

# MDRTB contact registry

## Registration of a new MDRTB case or a contact in DHIS2

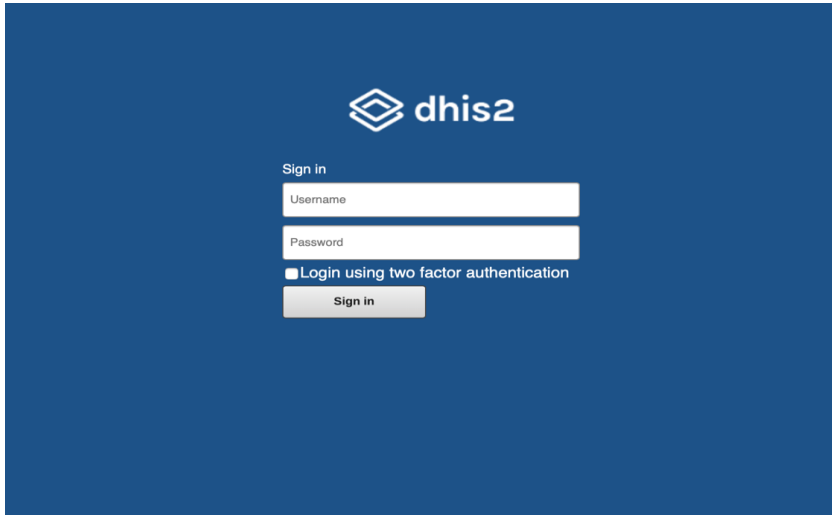
Please make sure

- Each time you open the website you enter your own personal login data.
- Set up two factor authentication on your first log in. The study team will take you through this.
- Each time you close the browser window, you log out instead of closing the page or browser.
- Failure to do so is a security risk.

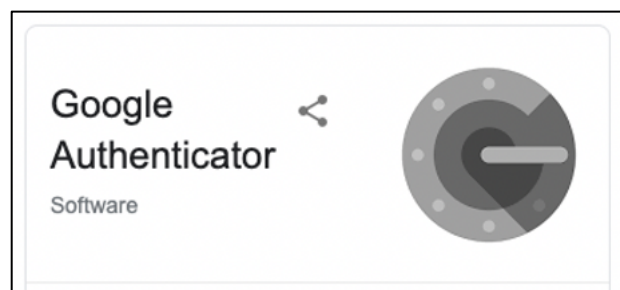
An Internet connection is required.

### DHIS2

Enter the web address into the search navigator <https://mdrtb-contacts.lshtm.ac.uk/>

 The image shows the DHIS2 login interface. It has a dark blue background with the DHIS2 logo at the top. Below the logo, there is a 'Sign in' section with two input fields: 'Username' and 'Password'. Below these fields is a checkbox labeled 'Login using two factor authentication' which is currently unchecked. At the bottom of the sign-in section is a 'Sign in' button.	<p>Enter your username and password</p> <p>Select two-factor authentication. Use your mobile NHS authenticator to generate a login code</p> <p>Sign in</p>
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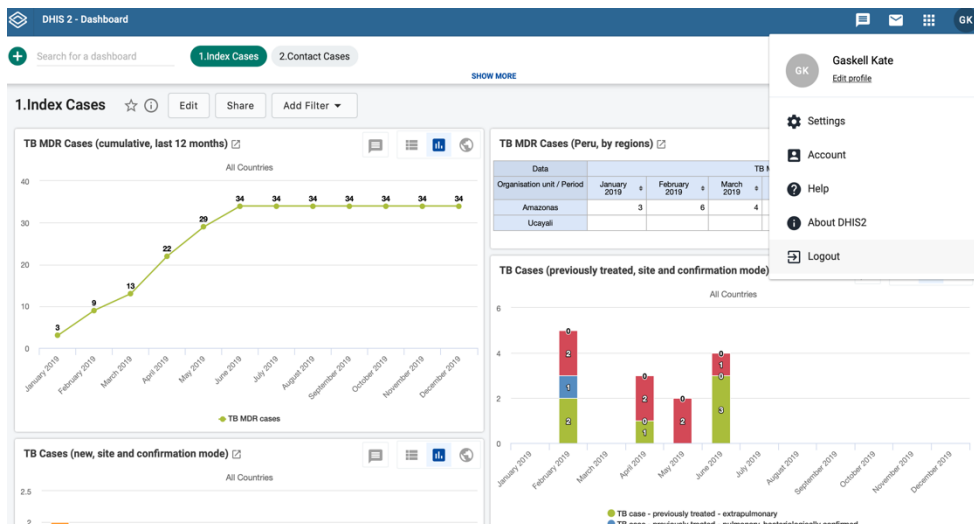
Enter your username, password and select 'login using two-factor authentication'. You will need the authenticator application on your phone to provide the two-factor authentication.



