. Reports and other analysis will process the data recorded at any stage based on the facility where the data was entered.

To view the case data and or add new data for a transferred in case in its new facility go to apps and select eTL Register then follow this simple steps:

i. Select the facility to which the case has been transferred to.
ii. Select the appropriate register depending on the transferred case
iii. Click on the search button and fill in the TB number to search a client. The system will search the client and a new screen will appear as in Figure 25.
iv. Click on Open to view the details of the case.

Note:

- *You will be able to see the details filled on the client's previous facility but you won't be able to edit them. You can be able to enter new patient's details as per treatment done in the new facility.*

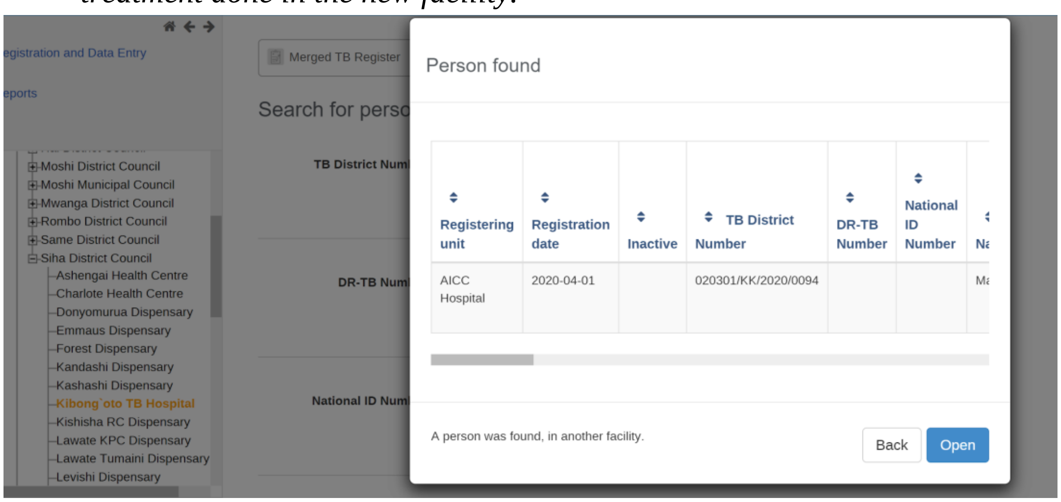


Figure 25: Opening a transferred in case from its new facility

4.5 Entering data about Adverse Event

An adverse event is any undesirable experience associated with the use of a medical product in a patient. The event may be serious and should be reported.

1. Go to the Adverse Event stage
2. Select Date Adverse Event Occured.

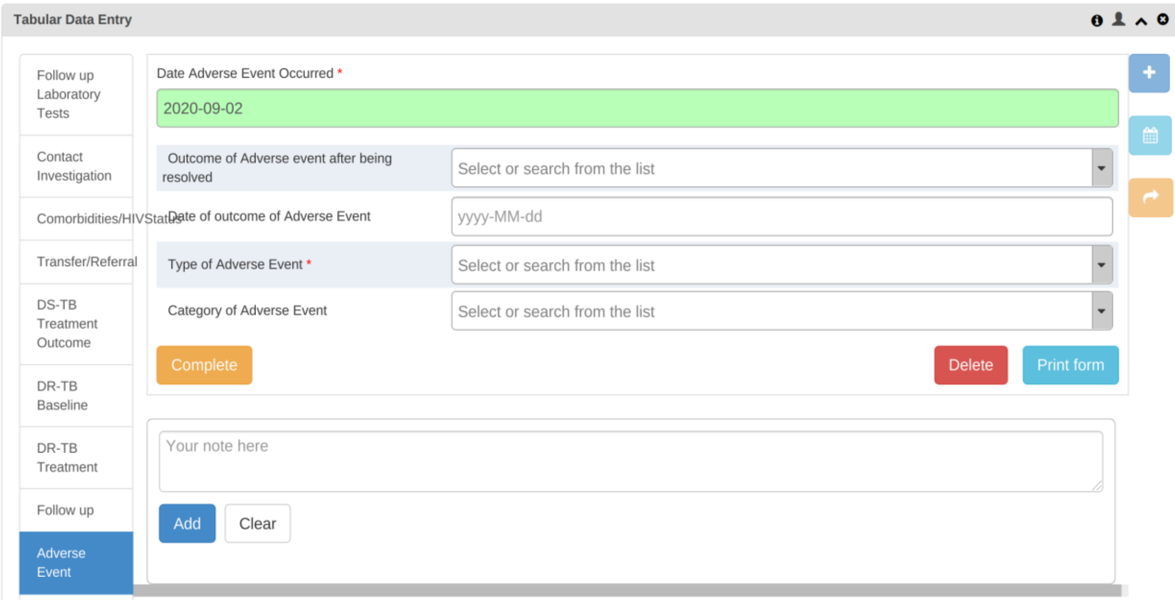


Figure 26: Adverse Event stage

3. Select Outcome of Adverse event after being resolved and the date of outcome of Adverse Event.

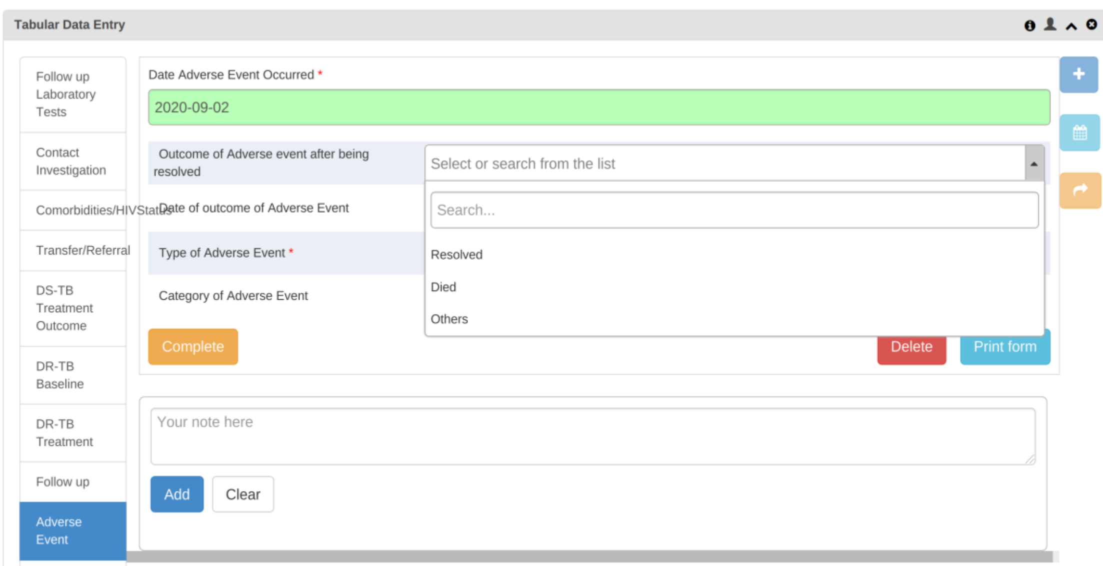


Figure 27: Adverse Event stage details

4. Select Type of Adverse event.

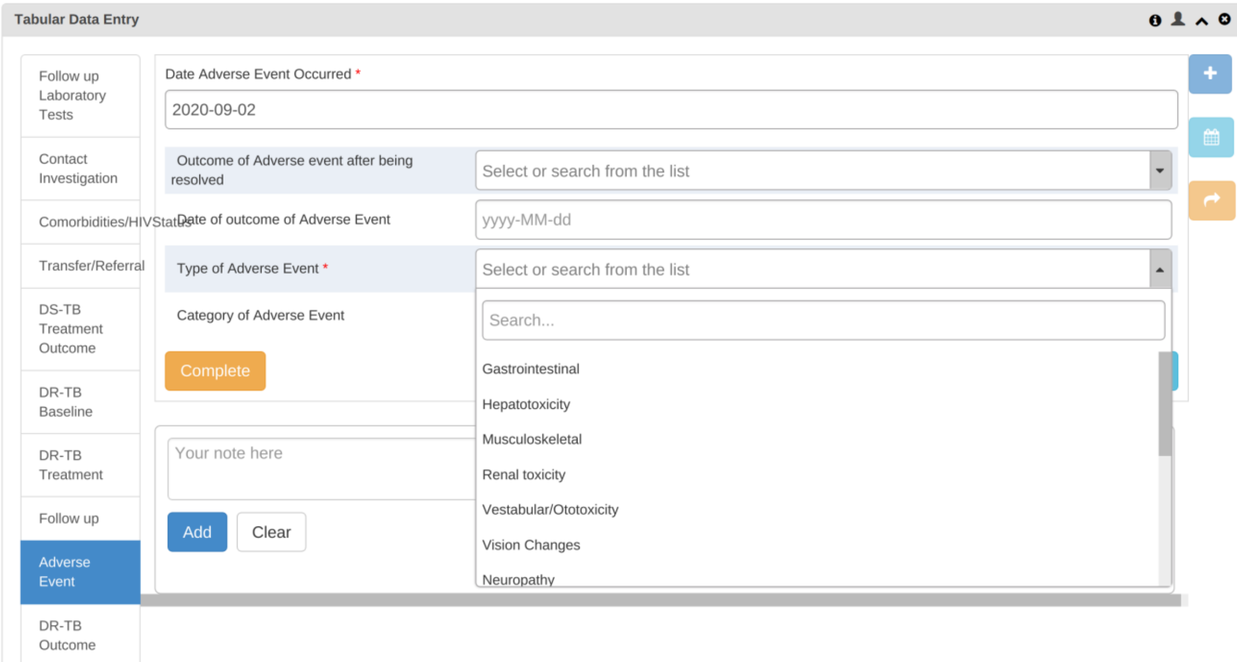


Figure 28: Selection of Type of Adverse Event

5. Select Category of Adverse event and then click Complete to save the details of Adverse event.

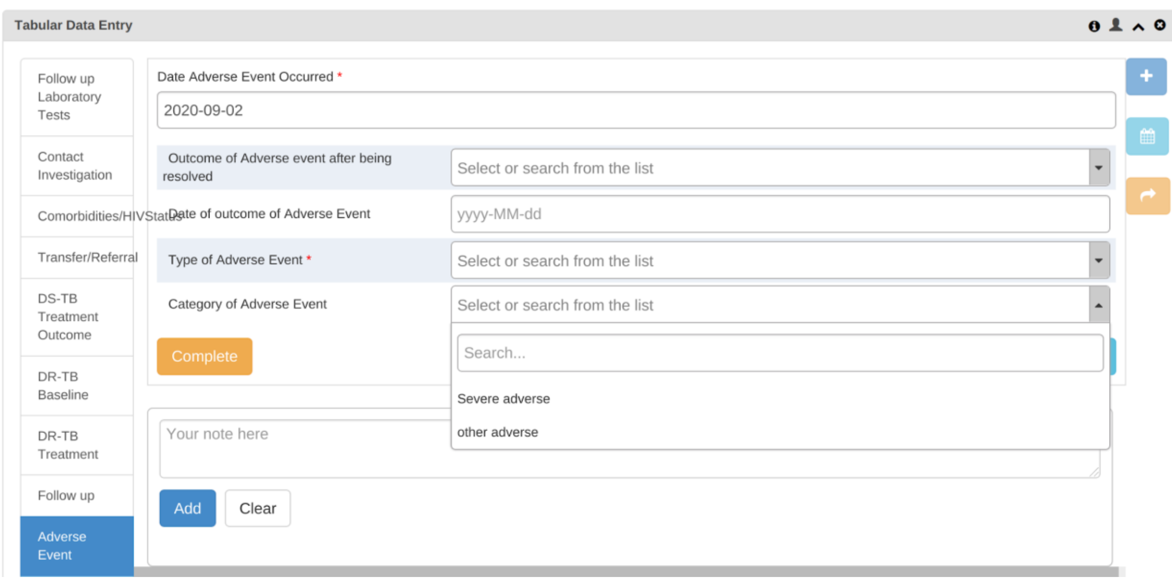


Figure29: Selection of Category of Adverse Event

4.6 DS TB Treatment Outcome

Every DS TB case must have an outcome which shows what happened at the end of treatment. Treatment outcome can occur at any point or at the end of the treatment course. The system automatically calculates the number of days a patient stayed in treatment. The days are calculated from when the patient started treatment. To record treatment outcome do the following:

1. Go to the DS-TB Treatment outcome stage.
2. Select Date treatment ended.

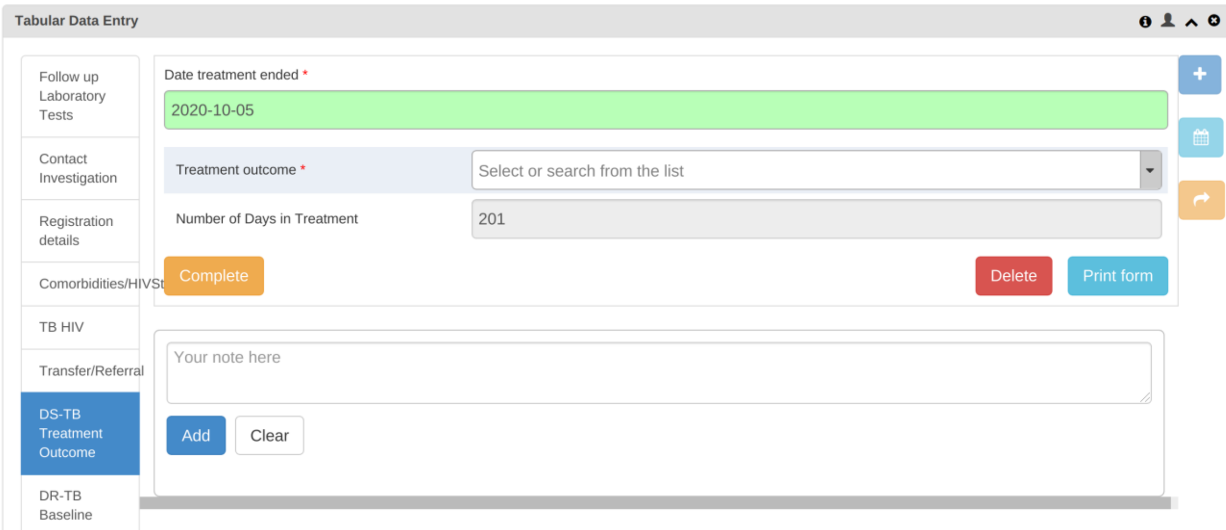


Figure 30: DS-TB Treatment Outcome screen

3. Select appropriate Treatment outcome.
4. Click Complete to save the outcome.

4.7 Entering data for DR patient

A person diagnosed with RR/MDR-TB is required to be initiated treatment with 2nd line TB medicines.

Follow up tests are to be taken to monitor response to medicines the patient is up taking. Follow up laboratory tests results that are captured in eTB register are smear microscopy and culture, in addition weight and heights are also taken.

4.7.1 Entering data for a direct RR/MDR TB patient

Every TB patient must have a TB district number. If it happens that a patient has been diagnosed with DR-TB in the first place, they are to be given both TB and DR-TB district numbers. To register a direct DR-TB case do the following:

1. Perform registration as in stage 1 to 5 of section 4.2 in this guide.
2. Then, go to DR-TB Baseline stage and select Baseline collection date.
3. Fill in the culture results, smear results, weight and height. The system will calculate BMI.
4. Select type of resistance from the dropdown list as per diagnosis done.

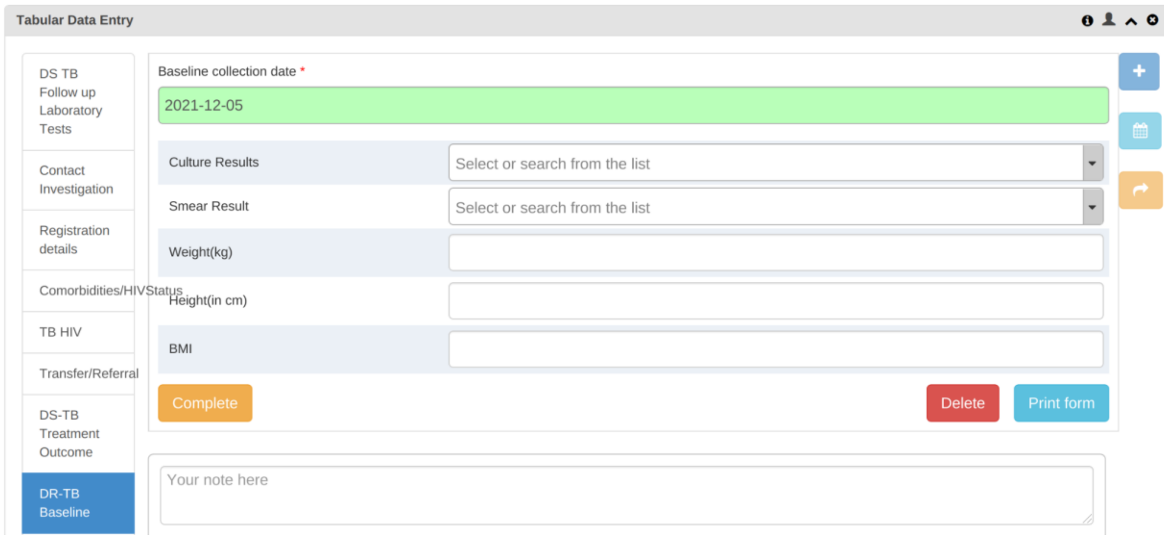


Figure 31: Baseline stage screen

5. Click on Complete to save the baseline information.
6. Select the DR-TB Treatment Stage.
7. Enter the DR-TB No., the DR-TB District No will be generated.
8. Select Type of Resistance and Type of DR-TB regimen
9. Select Yes if the patient received second line drugs previously and no if not on the Received SLD Previously field
10. The Days between treatment are automatically calculated by the system from when a patient started treatment to the current treatment.

