

# Learner's Guide for Maps

## What is this guide?

This guide contains all exercises and detailed steps to perform them related to the review of **Maps** for the Android Level 1 academy. Please perform each of the exercises when prompted to by your instructors

## Learning objectives for this session

1. Describe how maps can be used in DHIS2 Android Device
2. Demonstrate how to collect and display tracked entity and program stage coordinates
3. Demonstrate how to toggle additional options within maps on an Android device

## Part 1 - Interface Review and Showing enrollments on a map

- Open the immunization program from the android home screen
- Select the map icon within the event line list page for this program

The screenshot shows the DHIS2 Immunization program interface. At the top, there is a blue header bar with a back arrow, the title "Immunization", a dropdown menu, a refresh icon, and a settings icon. Below the header is a search bar with a magnifying glass icon and the word "Search". The main content area displays three enrollment records:

	Local ID	Enrollment Time	Action
A	AG6789	3 hours ago	Refresh
C	CX78978	9 hours ago	Refresh
B	BC7893	10 hours ago	Refresh

Each record includes the Local ID, the time of enrollment, and a refresh icon. Below the enrollment details, there is a dropdown arrow for each record.

B

Local ID BC7893  
Child Numb... 1800  
Enrolled in: 0002 CH Mittaphap

2

Local ID 23

10 hours ago

Child Numb... 5423

Enrolled in: 0001 CH Mahosot



T

Local ID TY6786Y7

10 hours ago

Child Numb... 8848

Enrolled in: 0001 CH Mahosot



?