If you do not have this installed on your phone download it for free via the iPhone App store or Google Play store.

If you are not used to using this, please contact us and we will explain during your training session.

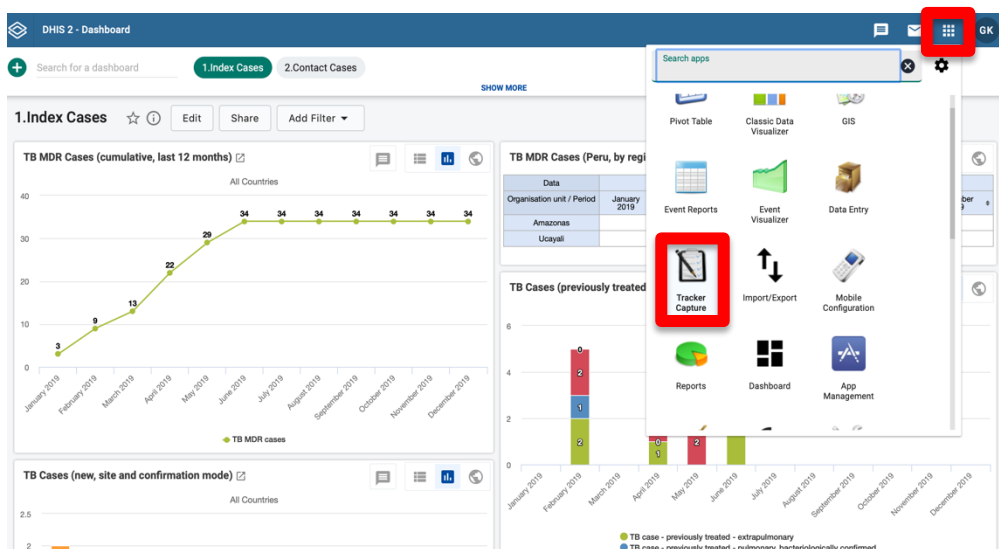
Once connected, the dashboard will be visible:



To log out, click on the profile tab (with your initials) at the top right of the screen.

This dashboard displays real-time, aggregated, anonymised data that has been entered. Currently there are two dashboards. One for the index patients and one for the contacts. You can move between them by selecting the tabs at the top. We can add and change them according to our needs. Each user can select what to see on their dashboard and there are a range of graphs available.

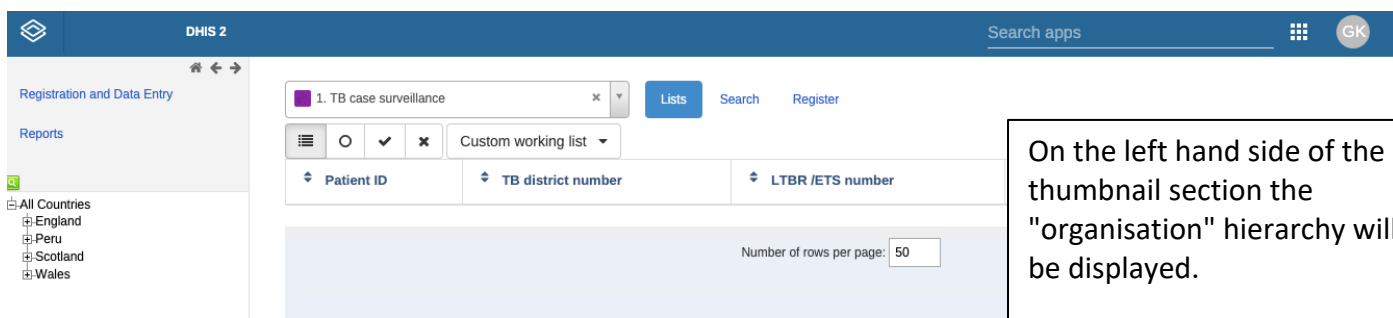
To the left of the profile tab there is a search function called "search applications" highlighted here:



Select "search applications" and a drop-down menu with applications will appear.