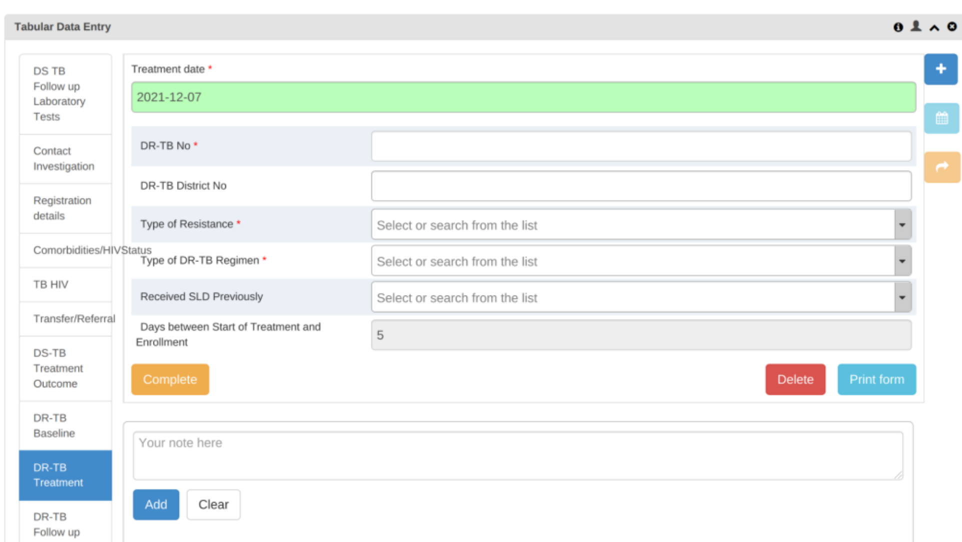


Figure 32: DR-TB Treatment details screen

11. Click Complete to save details of this stage.
12. Go to follow up stage and select follow up date.

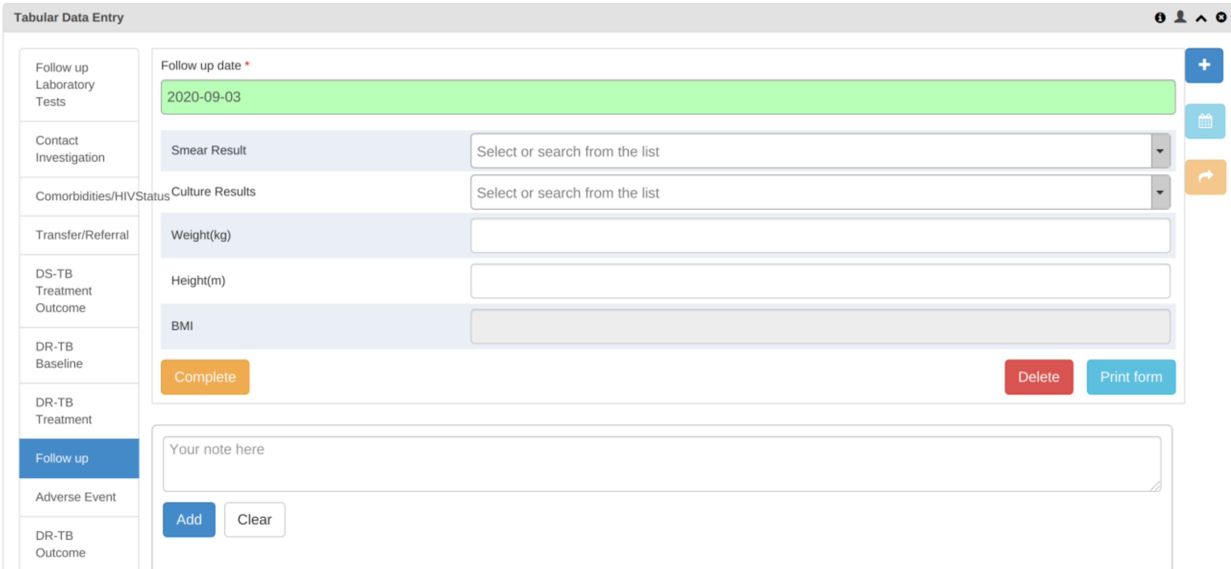


Figure 33: DR-TB Follow up stage

13. Record culture results, Weight and Height of the patient. The system will automatically calculate BMI of the patient.
14. Click on Complete to save the Follow up information.

    Note that:

    - *Follow up information are recorded for every visit of a DR-TB patient*

4.7.2 Entering data for a DS TB case which converted to DR TB during follow up

1. Select facility from organization unit tree.
2. Select eTB Register from the dropdown list
3. Search for the case by using TB district number.
4. Click on the case, the screen with stages will open up where you can enroll a patient on DR TB treatment.
5. Perform the procedures highlighted in Step 2-14 of section 4.7.1

4.8 Specimen submission for culture and DST testing

At any point of treatment, a follow up test can be requested by the clinician, During treatment follow up sessions, a patient has to be diagnosed to check whether the mycobacteria are responding to the type of regimen that the patient is up taking. When the patient is still positive at the second month his or her specimen has to be sent for culture and DST. To refer a specimen for culture and DST do the following:

1. Go to the Request for Culture and DST stage.

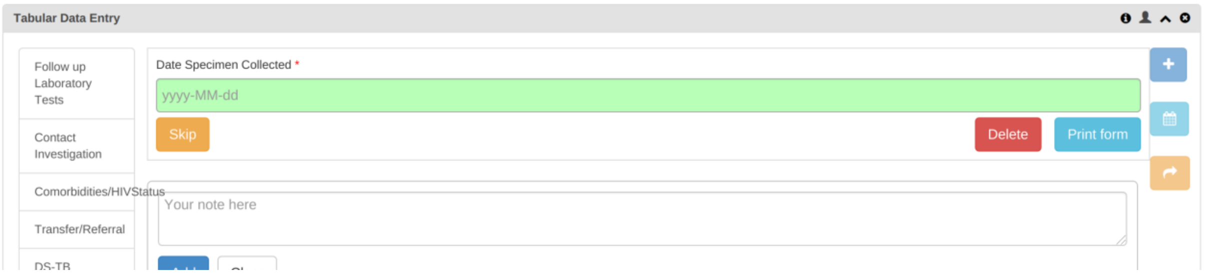


Figure 34: Request for Culture and DST screen

2. Select Date Specimen Collected. The stage will open with fields for filling up the details of the specimen.

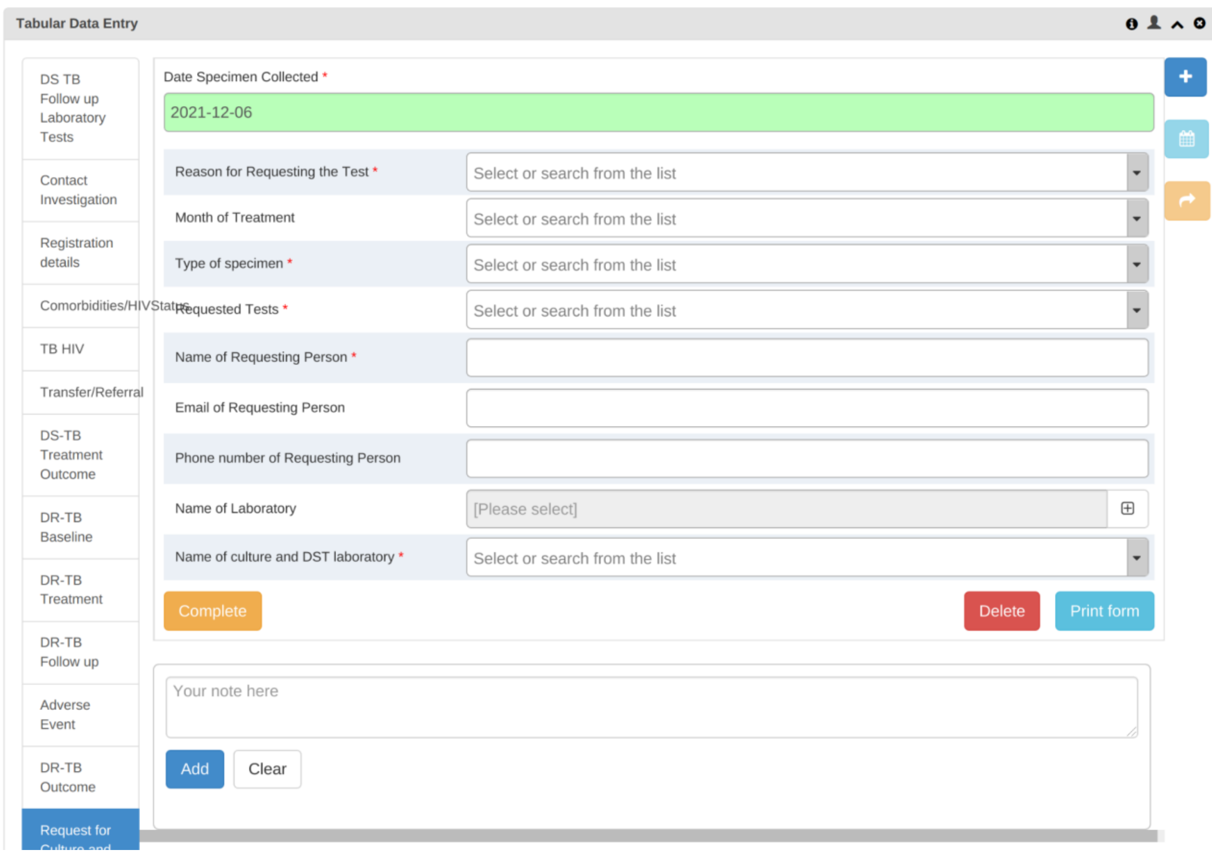


Figure 35: Filling the details for Request for Culture and DST

3. Select the Date specimen processed and fill in the lab serial number.
4. Select the reason for requesting the test.

Note: If the reason is follow up you will be required to select a month of treatment.

5. Fill in all other details.
6. Select the Name of the Laboratory from where the specimen originated
7. Select the name of the Culture and DST laboratory where the sample is being referred to.

8. Click Complete to save. A message containing specimen details will be sent to the referral lab where the sample is being sent to.

4.9 Accessing the specimen at Culture and DST Laboratory

Notification messages will be sent from the diagnostic facility (local laboratory) to the Culture and DST laboratory where a specimen has been sent to.

1. Open the message and use the TB District number to search the sample from the Culture and DST laboratory .
2. Click on the TB District number associated with the sample to open it.
3. On the specimen registration select Date Specimen Processed, the Specimen registration form will open as in figure 36.

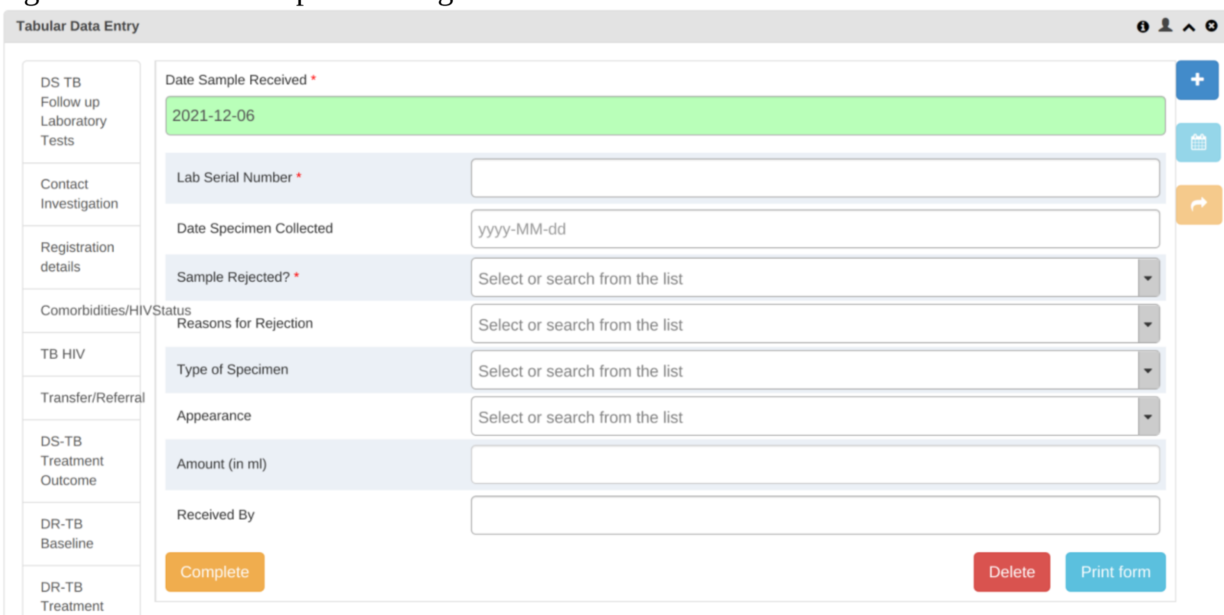


Figure 36: Specimen registration at Zonal Laboratory

4. Fill in the Lab serial number for the sample.
5. Select Yes or No on the Sample rejected? field. If "Yes" is selected you will be required to select reason for rejection otherwise fill in the details for respective fields.
6. Click complete to save the registration details for the sample.
7. Select Result for culture stage then select report date.

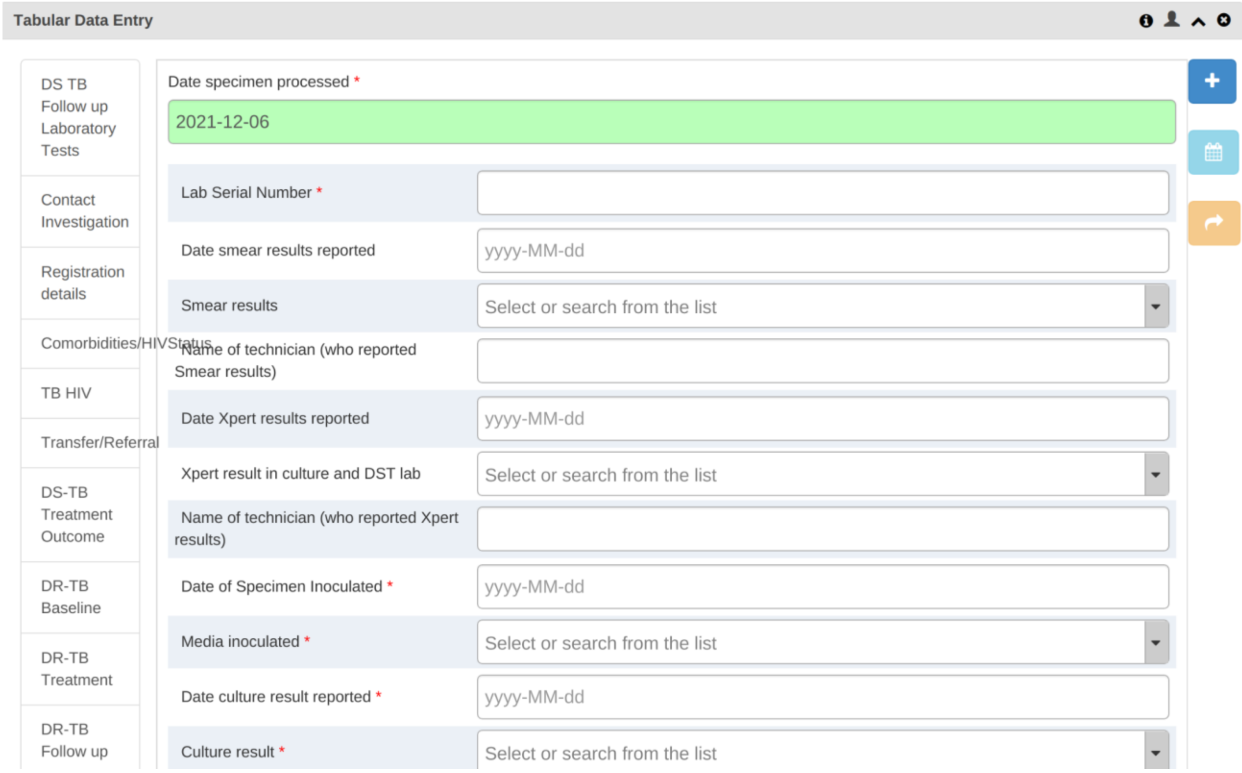


Figure 37: Result for Culture stage screen

8. Enter culture results
9. Click Complete to save.
10. Select Result for DST and Date specimen processed.

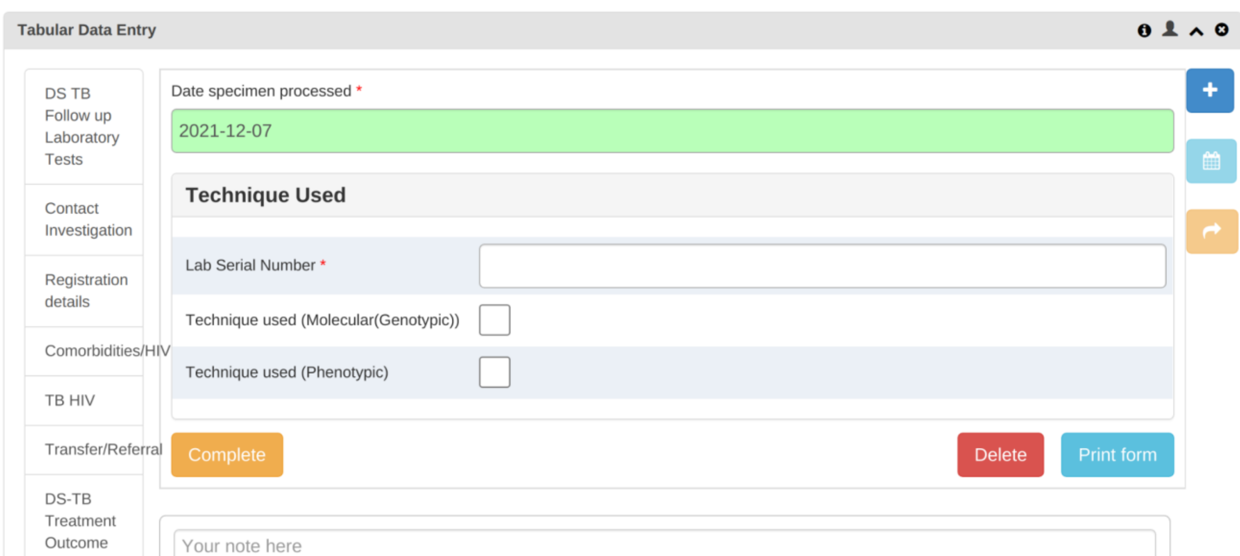


Figure 38: Result for DST stage screen

11. Enter lab serial number.
12. Select the technique used and fill in appropriate results

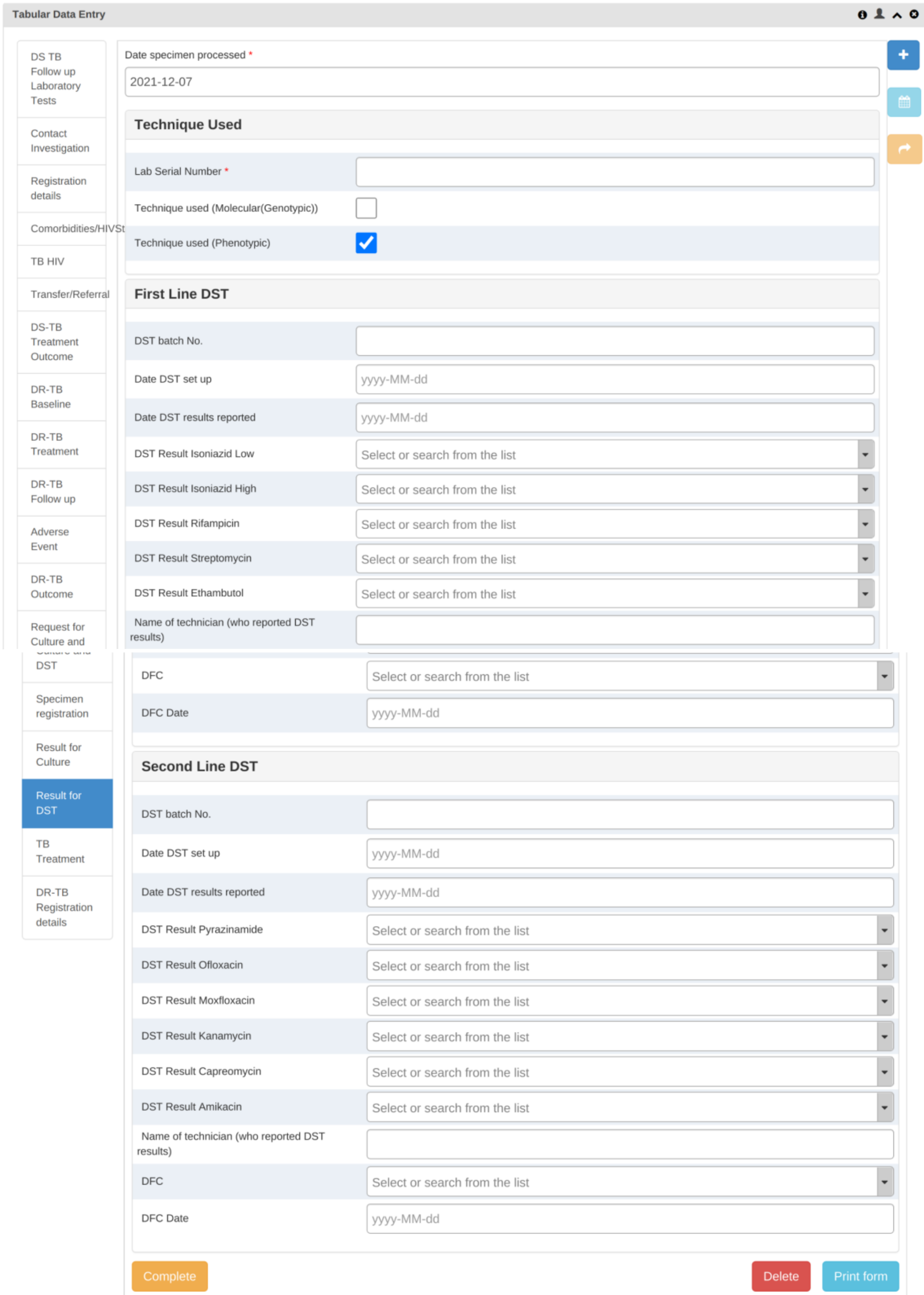


Figure 39: Phenotypic Technique

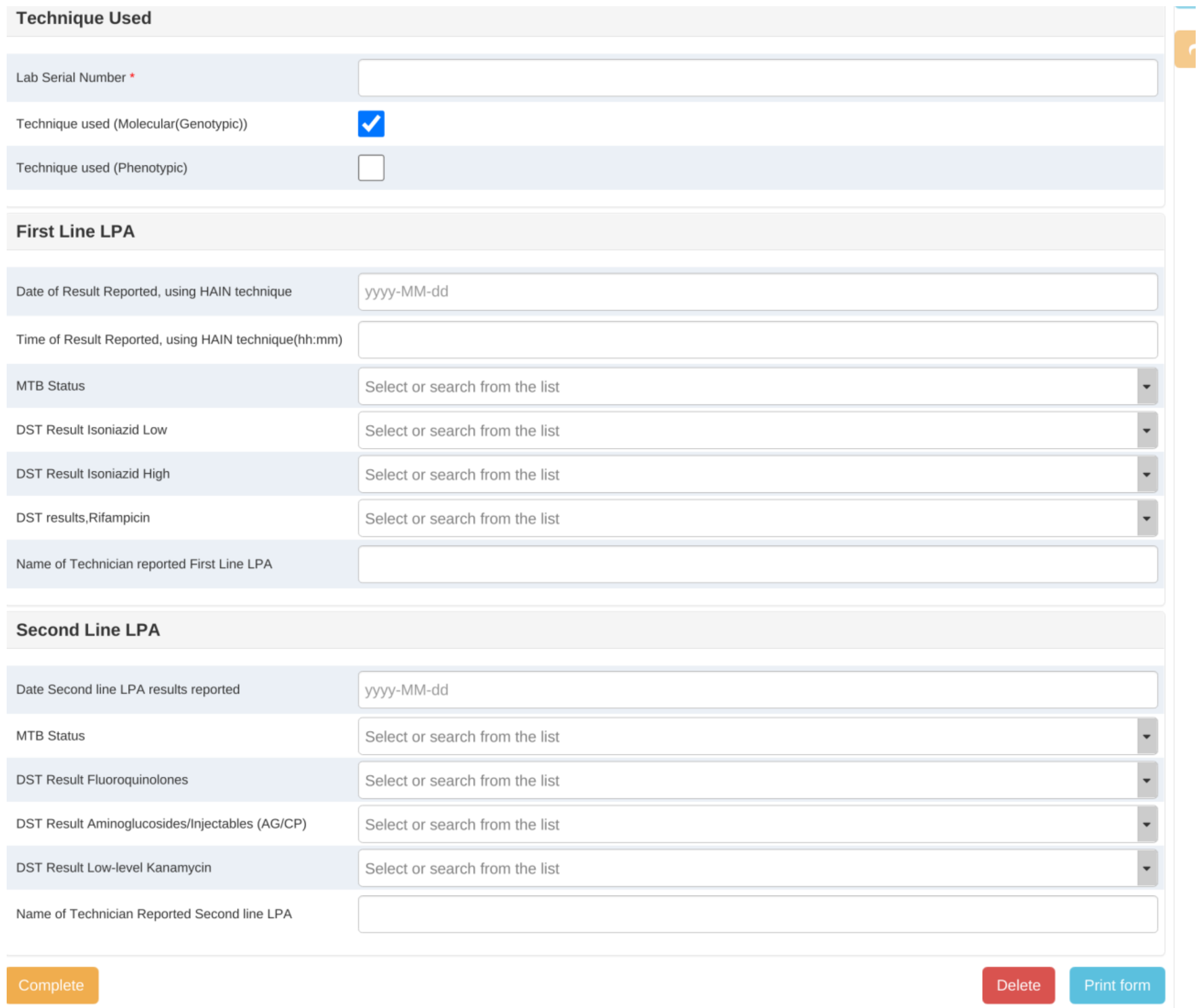


Figure 40: Genotypic Technique

13. Click Complete to save.

4.10 Recording DR-TB Treatment Outcome

Treatment outcome can occur at the mid of treatment or at the end of treatment course. To fill in the treatment outcome do the following:

1. Go to the DR-TB outcome stage then select Outcome date

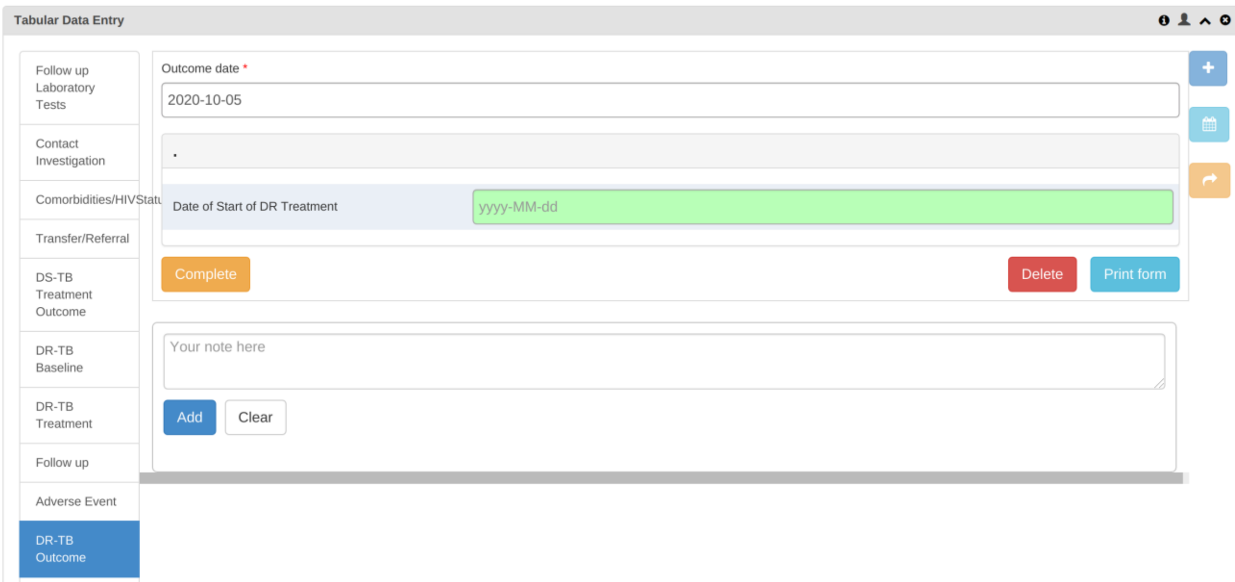


Figure 41: Recording DR-TB Treatment outcome

2. Select Date of Start of DR Treatment the Number of Days in Treatment will be automatically calculated to allow the user to select a specific outcome.

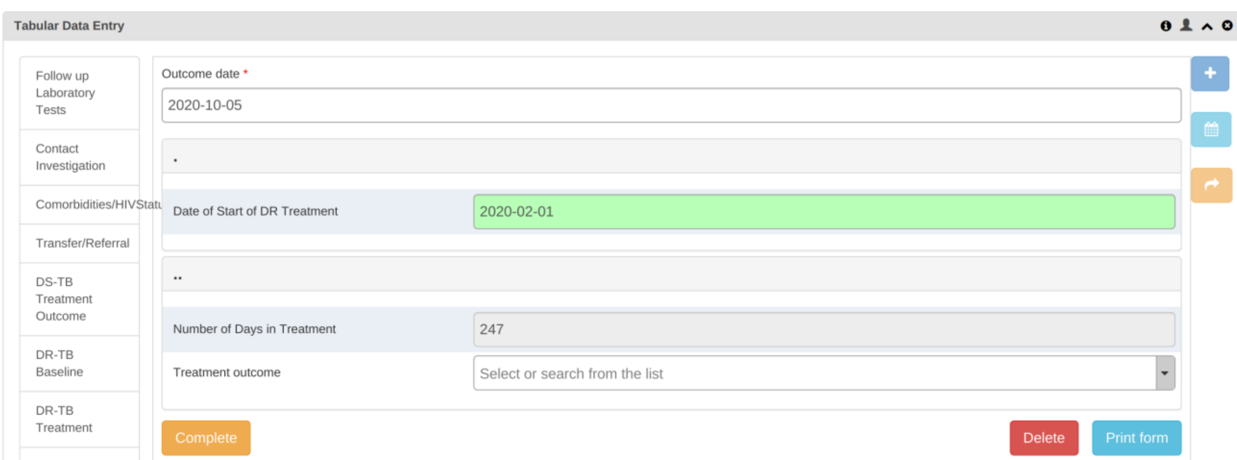


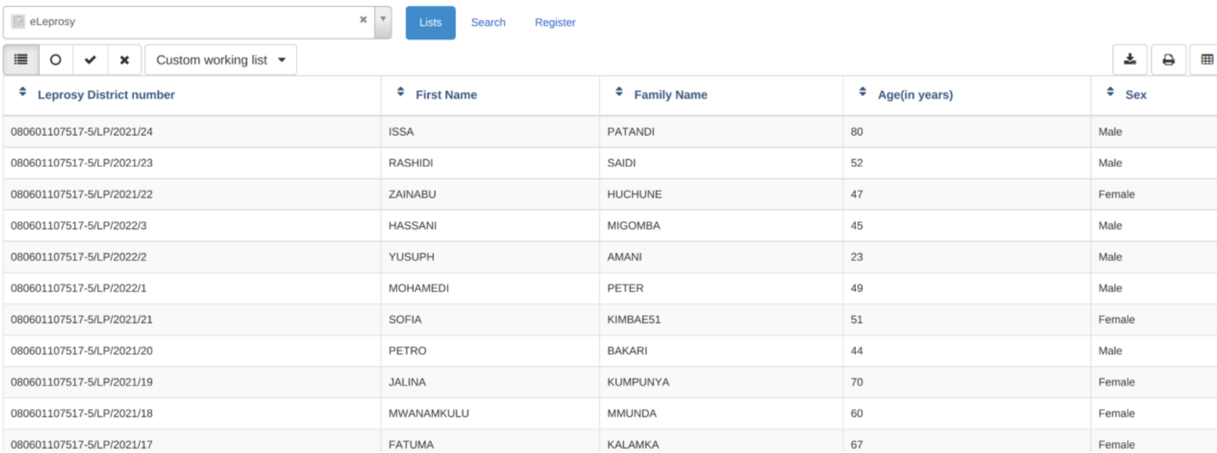
Figure 42: Recording DR-TB Treatment outcome