Select the tracker capture that looks like a notepad and pencil, this opens the data entry window.

The "tracker capture application" will appear on your screen



On the left hand side of the thumbnail section the "organisation" hierarchy will be displayed.

This is the list of countries, regions, districts and sub-districts within the application

You should see All countries: England, Wales, Scotland. Select your country and a drop-down menu of counties appears, please choose the local authority in which your index patient lives by following the correct region, county, local area.

Once you are in the correct district, the format of the screen changes and you can see two options to choose from in the Lists tab, either TB case surveillance or Contact tracing program.

### **Order of steps to follow when first registering participants**

1. When registering an index patient and their contacts for the first time, always start with the index.
2. Complete all baseline questions for the index patient before registering the contacts for that index patient.
3. Once you have registered both the index and their contact, you can form a relationship link between the two on the system (described later).

The screenshot shows the DHIS2 'Registration and Data Entry' interface. On the left, a sidebar lists regions and local authorities, with 'Camden' highlighted. The main area features a dropdown menu with two options: '1. TB case surveillance' and '2. Contact tracing program'. A callout box on the right provides instructions: 'Before registering any MDR TB contacts, first register their index patient with MDR TB. To do this, choose the TB case surveillance option. Then click on register to enrol a participant.'

The following form, called "registration", will open. Please complete all sections for the MDR TB index patient. Two answers are automatically filled in for you. The enrolment district and the patient ID. The patient ID is the participant's study number.

**You will get the participant study number for each index and contact case once you have registered them in the DHIS2 application.**

The participant study number generated will be unique to each participant and is generated using the date, clinic location, and a unique number for each index participant. Please note that the index study number and their contacts' study numbers will not be numerically linked - linkage will be explained in this document.

The index patient section has been developed in line with the current WHO DHIS2 TB case surveillance platform.

The screenshot shows the DHIS2 interface for TB case surveillance registration. On the left is a sidebar with a list of regions, including London, with 'Camden' highlighted. The main area is titled '1. TB case surveillance' and contains two sections: 'Enrollment' and 'Profile'. The 'Enrollment' section includes fields for 'Enrolling organisation unit' (Camden) and 'TB Notification date' (2021-11-22). The 'Profile' section includes fields for 'Patient ID' (IC-2021-11-430536), 'TB district number', 'LTBR /ETS number', 'First Name', 'Last Name', 'Sex' (a dropdown menu), 'Date of birth (age)' (with sub-fields for Date of birth, Years, Months, Days), 'Date of birth is estimated' (a checkbox), 'District of residence' (a dropdown menu), and 'Address'.

The TB clinic name is the name of the treating health centre.

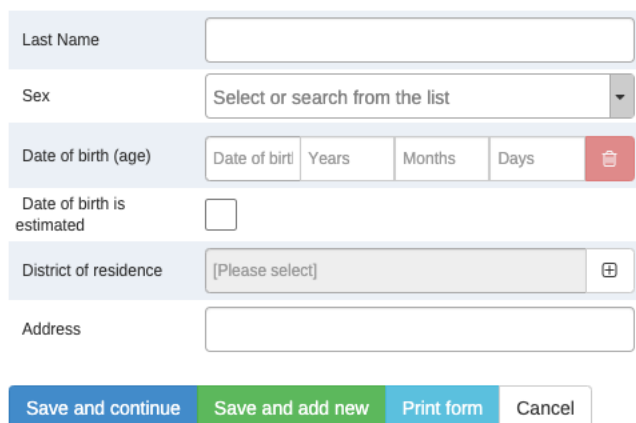
The NTBS number is the unique number given to the TB patient by the TB programme.

Do not leave any answers blank. If you do, you will not be able to proceed to the next step.

If the index patient's details are similar to another previously entered case, a blue box will appear warning you about a possible duplication. Please enter all patient details and then check if the possible duplicate is an exact match by clicking on "view candidate".