3. Select appropriate Treatment outcome .
4. Click Complete to save the outcome.

4.11 Entering records into eLeprosy Register

To enter data into Leprosy Register do the following:

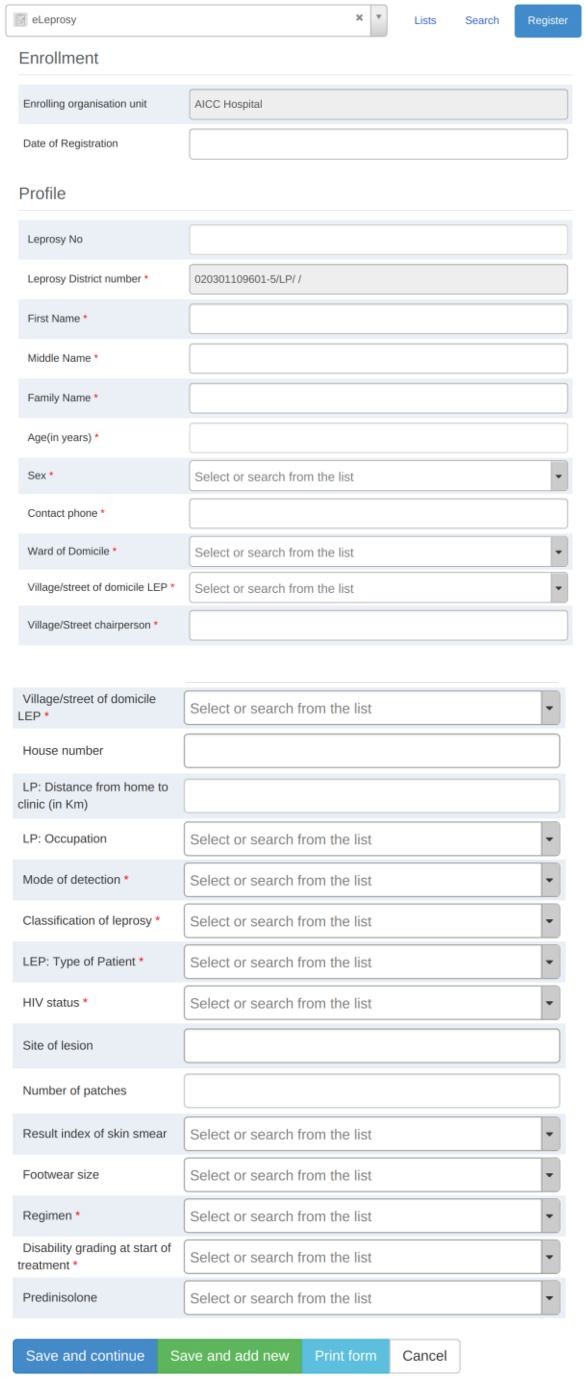
1. Select eLeprosy Register from the list of registers.
2. eLeprosy register will open and display a list of cases that have been registered in it based on the selected organization unit or nothing if there is no case registered.



Leprosy District number	First Name	Family Name	Age(in years)	Sex
080601107517-5/LP/2021/24	ISSA	PATANDI	80	Male
080601107517-5/LP/2021/23	RASHIDI	SAIDI	52	Male
080601107517-5/LP/2021/22	ZAINABU	HUCHUNE	47	Female
080601107517-5/LP/2022/3	HASSANI	MIGOMBA	45	Male
080601107517-5/LP/2022/2	YUSUPH	AMANI	23	Male
080601107517-5/LP/2022/1	MOHAMEDI	PETER	49	Male
080601107517-5/LP/2021/21	SOFIA	KIMBAE51	51	Female
080601107517-5/LP/2021/20	PETRO	BAKARI	44	Male
080601107517-5/LP/2021/19	JALINA	KUMPUNYA	70	Female
080601107517-5/LP/2021/18	MWANAMKULU	MMUNDA	60	Female
080601107517-5/LP/2021/17	FATUMA	KALAMKA	67	Female

Figure 43: Leprosy Cases registered in the system for selected Organization unit.

3. Click on the register button to register a new Leprosy case, registration form will open for filling the patient's demographic information as shown in figure 43.
4. Select the appropriate registration date and continue entering enrollment data.



eLeprosy | Lists | Search | Register

Enrollment

Enrolling organisation unit	AICC Hospital
Date of Registration	

Profile

Leprosy No	
Leprosy District number *	020301109601-5/LP/ /
First Name *	
Middle Name *	
Family Name *	
Age(in years) *	
Sex *	Select or search from the list
Contact phone *	
Ward of Domicile *	Select or search from the list
Village/street of domicile LEP *	Select or search from the list
Village/Street chairperson *	

Village/street of domicile LEP *	Select or search from the list
House number	
LP: Distance from home to clinic (in Km)	
LP: Occupation	Select or search from the list
Mode of detection *	Select or search from the list
Classification of leprosy *	Select or search from the list
LEP: Type of Patient *	Select or search from the list
HIV status *	Select or search from the list
Site of lesion	
Number of patches	
Result index of skin smear	Select or search from the list
Footwear size	Select or search from the list
Regimen *	Select or search from the list
Disability grading at start of treatment *	Select or search from the list
Predinisolone	Select or search from the list

Save and continue | Save and add new | Print form | Cancel

Figure 44: The Leprosy Case Enrolment Screen

5. Click on the "Save and continue" to save enrolment (registration) of the Leprosy case and continue entering further data related to the Leprosy case as shown in the figure 44.

Please note the following:

- *You can click on "Save and add new" to continue enrolling other cases for the same organization unit and later you can get back to enter further stages of each case one after another.*

6. On Transfer/POD select Transfer/POD Date.

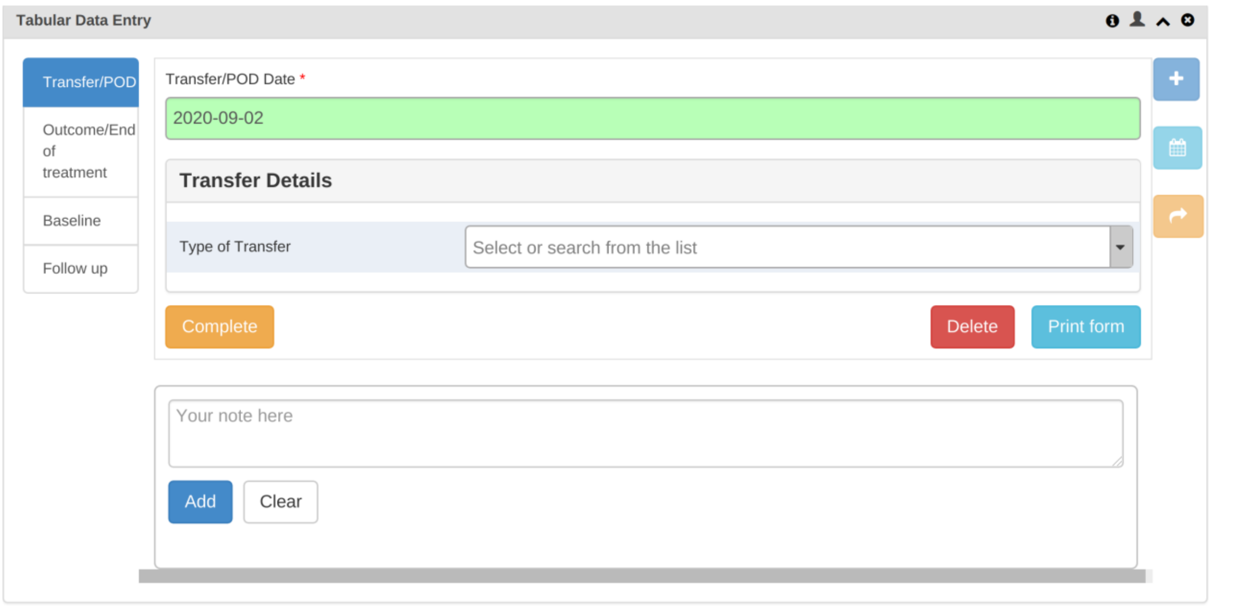


Figure 45: Recording Clinical details of a Leprosy Case

7. Upon selecting the date, a new section will appear where a user can select Type of Transfer

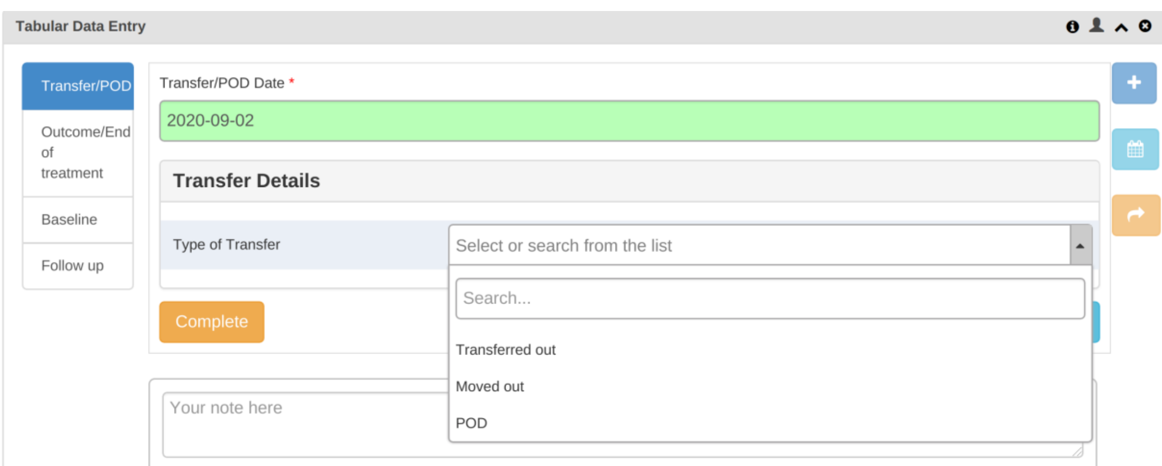


Figure 46: Transfer/POD stage screen

8. Select appropriate Type of transfer and follow the steps highlighted on section 4.3.1 and 4.3.2 for Moved out and Transferred out respectively.

4.12 Leprosy Treatment Outcome

1. Go to Outcome/End of treatment and select outcome date.

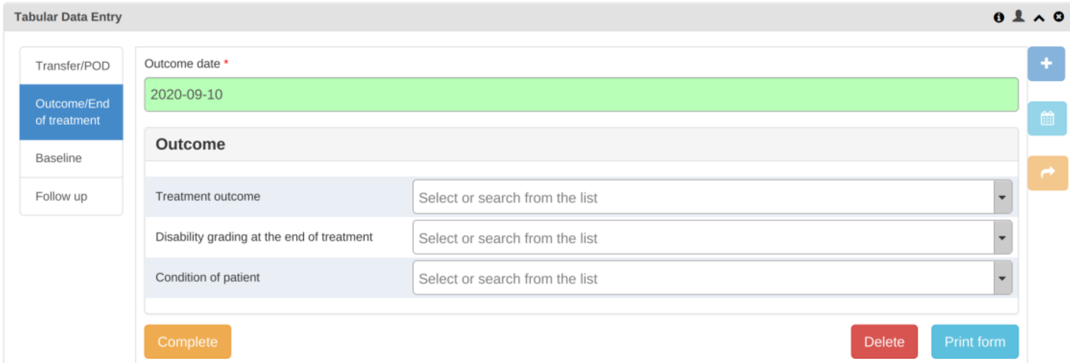


Figure 47: Leprosy treatment outcome screen

2. Select Treatment outcome, Disability grading and condition of the patient.
3. Click Complete to save the details.

4.13 Enrolling Leprosy case into POD treatment

A leprosy case that has shown some degree of disability will need to be enrolled into a Prevention of Disability (POD) treatment so as to enable close follow up of the patient during the whole treatment phase. To enroll Leprosy case intoPrevention of Disability treatment do the following:

1. Select POD on Type of Transfer

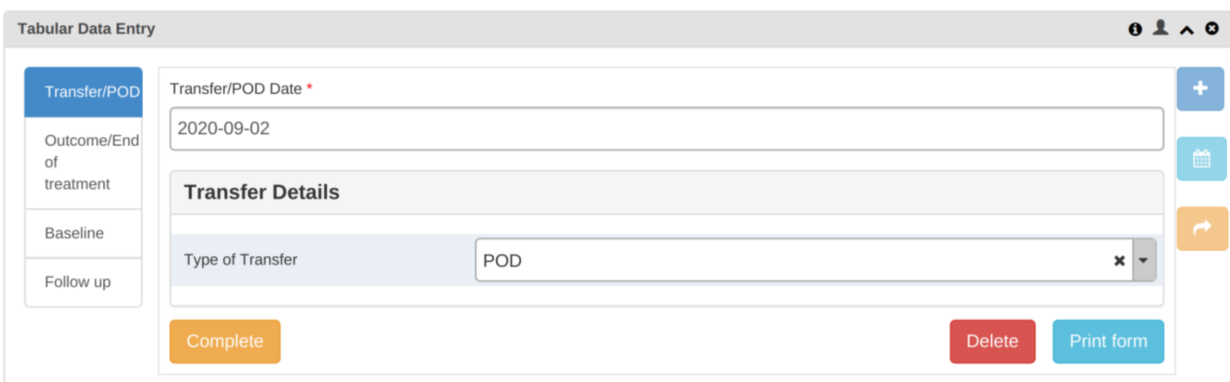


Figure 48: Transfer/POD stage screen

2. Go to Baseline stage and select baseline result date
3. Fill in all the details of Baseline stage.
4. Click Complete to save the details.