This screenshot shows the same DHIS2 registration form, but with different data entered. The 'Enrollment' section shows 'Enrolling organisation unit' as 'Chorillos' and 'Notification date' as '2020-01-01'. The 'Profile' section shows 'Patient ID' as 'IC-2020-01-808338', 'Last Name' as 'Torres', 'Sex' as 'Female', and 'Date of birth (age)' as '2017-06-14' (2 years, 7 months, 0 days). A blue warning box titled 'Possible duplicates found.' is displayed on the right side of the form, with a 'View candidate' button inside it.

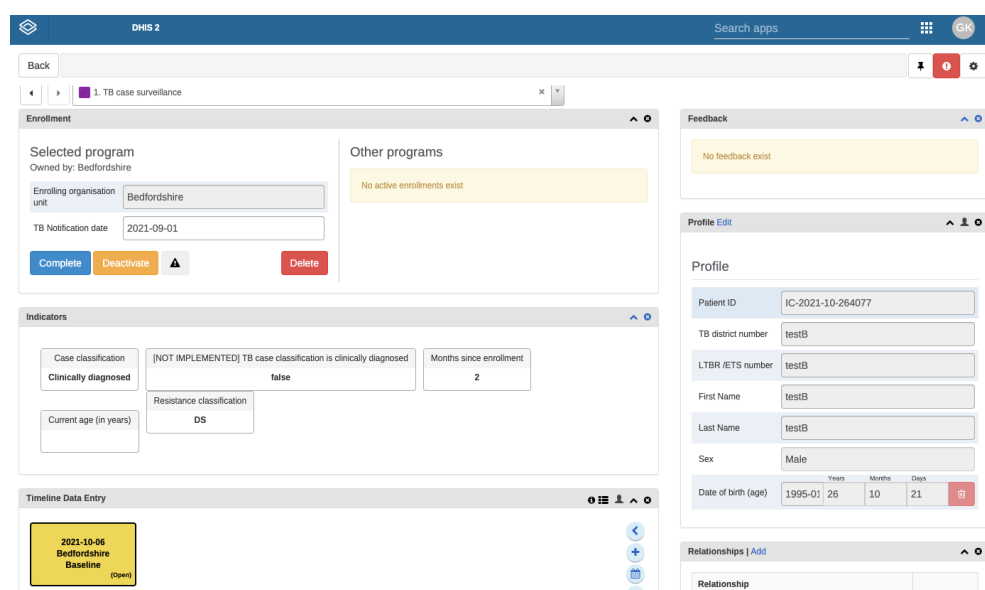
There should be no duplicate MDRTB index patients. If there is an exact match, please recheck the patient details against the TB programme records and with the patient themselves before checking with the study PI. If a patient experiences a 2<sup>nd</sup> episode of MDRTB this can be recorded as another episode under the same patient



Registration form for MDRTB index patient. Fields include: Last Name, Sex (dropdown), Date of birth (age) with sub-fields for Date of birth, Years, Months, Days, and a calendar icon; Date of birth is estimated (checkbox); District of residence (dropdown with '[Please select]'); Address. Buttons at the bottom: Save and continue, Save and add new, Print form, Cancel.

Once you have completed the registration form correctly for the MDRTB index patient, choose confirm and continue.

Once you have entered all personal data, confirm it is correct then select confirm and continue. When the confirmation button is pressed, the following MDRTB index patient home screen will appear.



MDRTB index patient home screen. Sections include: Enrollment (Selected program: Bedfordshire, TB Notification date: 2021-09-01, buttons: Complete, Deactivate, Delete); Other programs (No active enrollments exist); Indicators (Case classification: Clinically diagnosed, Resistance classification: DS, Months since enrollment: 2); Profile Edit (Patient ID: IC-2021-10-264077, TB district number: testB, LTBR/ETS number: testB, First Name: testB, Last Name: testB, Sex: Male, Date of birth (age): 1995-01-26-10-21); Relationships | Add; Timeline Data Entry (2021-10-06 Bedfordshire Baseline).

On the home screen you will see:  
the programme the patient is enrolled in  
their profile  
their relationships with other participants  
the indicators their data will populate for display on dashboards  
their data entry forms in a timeline

## Index case data

For initial registration there are four forms to complete for each index:

1. Baseline data
2. Treatment
3. Laboratory results
4. Drug susceptibility test results

The following list includes all the data required for the index case and is taken from our study materials and the images are screenshots of all the variables you need to include.