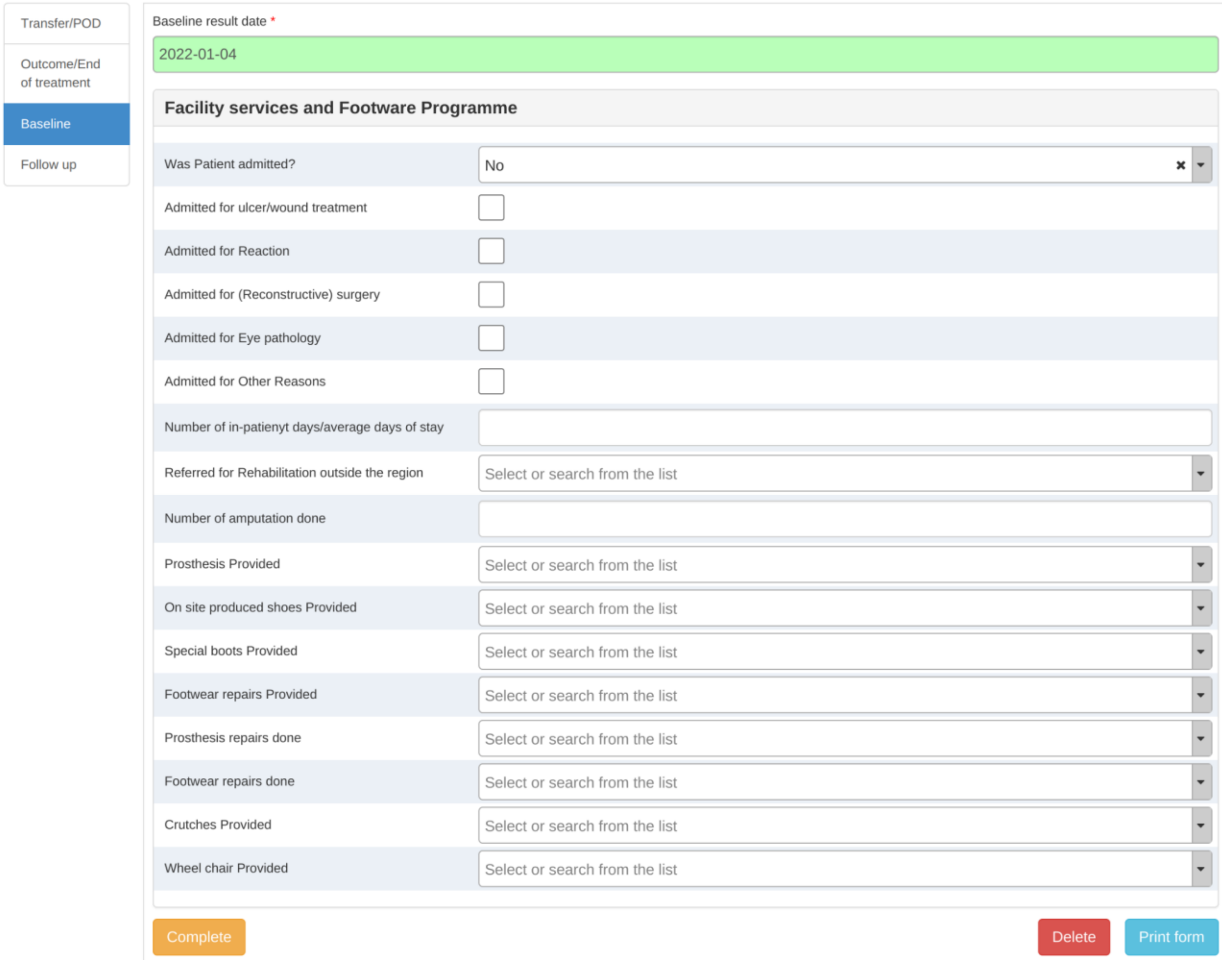


Figure 49: POD Baseline stage screen

5. Go to the Follow up stage and select Date of follow up.
6. Fill in follow up details and Complete to save.

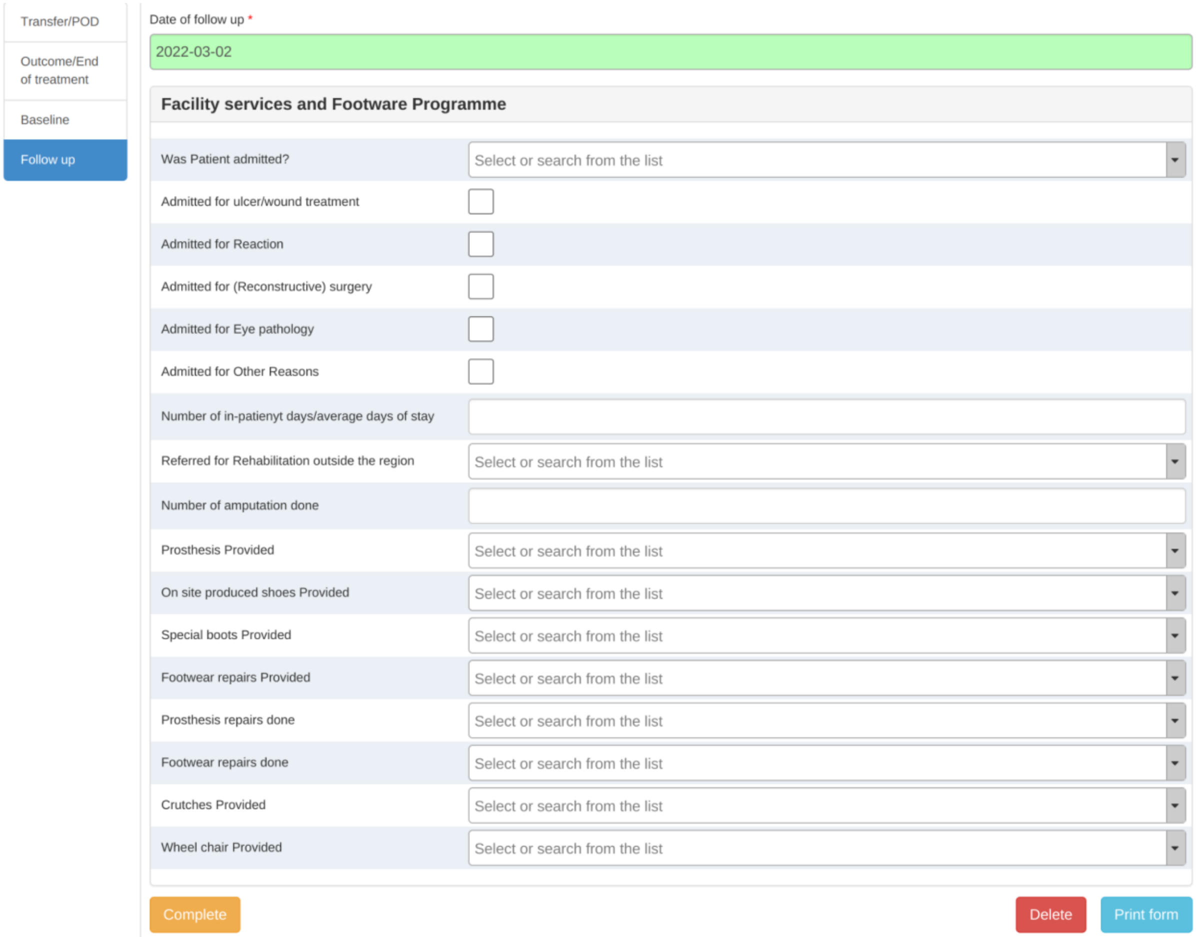


Figure 50: POD Follow up stage screen

5 Reports

5.1 Introduction to Reporting Functionality

There are several ways to view and use the data through reports. A report in this case refers to different presentations of data i.e. charts, graphs, tables and others. The reporting module in DHIS 2 provides a range of reporting alternatives, and this section will explain how eTL Register uses some of them to view and analyze data.

1. **Standard reports**: Standard reports are listings or summary tables of selected indicator(s) for a particular organization unit and period. These reports can also combine multiple tables and charts in the same report and be made available as one-click reports that are very easy to use. These reports can be downloaded as PDF files which makes them ideal for printing as well as sharing offline.
2. **Dashboard:** The fastest way to view TB and Leprosy indicators. Essentially, the Dashboard is a tool to visualize updated charts as well as shortcuts to your favorite reports, report tables, and map views. Here you can visualize TB and Leprosy indicators in charts.
3. **Pivot Tables:** The built-in pivot table tool is a web-based tool to display indicator data by organization unit and period in a typical pivot table view and allows for pivoting manipulations of the tables. It allows for large amounts of data to be downloaded offline for analysis as well.
4. **Data Visualizer:** Do flexible visualizations of your data as charts and data tables. Any number of indicators and data elements can be included. Several chart types are available, such as column, stacked column, line, area and pie charts. The charts can be saved in order to be easily retrieved later and can also be put on your personal dashboard. Charts can be downloaded as image and PDF files to your local computer.
5. **GIS**: Present and analyze your data using thematic maps. You can view both data elements and indicators and given that you have coordinates for all your organization units you can drill down the hierarchy and view maps for all levels from country polygons to facility points. See the separate chapter on GIS for more details. All the map information is built into the system and all you need to do is to register coordinates for your organization units and the maps will be available.

5.2 Standard Report

You access the available TB and Leprosy standard reports through the following steps:

1. Go to Apps
2. Select Reports.
3. In the report menu, click Standard Report.
   NOTE: The report sub menu found in the centre has the same options as those found in the left but with some description. Just click Standard Report. A list of all predefined standard reports will appear.

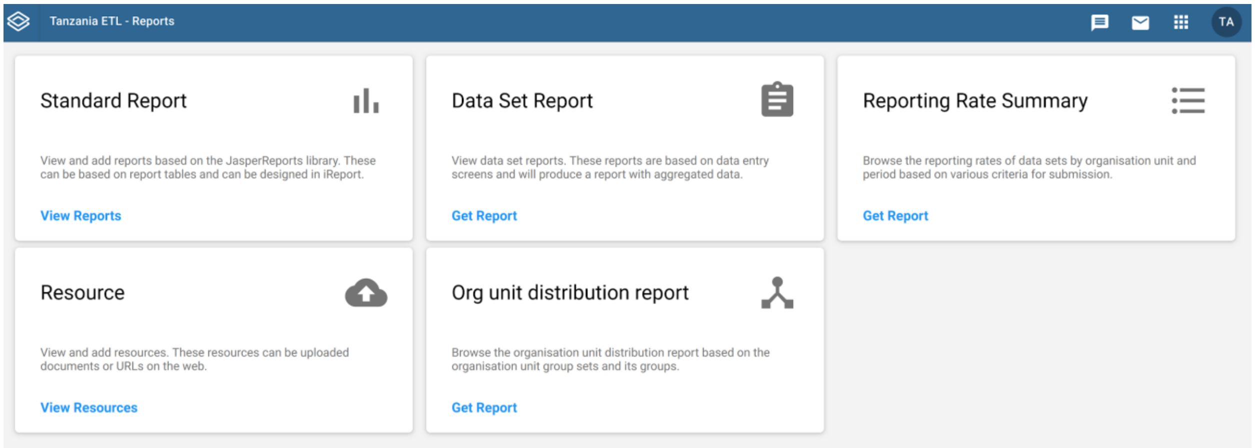


Figure 51: Selecting Standard Report

4. A list of all predefined reports will appear in the main window. For instance, if you are looking for the TB and TB/HIV cases notified report and it is not in the list you can start typing the name (e.g. TB and TB/HIV) at the 'Search' text box and the report will appear.

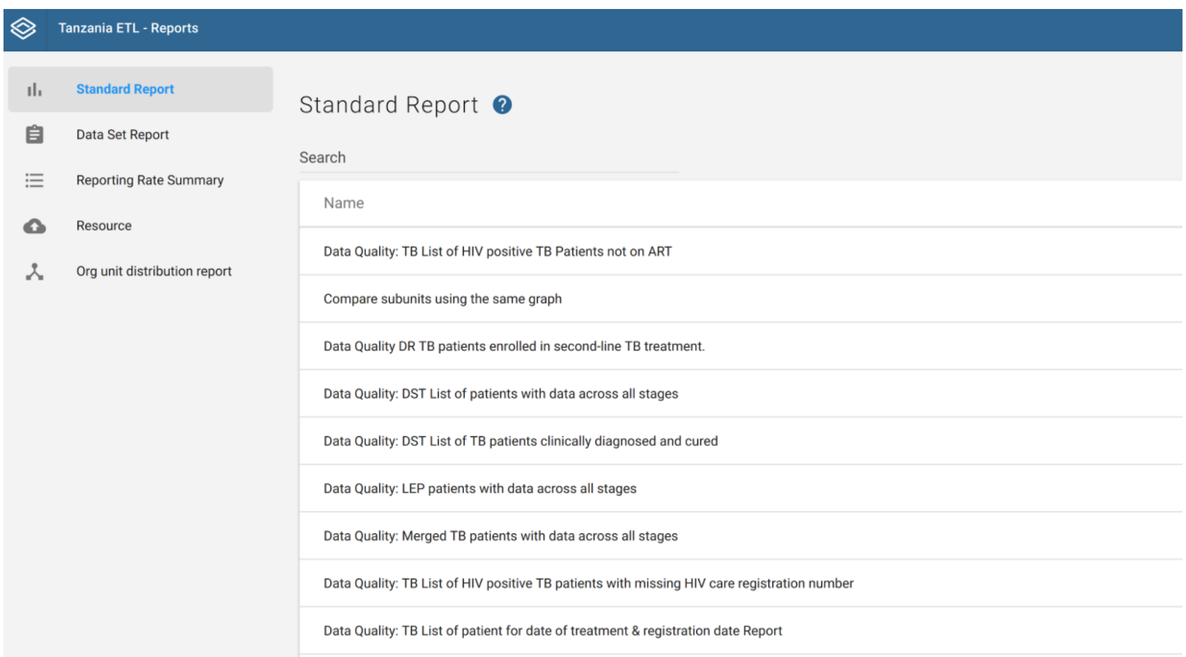


Figure 52: List of Standard Reports

5. Click on the report from the list (TB and TB/HIV cases notified report) to run/view a report and a context menu will appear giving your option to create report output.

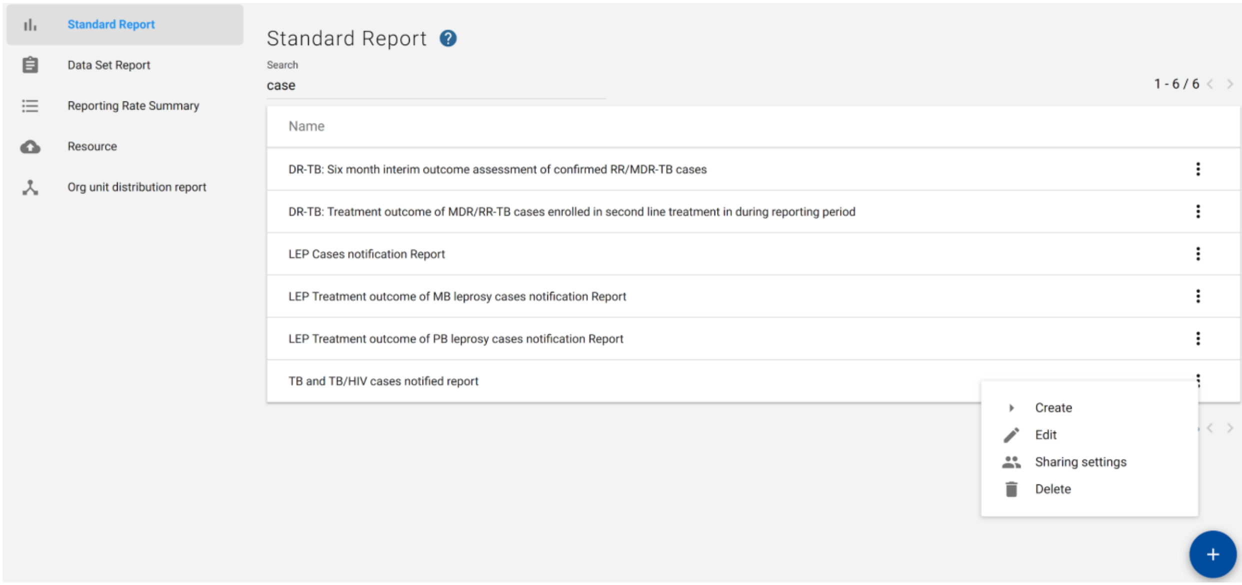


Figure 53: Selecting standard report of your preference

6. Click on 'Create' and you will then see a report parameter window where you must select the values needed for the organization unit and/or reporting period, depending on what has been defined in the underlying report table(s).
7. Click on 'Generate Report' when you are ready or click 'Cancel' to select a different report.

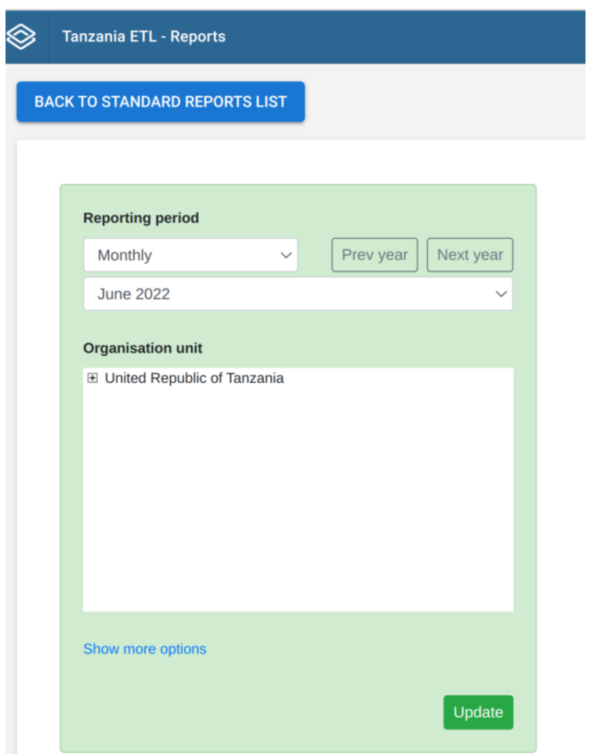
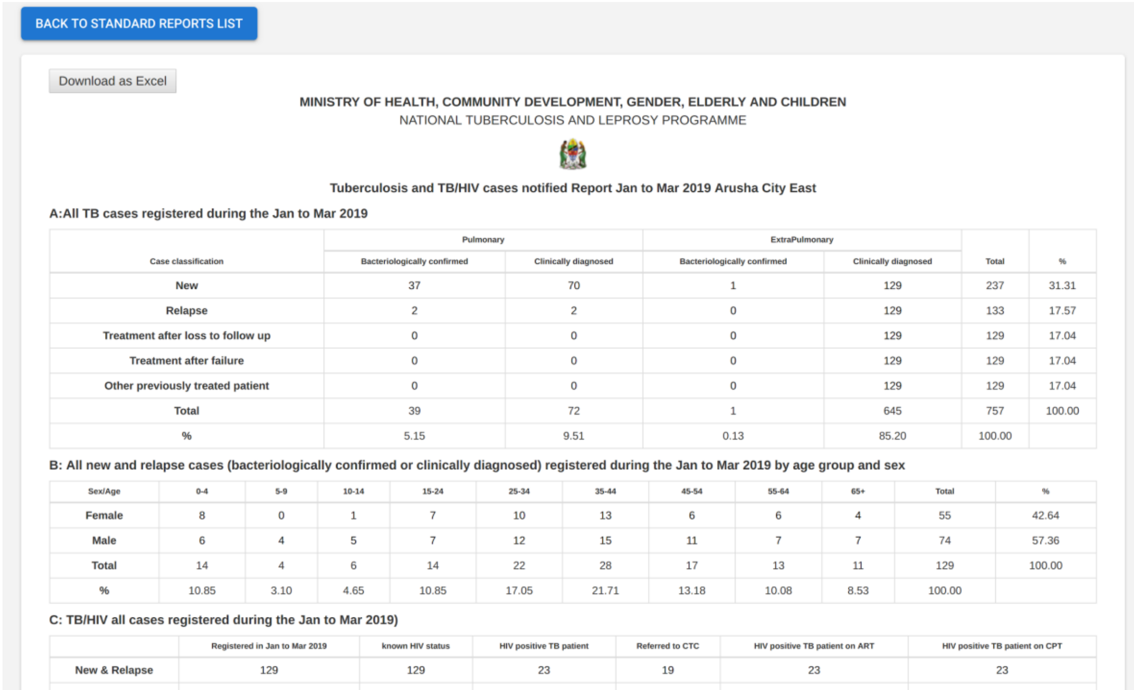


Figure 54: Selecting reporting parameters for Period and Organization Unit

8. The report will either appear directly in your browser or be available as a .pdf file for

download, depending on your browser settings for handling pdf files.



BACK TO STANDARD REPORTS LIST

Download as Excel

MINISTRY OF HEALTH, COMMUNITY DEVELOPMENT, GENDER, ELDERLY AND CHILDREN

NATIONAL TUBERCULOSIS AND LEPROSY PROGRAMME

Tuberculosis and TB/HIV cases notified Report Jan to Mar 2019 Arusha City East

A:All TB cases registered during the Jan to Mar 2019

	Pulmonary		ExtraPulmonary			
Case classification	Bacteriologically confirmed	Clinically diagnosed	Bacteriologically confirmed	Clinically diagnosed	Total	%
New	37	70	1	129	237	31.31
Relapse	2	2	0	129	133	17.57
Treatment after loss to follow up	0	0	0	129	129	17.04
Treatment after failure	0	0	0	129	129	17.04
Other previously treated patient	0	0	0	129	129	17.04
Total	39	72	1	645	757	100.00
%	5.15	9.51	0.13	85.20	100.00	

B: All new and relapse cases (bacteriologically confirmed or clinically diagnosed) registered during the Jan to Mar 2019 by age group and sex

Sex/Age	0-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total	%
Female	8	0	1	7	10	13	6	6	4	55	42.64
Male	6	4	5	7	12	15	11	7	7	74	57.36
Total	14	4	6	14	22	28	17	13	11	129	100.00
%	10.85	3.10	4.65	10.85	17.05	21.71	13.18	10.08	8.53	100.00	

C: TB/HIV all cases registered during the Jan to Mar 2019)

	Registered in Jan to Mar 2019	known HIV status	HIV positive TB patient	Referred to CTC	HIV positive TB patient on ART	HIV positive TB patient on CPT
New & Relapse	129	129	23	19	23	23
Previous cases	0	0	0	0	0	0

Figure 55: Part of the standard report after selecting report parameters

9. Click “Download as Excel” to export the report into excel.
10. Click “Back to standard reports list” to close the current report and select another report.

Note: *For any requirement of reports which are not in the list and not among other types of reports in the system, please communicate with the supporting technical team so that they define it for your use.*

5.3 How to use Pivot Table

Pivot Table is one of the data analysis tools for the TB and Leprosy indicators. It is a dynamic tool for data analysis which lets you quickly summarize and arrange data according to its dimensions. The pivot table module enables users to create pivot tables, thus analysing and presenting data in tabular formats using the available data dimensions in the ETL Register.

5.3.1 Accessing the Pivot Table

To open the Pivot Table, follow these steps:

1. Hover over the Apps button. A drop down menu will appear listing the apps
2. Click on the Pivot Table option.
3. If Pivot Table does not appear in the list after step 1 above, type "Pivot Table" on the search app text box or click on "More apps" or use up and down arrow to locate Pivot Table then continue with step 2.

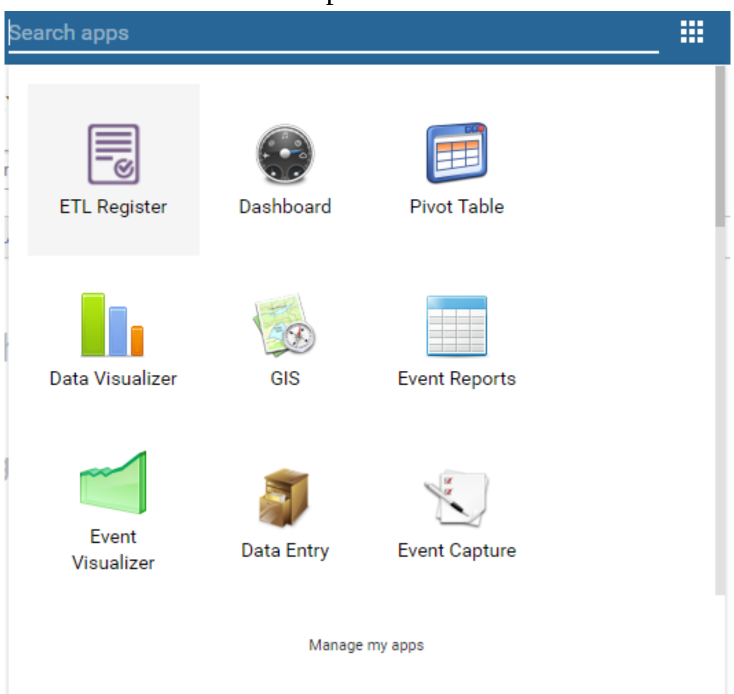


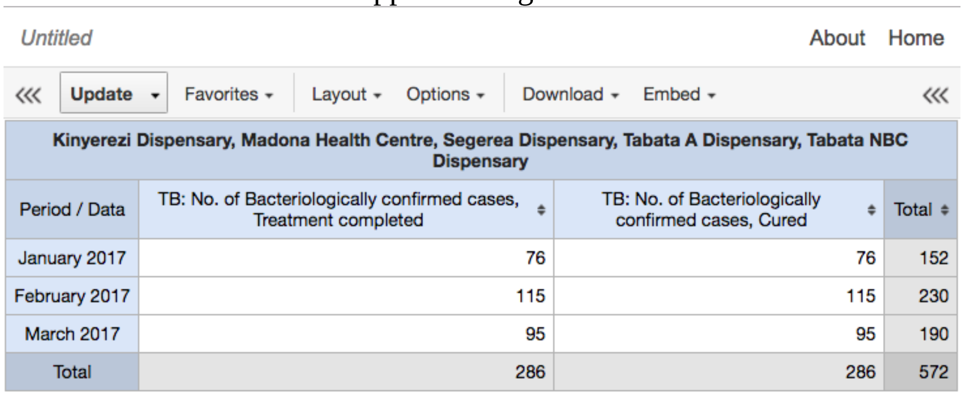
Figure 56: Accessing Pivot Table

5.3.2 Creating a pivot table

To create the pivot table do the following:

1. Go to the data section.
2. Select Program indicator.
3. Select the required Register from the drop down as a program eg. TB Register;
4. Select the required program indicators.
5. Click on periods.

6. Select the period for which you want to view data.
7. Click on Organization unit, select the required organization unit then click update to view the table. As appears in figure 57.



Kinyerezi Dispensary, Madona Health Centre, Segerea Dispensary, Tabata A Dispensary, Tabata NBC Dispensary			
Period / Data	TB: No. of Bacteriologically confirmed cases, Treatment completed	TB: No. of Bacteriologically confirmed cases, Cured	Total
January 2017	76	76	152
February 2017	115	115	230
March 2017	95	95	190
Total	286	286	572

Figure 57: Generated Pivot Table

5.4 How to Use Data Visualizer

Data Visualizer is one of the data analysis tools of TB and Leprosy indicators. It enables the user to manage data analysis dynamically by traversing through the parameters of analysis. One can freely select the contents like indicators, data elements, periods and organization units.

5.4.1 Accessing the Data Visualizer

To open the Data Visualizer, follow these steps:

1. Hover over the Apps button. A drop down menu will appear listing the apps.
2. Click on the Data Visualizer option.
3. If Data Visualizer does not appear in the list after step 1 above, type "Data Visualizer" on the search app text box or click on "More apps" or use up and down arrow to locate Data Visualizer then continue with step 2.

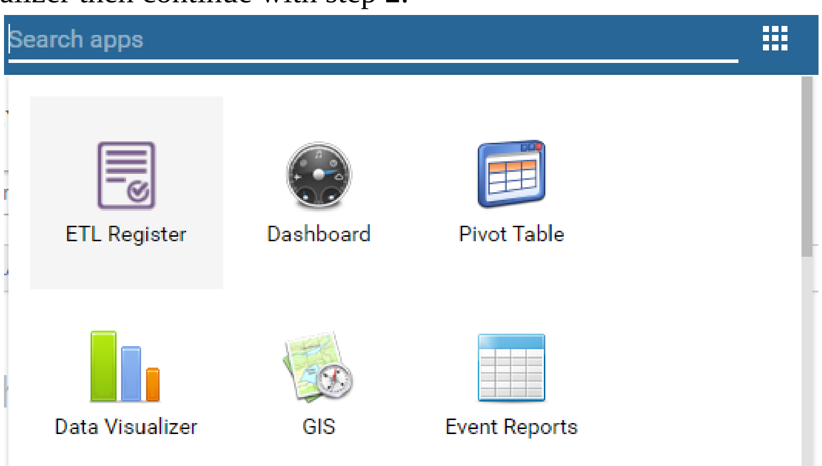


Figure 58: Accessing Data Visualizer

5.4.2 Creating a chart.

To create the chart do the following:

1. Go to the data section.
2. Select Program indicator.
3. Select the required Register from the drop down as a program eg. TB Register;
4. Select the required program indicators.
5. Click on periods.
6. Select the period for which you want to view data.
7. Click on Organization unit, select the required organization unit then click update to view the chart created as shown in the example on Figure 59.

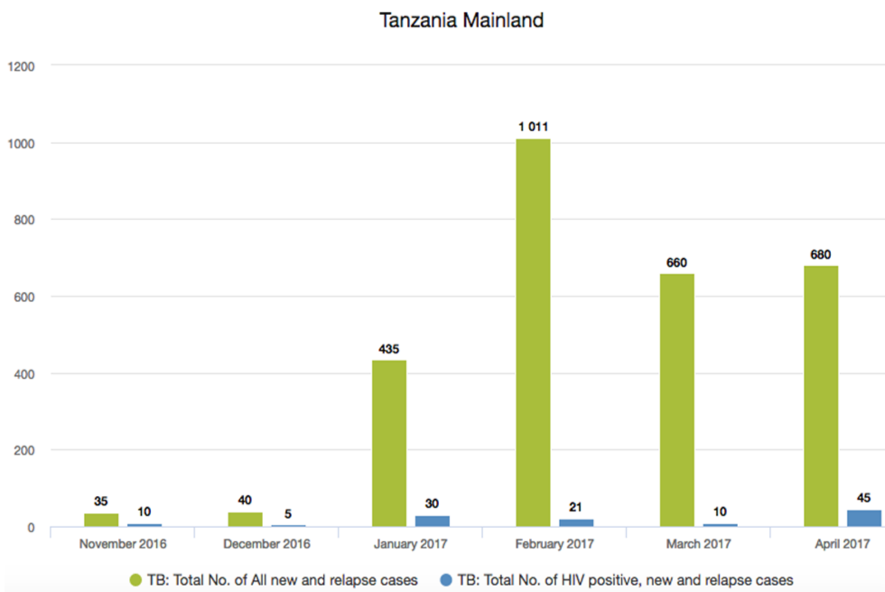


Figure 59: Generated chart

8. When you have set up a chart it is convenient to save it as a favorite for future access. To save a chart

5.5 How to use GIS

Geographical Information System is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical/geospatial data. GIS is applied in modelling of TB and Leprosy reports associating it with geospatial/geographical information, among the uses include:

1. Visualize distributions of TB and Leprosy data per district/region/nation
2. Breakdown of TB and Leprosy services per regions/districts and Identifying geographical barriers and health inequalities

3. Visualize periodic reporting of TB and Leprosy data, that is
    - Monthly
    - Quarterly
    - Semi-annually
    - Annually

5.5.1 Accessing GIS

To open the GIS, follow these steps:

1. Hover over the Apps button. A drop down menu will appear listing the apps.
2. Click on the GIS option.
3. If GIS does not appear in the list after step 1 above, type “GIS” on the search app text box or click on “More apps” or use up and down arrow to locate GIS then continue with step 2.

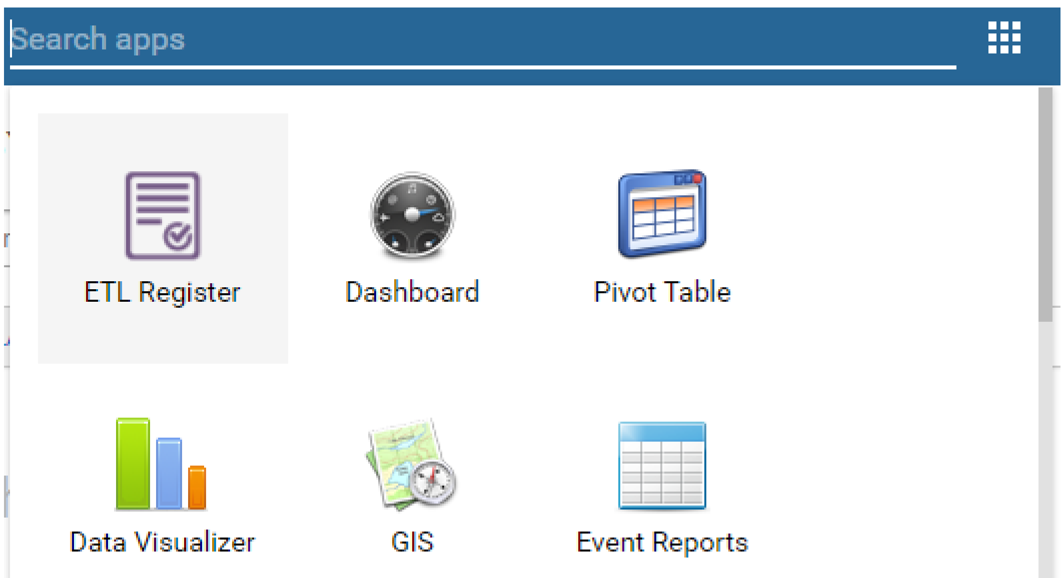


Figure 60: Accessing GIS

5.5.2 Creating a Map

1. Select a layer from the toolbar eg. Thematic layer 1
2. Select data eg. TB: Total No. of all new and relapse cases and Period eg. the year 2017

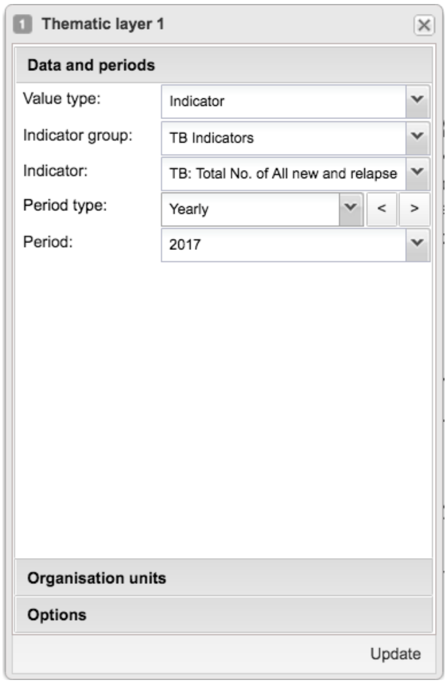


Figure 61: Selecting Map parameters.