- MDR tuberculosis notification date
- Index case identification code
- Total number of contacts in the household
- Date of birth
- Age
- Sex
- Address

- Contact's telephone number
- District of residence
- MDR Treatment start date
- Sputum test result and date of result
- Degree of sputum smear positivity
- TB culture result
- Xpert result
- Drug resistance
- Chest radiograph changes
- Social risk factors
- Previous Treatment courses

To enter one of the four forms, select the plus sign on the right-hand side of the timeline data entry section, select the form you want to load into the timeline, then ensure the box in the timeline is selected (turns yellow) so you can answer the questions within this section.

First complete the baseline data entry form. When you select the box, the following screen appears:

**Timeline Data Entry**

2021-10-06  
Bedfordshire  
Baseline  
(Open)

Baseline information date \*

2021-10-06

**Baseline information**

Site of the disease *	Pulmonary	x
Treatment history *	Relapse	x
Risk factors?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Smoking?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Alcohol use?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Diabetic?	<input type="radio"/> Yes <input type="radio"/> No	
Miner?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Prison? *	<input checked="" type="radio"/> Yes <input type="radio"/> No	
MDR-TB contact?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
TB contact?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Congregate drug use? *	<input type="radio"/> Yes <input checked="" type="radio"/> No	

Please answer all questions.  
You will not be able to progress to the next step unless you do so.

Once all sections are complete, select "complete".

This generates a TB case surveillance report.

**HIV**

HIV status \*

HIV status date

**MDR Treatment initiation**

Duration of index symptoms prior to MDR treatment (weeks)

Index case MDR treatment start date

Your note here

**Report**

1. TB case surveillance

**1. TB case surveillance Report**

Date: 2020-01-14

A box will appear asking if the form is complete. Choose complete and close

The sections on laboratory data, treatment outcome, and drug sensitivity testing can be completed at a later date. None of these are mandatory.

The following screen will appear with the newly entered patient in the list:

Patient ID	TB district number	LTBR /ETS number	First Name	Last Name
IC-2021-10-264077	testB	testB	testB	testB
IC-2021-05-125160	56	56	Test	Test

Number of rows per page: 50

Jump to page: 1

To add the remaining forms (Laboratory forms, treatment and DST) to this index select your patient

**Add new event for stage Treatment**

Program stage

Treatment start date

**Profile**

Patient ID

TB district number

LTBR /ETS number

First Name

Repeat the process of adding forms within the "timeline data entry" by selecting the plus sign "+".

This screen will appear. Here you will be able to add lab, treatment, and DST forms.

You can return to this and add forms later, once results are available

Baseline information date \*

2020-01-01

**Baseline information**

Site of the disease \* Select or search from the list

Treatment history \* Select or search from the list

Risk factors? ☐ Yes ☐ No

**Initial lab results**

Smear result Select or search from the list

Date of smear result yyyy-MM-dd

Smear specimen number

Culture result Select or search from the list

Date of culture result yyyy-MM-dd

Culture specimen number

Xpert MTB/RIF MTB Select or search from the list

Xpert MTB/RIF RIF Select or search from the list

Date of Xpert result yyyy-MM-dd

Xpert specimen number

**Notes**

Your note here

Add Clear

Laboratory form:

Please answer all questions.  
You will not be able to proceed to the next step unless you do so.

**Timeline Data Entry**

2021-10-06 Bedfordshire Baseline (Open) → 2021-11-01 Bedfordshire Treatment (Open) → 2021-11-01 Bedfordshire Lab (Open) → 2021-11-01 Bedfordshire DST (Open)

Treatment start date \*

2021-11-01

**Initial treatment regimen**

Did not start treatment ☐

Treatment category/regimen Select or search from the list

**Status**

First line treatment start yyyy-MM-dd

Second line treatment start yyyy-MM-dd

Complete Delete Print form

Treatment form:

Please answer all questions.  
You can add multiple treatment forms if there have been multiple treatment courses

## Contact case registration

Once you have registered an index patient, return to the previous screen by selecting the back button at the top left of the screen.

You can now register the first contact for this index.

Registration and Data Entry

Reports

- Hampshire
- Hartlepool
- Hertfordshire Shropshire
- Hertfordshire
- Isle of Wight Dorset
- Kent
- Lancashire
- Lincolnshire
- London
- Barking and Dagenham
- Barnet
- Bexley
- Bromley
- Camden
- City of London
- Croydon

2. Contact tracing program

1. TB case surveillance

2. Contact tracing program

Inactive Contact Case ID First Name Last Name Sex Telephone of contact

Camden	2021-11-17	No	CC-2021-11-000006	test	test	Male	9090090
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Number of rows per page: 50 Jump to page: 1

Ensure you are in the correct local borough from the list on the left.

Select the Contact tracing Programme from the drop-down list as shown here.

Select register



**2.Contact tracing program** [x] [v] Lists Search Register

**Enrollment**

Enrolling organisation unit: Bedfordshire

Enrollment point: Latitude Longitude [location icon]

Registration Date: 2021-11-22

Incident date: 2021-11-22

**Profile**

Contact Case ID: CC-2021-11-000018

First Name: [text input]

Last Name: [text input]

Date of birth (age): Date of birth Years Months Days [trash icon]

Date of birth is estimated: ☐

Sex: Select or search from the list [dropdown]

Address: [text input]

Telephone of contact: [text input]

Location of residence: [Please select] [add icon]

Location of contact with Index case: Select or search from the list [dropdown]

Other location of contact with Index case: [text input]

Relation with Index case: Select or search from the list [dropdown]

Complete the form, leaving no questions unanswered. The form will not save unless it is complete.

The contact participant's study ID will auto-generate

Information that needs to be entered:

- Patient's last name
- Patient's first name
- Date of birth (Age)
- Sex
- Home district
- Contact phone number
- Location of residence (type the local authority into the search bar)
- Location of contact with index case
- Relationship to index case
- Proximity to index case

Select save

The contacts home page will open with a timeline for follow up

On the home screen you will see:

- program registration details
- the contact profile
- their relationships with other participants
- the indicators their data will populate for display on dashboards
- their data entry forms in a timeline

## Timeline Data entry

Within the timeline data entry, you should see the data capture forms for each time point Month 0 (M0), Month 3 (M3), Month 6 (M6), Month 12 (M12), Month 18 (M18), and Month 24 (M24).

If you cannot see them, you will need to add them.

To add a data capture form, select the + button to the right of the timeline data entry box.

Select "Add New"

To add additional timepoint reviews you can select the "additional review" form.

Añadir nuevo evento para la etapa Screening Visit M0

First select screening visit M0

A screen opens allowing you to set the "assessment date" and the "organisational unit" (meaning the district in which the participant lives).

Select next.

You will need to do this for each data entry form you add.

## Baseline visit M0

Timeline Data Entry

2021-11-22 Bedfordshire Screening Visit M0 (Open) → 2022-02-20 Bedfordshire Follow-up M3 (Scheduled) → 2022-05-21 Bedfordshire Follow-up M6 (Scheduled) → 2022-11-22 Bedfordshire Follow-up M12 (Scheduled) → Next

Fecha de proyección (Screening Date) \* 2021-11-22 Due date 2021-11-22

**Screening questions**

Duration of index symptoms prior to MDR treatment (weeks)

Index case MDR treatment start date yyyy-MM-dd

Any known risk factors for progression to active TB disease after exposure \* ☐ Yes ☐ No

Previous treatment for TB Select or search from the list

Treatment start date yyyy-MM-dd

Previous preventive treatment for TB Select or search from the list

Duration of exposure (weeks)

Social risk factors Select or search from the list

Information to be entered:

Are there any known risk factors?  
Previous TB treatment  
Previous TB preventive treatment  
Duration of exposure (to a symptomatic index) in weeks  
MDRTB treatment initiation date of the index

Select all radio buttons relevant for the current contact

DHIS 2

**Contact symptoms**

Weight (kg)

Height (cm)

If child (< or=18) are they underweight? ☐ Yes ☐ No

If child (< or=18) are they wasted? ☐ Yes ☐ No

Mid upper arm circumference ☐ Yes ☐ No

Mid upper arm circumference result Select or search from the list

Cough ☐ Yes ☐ No

Prolonged fever > 48 hours ☐ Yes ☐ No

Weight loss ☐ Yes ☐ No

Night sweats ☐ Yes ☐ No

Other ☐ Yes ☐ No

**Laboratory tests**

Sputum testing done ☐ Yes ☐ No

Date of smear result yyyy-MM-dd

Type of sputum sample Select or search from the list


Date of culture result yyyy-MM-dd

Date of Xpert result yyyy-MM-dd

Enter the number of weeks of exposure to a symptomatic index

Sputum sample. Enter results once available.