3. Select Organization Unit.
4. Click Update to view the map created according to specified parameters.

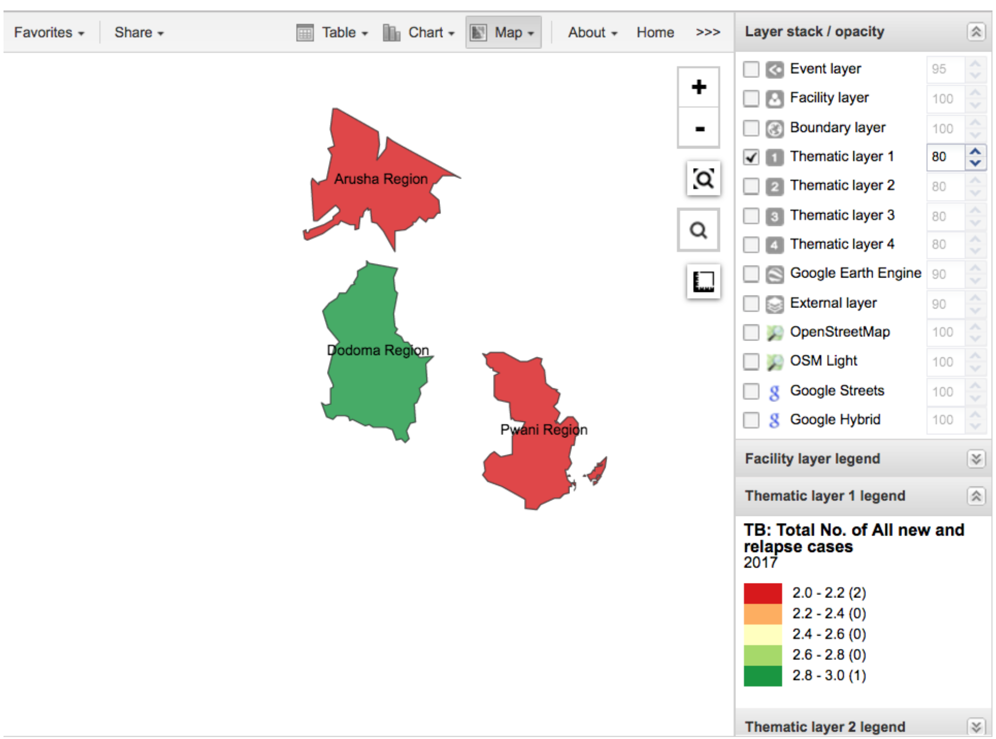


Figure 62: Example of map showing new and relapse cases in Tanzania, 2017

5.6 Favorites

When you have created a table, chart or map it is convenient to save it as a favorite and makes it available for future use. Also, it can be shared with other users as an interpretation or display it on the dashboard. To save as favorite do the following:

1. Click Favorites > Save as.
2. Enter a Name and a Description for your favorite.
3. Click Save.

To open a favorite, follow these steps:

1. Click Favorites > Open.
2. Enter the name of a favorite in the search field, or click Prev and Next to display available favorites page wise.
3. Click the name of the favorite you want to open.

To rename a favorite, these steps:

1. Click Favorites> Rename.
2. Enter the new name for your favorite.
3. Click Update.

To share a favorite, follow these steps:

1. Click Favorites
2. Click Share
3. On the search box, add users or user groups to be given access to the favorite.
4. Click Save.

To write interpretation on a favorite, follow these steps:

1. Click Favorites
2. Click Write interpretation
3. Write a comment, question or interpretation of a favorite.
4. Add user or user group.
5. Click Share.

To delete a favorite, follow these steps

1. Click Favorites > Delete.
2. Click OK.

6 Dashboard

Dashboards allow users to have quick access to data stored in the system. Dashboard is serving as a landing page once the eTL Register is accessed. Dashboards have a title, description, and any number of dashboard items. The dashboard items can be of many different types, including charts, maps, reports, tables, resources, messages, and text items. Above the dashboard is the control bar, which shows all your available dashboards, including a dashboard search field, and a + button for creating a new dashboard.

The dashboard has two modes: view and edit/create. When you first log in to DHIS2, your most recently used dashboard will be displayed in view mode, if you are on the same computer as you were previously. If you are using a different computer, then the first starred dashboard will be displayed. if there are no starred dashboards, then the first dashboard will be displayed. Starred dashboards always show first in the dashboard list.

The sample dashboards in eTL are accessed from the bar, Figure 63 is an example of a dashboard in the system's home page. To move from one dashboard to another simply click the name of the dashboard. To access more dashboards click the option "Show more" option in the bar.

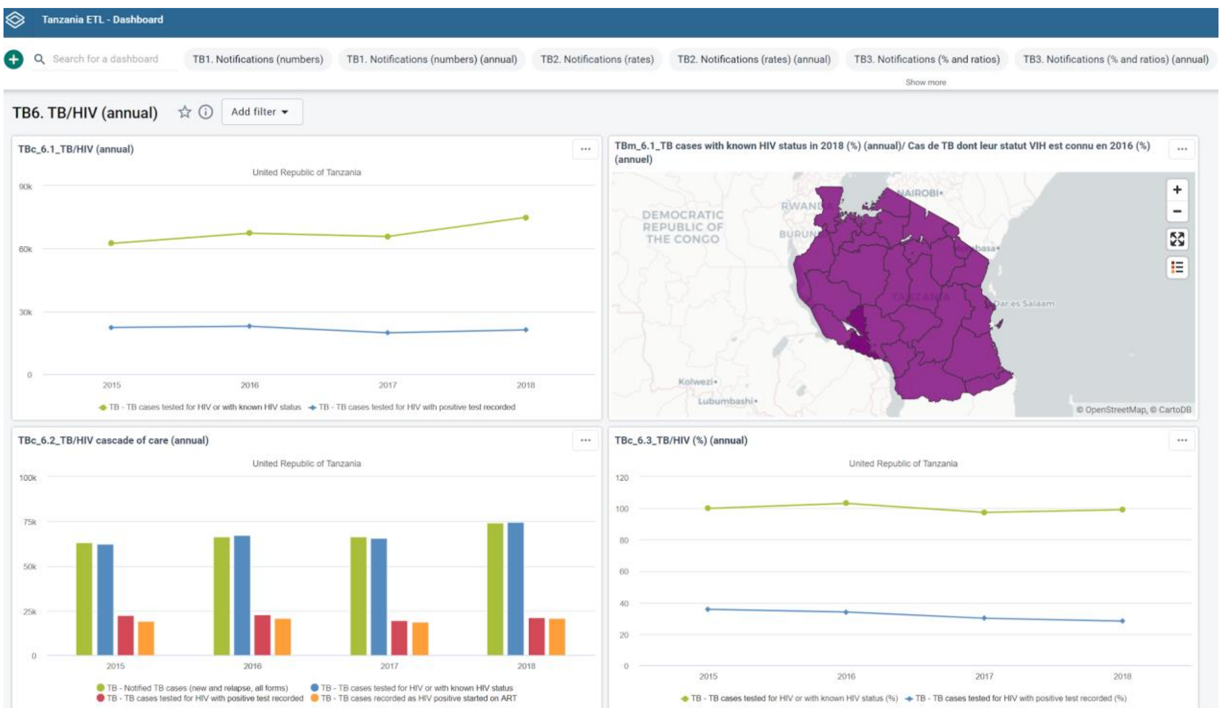


Figure 63: Sample eTL Register dashboard

6.1 Creating a Dashboard

The DHIS2 allows you to create multiple dashboards (more than one dashboard). To create a new dashboard, click the **green +**  button on the left corner of the control bar to go into create mode. Add a title in the text field and description (optional) in the description.

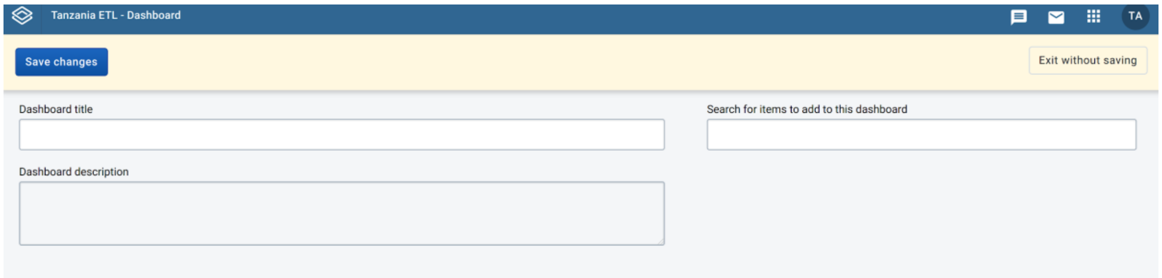


Figure 64: Create a new dashboard

After creating a new dashboard, you can add items to the dashboard by searching from the item selector in the upper right of the dashboard area. The available items are: Pivot table, Charts, maps, report, resources, etc.

6.2 Removing a Dashboard

You can remove an item(s) by clicking on edit and then the red trash at the upper right of the item.

6.3 Saving a Dashboard

When creating or editing a dashboard, changes are only saved when you click the Save changes button in the dashboard edit bar at the top of the page. If you don't want to save your changes, click the Exit without saving button to the upper right. You will then be returned to view mode with the dashboard you were previously viewing.

6.4 Modifying an Existing Dashboard

If you have access rights to edit the currently active dashboard, there will be an EDIT button to the right of the dashboard title in view mode. Click on the Edit button to enter edit mode.

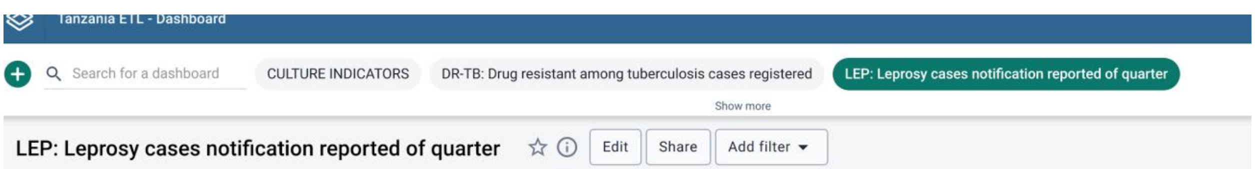


Figure 65: Editing an existing dashboard

6.5 Deleting a Dashboard

If you have access to delete the dashboard, then there will be a Delete button located above the dashboard, when in edit mode. A confirmation dialog will first be displayed to confirm that you want to delete the dashboard.

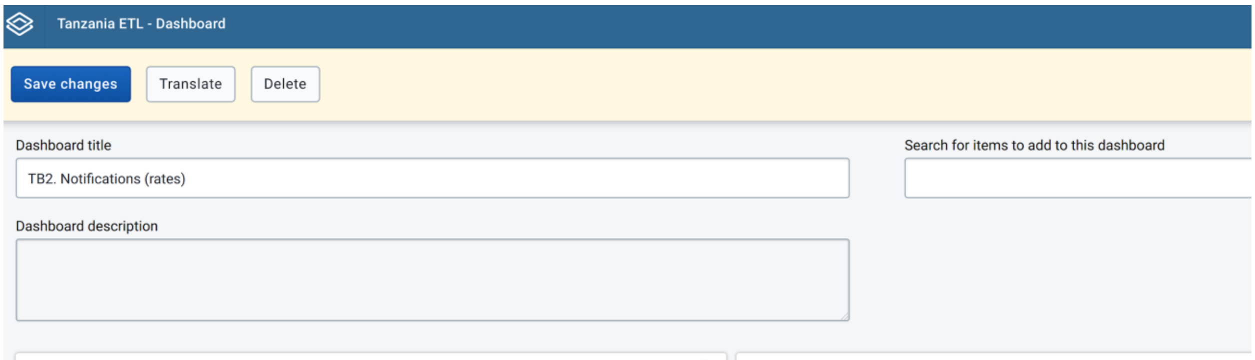


Figure 66: Deleting a Dashboard

6.6 Dashboard items with charts, pivot tables and maps

Maps, pivot tables and charts can be switched between these visualizations in the dashboard. To achieve that click on the buttons in the upper right corner of the item to switch between visualizations.

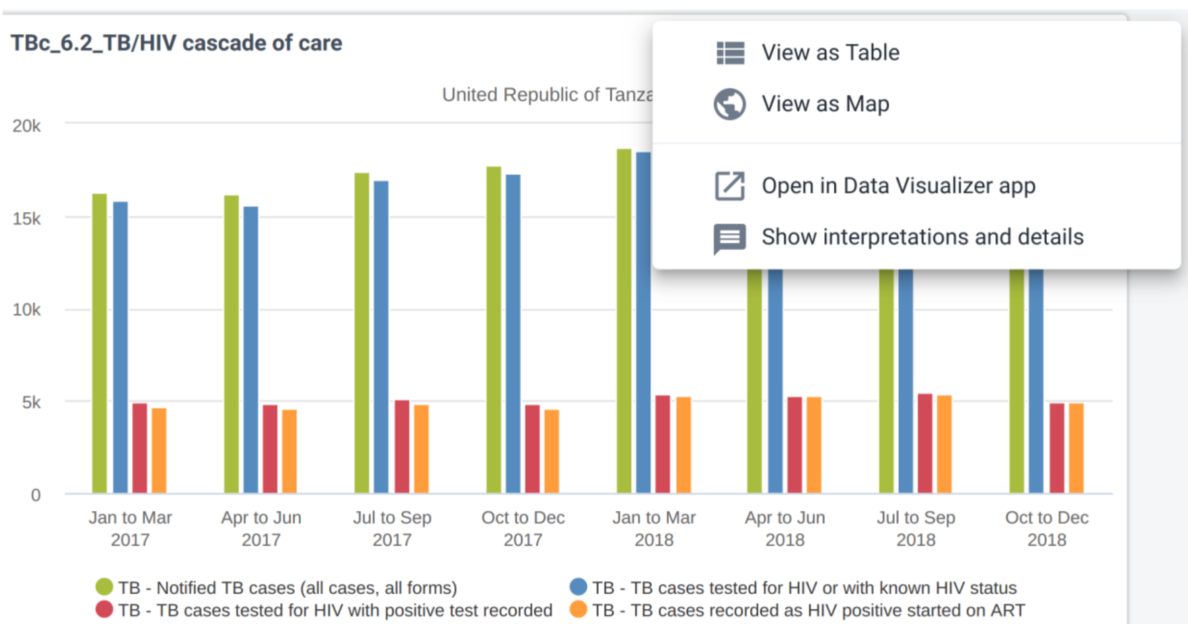


Figure 67: Switching between visualizations

7 Message and feedback

7.1 Message and Feedback Overviews

DHIS2 has functions that will enable you to send messages and feedback to users, user groups and organisation units. The feedback messages are sent to a particular group called the feedback recipient group. Feedback messages can be sent between the users (user-to-user) although it depends on your configuration. The system has the capability of sending system-generated messages. These messages could be triggered by different events such as validation analysis results. To open the message app, click message icon in the header bar or find the Messaging app in the search field.

7.2 Compose a message

In the system, you can compose a message as shown in Figure 65 using the following steps:

1. Click Compose
2. Define who you want to receive the message. You can send a message to organisation units, users and user groups. In the To field you can search for organisation units, users and user groups and select the wished recipients.
3. Type a **subject** and a **message**
4. Click **Send**

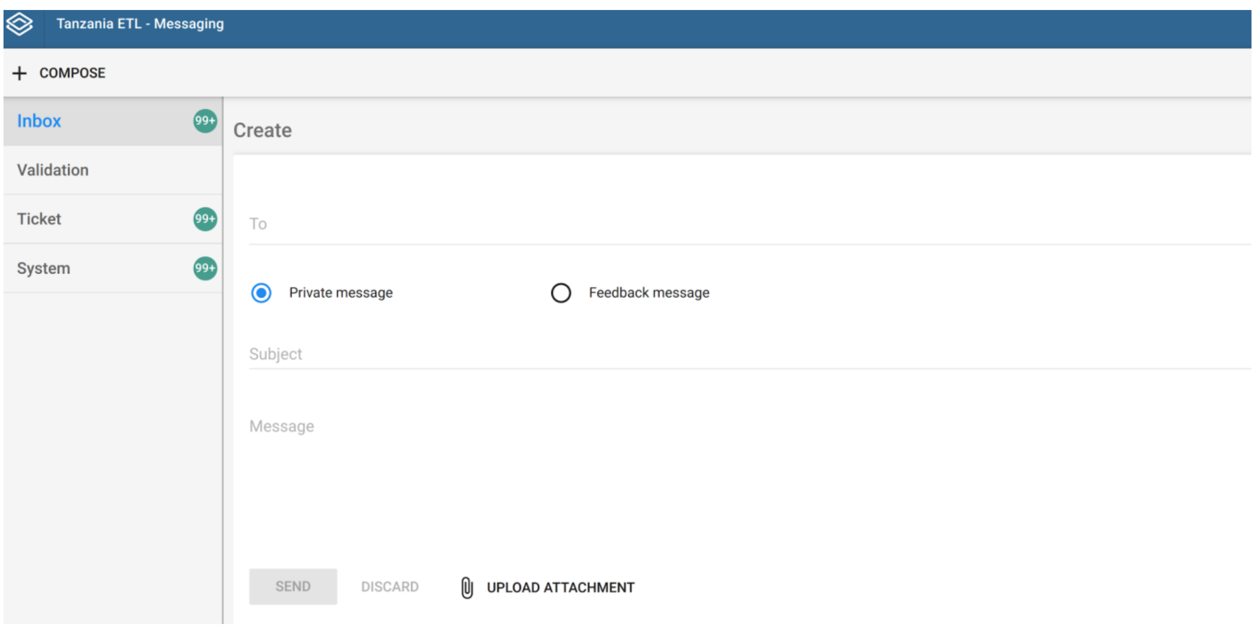


Figure 65: Composing a private message

7.3 Read a message

To read a message, these are the steps:

1. Select the appropriate message type to the left.
2. Click a message.

If the message is part of a conversation, you will see all messages in this conversation.