Chest X-ray performed. Enter results once available.


DHIS 2

### Radiology

Chest X-ray done

☐ Yes
☐ No

Date of Chest X-ray

yyyy-MM-dd

### Latent TB infection tests

Other TB tests

Tuberculin skin test

☐ Yes
☐ No

Date of tuberculin skin test

yyyy-MM-dd

IGRA

☐ Yes
☐ No

Date of IGRA test

yyyy-MM-dd

### Outcome

Evidence of TB

☐ Yes
☐ No

Active TB treated

☐ Yes
☐ No

Latent TB treated

☐ Yes
☐ No

Latent TB not treated

☐ Yes
☐ No

Lost to follow up

☐ Yes
☐ No

BCG given

☐ Yes
☐ No

Other outcome

Remind your contact that they will be screened for 2 years, give them a guide on TB symptoms and how to seek help, and give them a card with contact information.

When the form is complete, select complete.

Add forms M3, M6, M12, M18 and M24 to the contact's dashboard. The dates on these forms are automatically filled in, but you can change them to a date you agree with the contact. You can add additional review forms for reviews at other time points, for example a remote review in paediatrics at 9 months.

## **Follow up visits**

When you review this contact at the next visit, make sure to return to the same contact to enter the next data capture form (M3, M6 etc). To do this you can find a list of contact participant IDs under the borough within the Contact tracing program. Ensure you know which participant ID is linked to each contact.

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**Once you have entered the index case and the contact case it is important to link them by entering a "relationship".**

## **Adding a relationship**

**Selected program**  
Owned by: Bedfordshire

Enrolling organisation unit: Bedfordshire

Enrollment point: Latitude Longitude

Registration Date: 2021-11-22

Buttons: Complete, Deactivate, Delete

**Other programs**  
No active enrollments exist

**Profile Edit**

Profile

Contact Case ID: CC-2021-11-000018

First Name:

Last Name:

Sex:

Telephone of contact:

**Relationships | Add**

No relationships exist

**Indicators**  
Months since enrollment-contact cases: 0

**Timeline Data Entry**

2021-11-22 Bedfordshire Screening Visit M0  
2022-02-20 Bedfordshire Follow-up M1  
2022-05-21 Bedfordshire Follow-up M2  
2022-11-22 Bedfordshire Follow-up M3

Within the relationship box select the "add" button. A window will open showing a box asking you to add a relationship.

**Add relationship**

✓ Please select a relationship

Contact-Index Case

Close

From the drop-down menu, select the contact index case.

A new window will open with your contact client and the list of index patients already entered in the system.

**Person search results**

Registering unit	Registration date	Inactive	First Name	Last Name	Patient ID	TB district number	TB number	Sex	Date of birth (age)	
Bedfordshire	2021-05-19	No	Test	Test	IC-2021-05-125180	56	56	MALE	1965-05-19	Flag possible duplicate
Bedfordshire	2021-10-20	No	testB	testB	IC-2021-10-264077	testB	testB	MALE	1995-01-01	Flag possible duplicate

Number of rows per page: 50

Jump to page: 1

Back Go to registration

Here you can see the details of your contact participant on the left of the screen. On the right you can search for index TB patients using demographic data.

Select the index MDRTB patient of your contact participant.

The following screen will appear. Select "save" if you are happy that this is the correct index patient.

You should now see a link within the relationship box on the main page of your contacts.

Once you have completed all the fields, you will find a box at the bottom left of the screen (scroll down) that says "complete" in yellow. Select this option to complete data entry and save the data. If the data is incomplete, you will see a warning message and you will have to go back and complete the empty fields.

Before leaving the contact, make sure you know the date of your next M3 or M6 follow-up and plan with them where and how it will be (by phone/home person/other location).