7.4 Create a feedback message

To create a feedback message:

1. Follow the steps as for composing a message, only select Feedback message instead of entering recipients.
2. The message will be created as a feedback message and will appear in all of the specified users' Ticket folder.

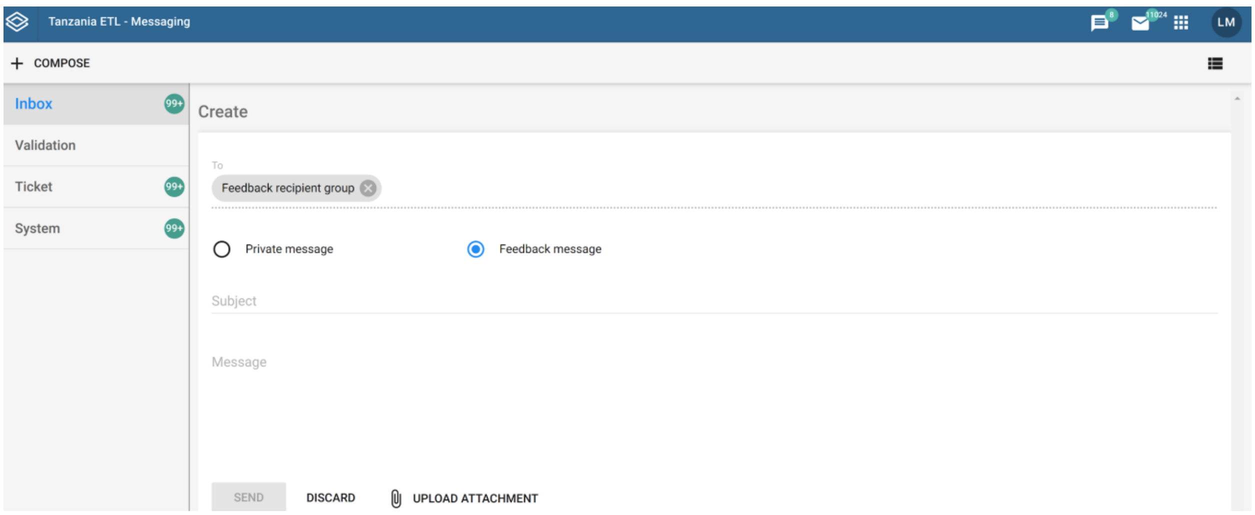


Figure 66:Composing a feedback message

8 EQA Forms

EQA forms are…..

To enter data in the EQA form do the following:

1. Hover/click on the Apps menu displayed in the main menus at the upper right on the left of your name initials. A drop-down menu will appear listing the applications provided by the system.

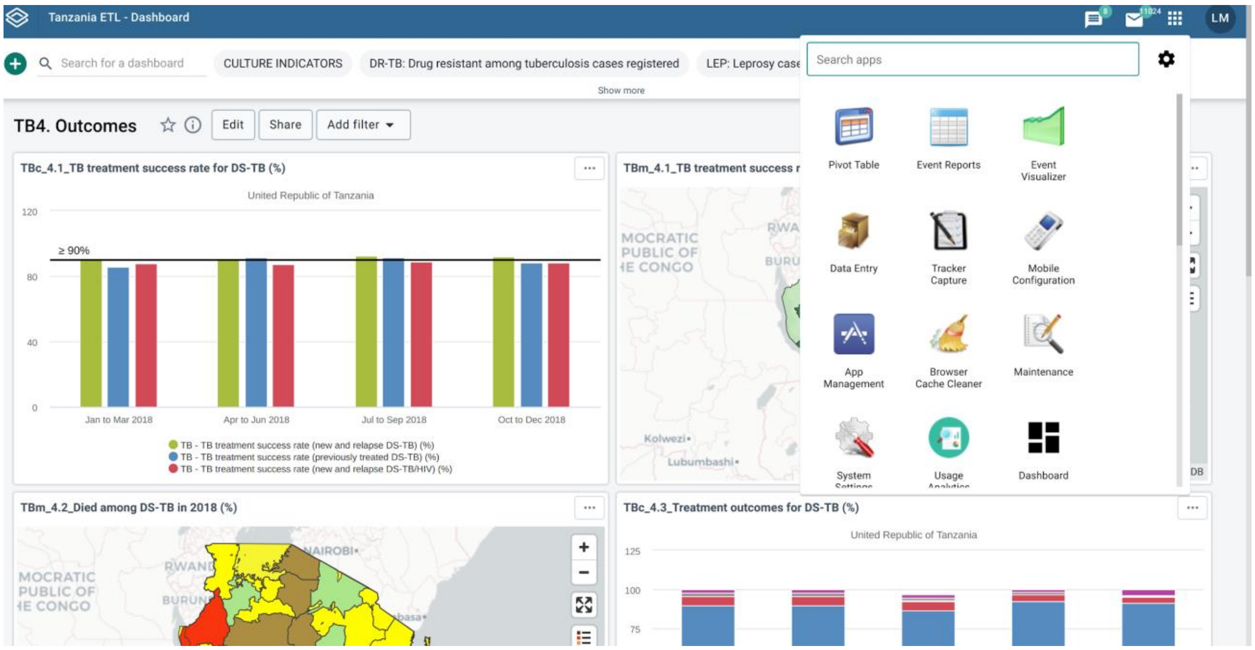


Figure 67: Accessing data entry application

2. Click on the Data Entry app. Upon clicking on the Data Entry app in the list and the data entry screen will be displayed as shown in Figure 68.

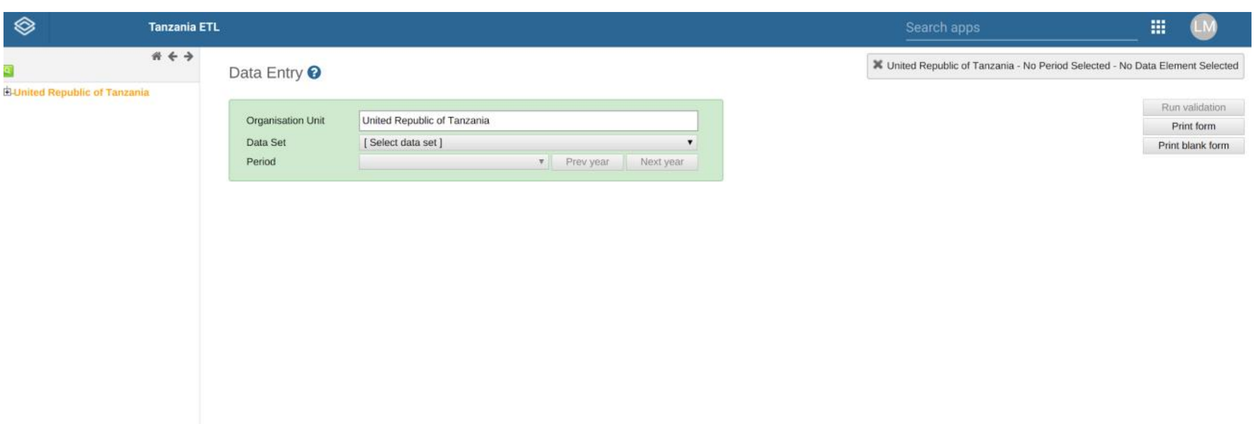


Figure 68: Data entry screen

8.1 Selecting and entering data into EQA form

To start entering data, first open or select the correct form. Then do the following:

1. Select the organization unit (e.g. Central TB Reference Laboratory) you want to register or enter data in the tree menu to the left. Expand and close branches by clicking on the **+/-** symbols.
2. Select a dataset/ data entry form (e.g. Form 3: Re-checking of sputum smear for AFB) from the dropdown list of data sets available to your selected organization unit. The number of datasets is therefore equivalent to the number of forms available.
3. Select a period (e.g. January - March 2020) to register or enter data. The available periods are controlled by the dataset's period type (reporting frequency). You can change a year back or forward by using the Prev year and Next year buttons.

By completing the above steps, you see the selected data entry form as shown in Figure 69.

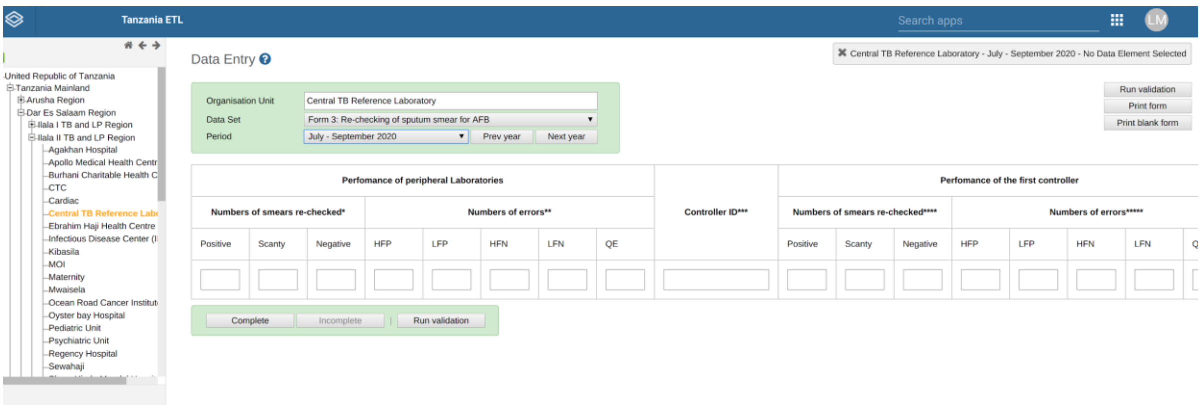


Figure 69:Opening data entry form

4. Start to enter data in the data entry form by clicking inside the field and type the value.

   Please note the following:

   - *A green field means that the values have been saved in the system (on the server).*
   - *A grey field means that the field is disabled and you can't enter a value. The cursor will automatically jump to the next open field.*
   - *To move to the next field, use the Tab key or the Down Arrow key on your keyboard. To move back to the previous field, press Shift+Tab or the Up Arrow key on your keyboard*
   - *The values are saved immediately and do not require any save/finished button click.*
   - *On a slow connection, it might take some time before saving the values.*

5. Click Complete to save the form.

8.2 Enter data offline

Once you are logged into the online eTL Register, you can continue to enter data even if you have an unstable internet connection.

- This functionality works as long as you have logged in the system when there is an internet connection.
- When you are connected to the internet and able to reach the server, the app displays the message at the top of the data entry form as shown in Figure 70.

Figure 70: Online mode on top menu bar

- If you are in data entry form and the connection is cut off/unstable, you can still enter data and these data will be stored on your local computer as shown in Figure 71.
- If the Internet connection is disconnected for some reasons during the data entry process, this will be detected by the application. The message will be displayed informing you that your data will be stored locally as shown in Figure 71.

Figure 71: Offline mode on top menu bar

- When the internet connection is re-established, all data will be sent to the server.
- Once the internet is back, the application detects that a server is online and it will inform you that there is data stored locally and it should be uploaded to the server.

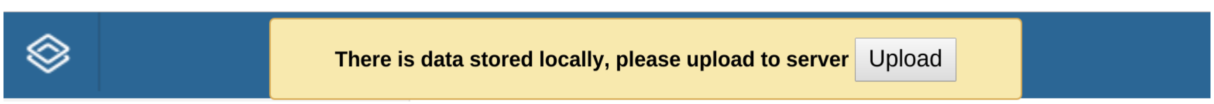
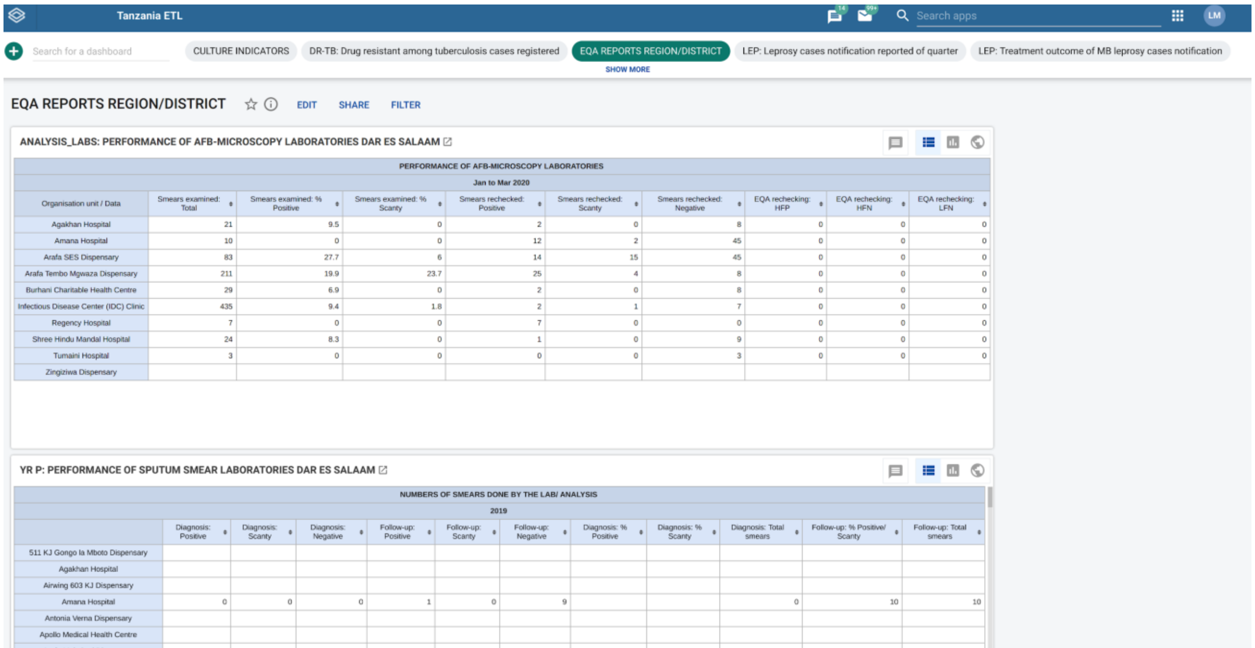


Figure 72: Data stored status on top menu bar

- Once the data has successfully synchronized with the server, you will receive a confirmation message that the data has been successfully uploaded to the server.

8.3 EQA Reports

EQA reports give a summary of the data entered in the EQA forms by aggregating the values according to selected data dimensions. To access the EQA reports can be accessed on the dashboard named EQA REPORTS REGION/DISTRICT.



PERFORMANCE OF AFB-MICROSCOPY LABORATORIES									
Jan to Mar 2020									
Organisation unit / Data	Smears examined: Total	Smears examined: % Positive	Smears examined: % Scanty	Smears rechecked: Positive	Smears rechecked: Scanty	Smears rechecked: Negative	EQA rechecking: HFP	EQA rechecking: HFN	EQA rechecking: LFN
Agakhan Hospital	21	9.5	0	2	0	8	0	0	0
Amana Hospital	10	0	0	12	2	45	0	0	0
Arafa SES Dispensary	83	27.7	6	14	15	45	0	0	0
Arafa Tembo Mgwaza Dispensary	211	19.9	23.7	25	4	8	0	0	0
Burhani Charitable Health Centre	29	6.9	0	2	0	8	0	0	0
Infectious Disease Center (IDC) Clinic	435	9.4	1.8	2	1	7	0	0	0
Regency Hospital	7	0	0	7	0	0	0	0	0
Shree Hindu Mandal Hospital	24	8.3	0	1	0	9	0	0	0
Tumaini Hospital	3	0	0	0	0	3	0	0	0
Zingiziwa Dispensary									

NUMBERS OF SMEARS DONE BY THE LAB/ ANALYSIS											
2019											
	Diagnosis: Positive	Diagnosis: Scanty	Diagnosis: Negative	Follow-up: Positive	Follow-up: Scanty	Follow-up: Negative	Diagnosis: % Positive	Diagnosis: % Scanty	Diagnosis: Total smears	Follow-up: % Positive/ Scanty	Follow-up: Total smears
511 KJ Gongo la Mboto Dispensary											
Agakhan Hospital											
Airwing 603 KJ Dispensary											
Amana Hospital	0	0	0	1	0	9			0	10	10
Antonia Verna Dispensary											
Apollo Medical Health Centre											

Figure 73: EQA Reports dashboard