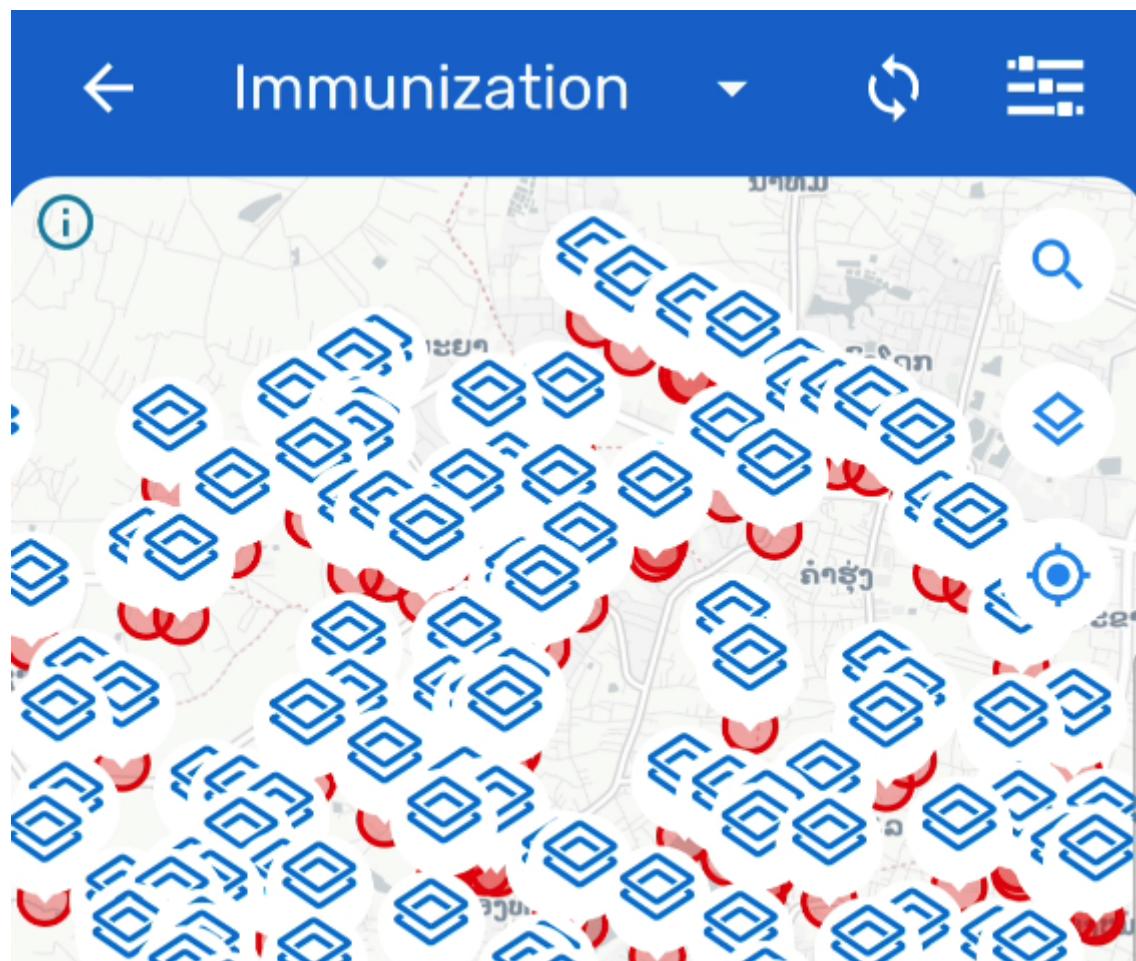
Local ID -

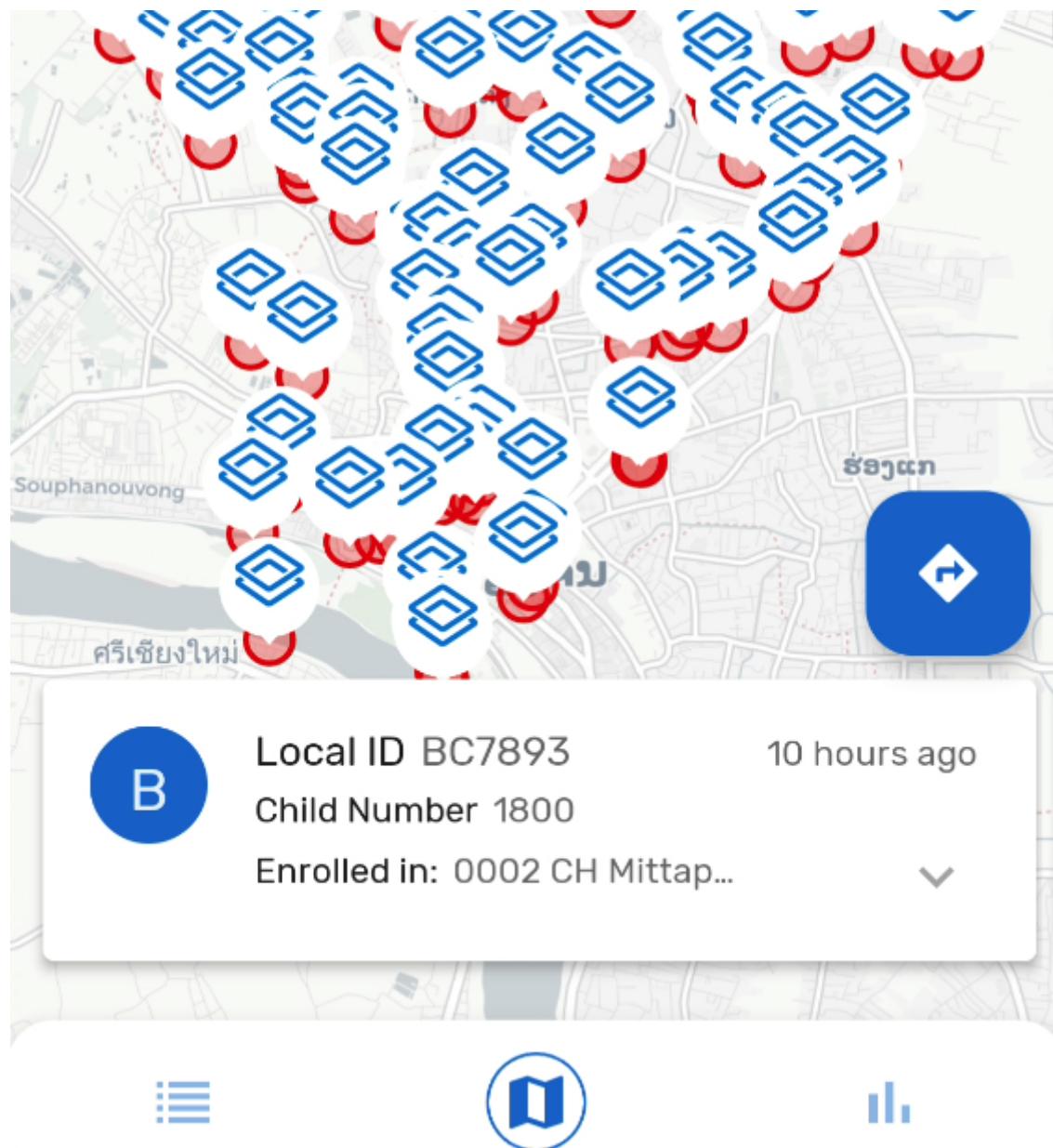
10 hours ago

Child Numb... 4628



This will display all of the enrollments stored on device with coordinates. In this case, we can see coordinates are spread out a bit. Let us zoom in on Lao

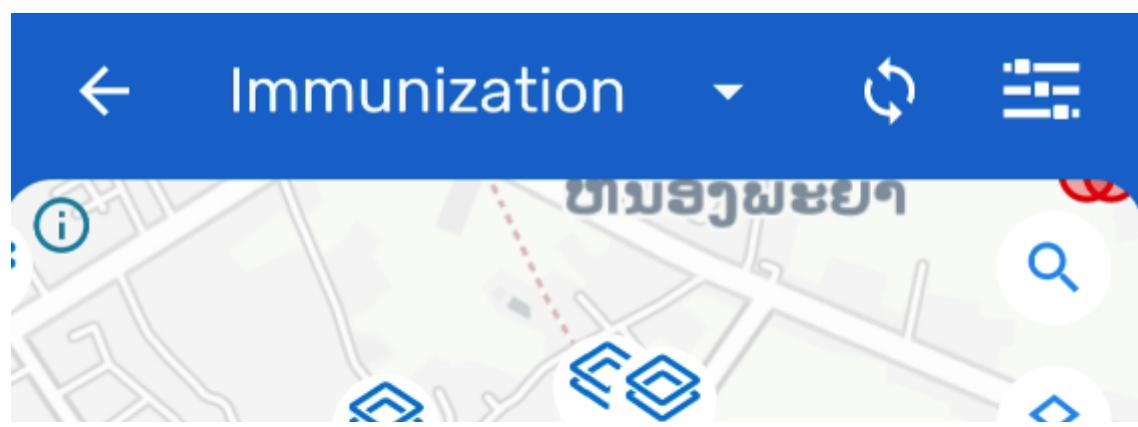




What we are seeing here is the location of children with a coordinate within the immunization program. Note it is only showing those TEIs that have been synced with the android device and have been enrolled in org units that this specific user has access to.

From this page, we can filter out various individuals and also select individuals so we can see their details.

If I select one of the TEIs on display, I can see their details. I can expand these details by selecting the arrow button beside their details.



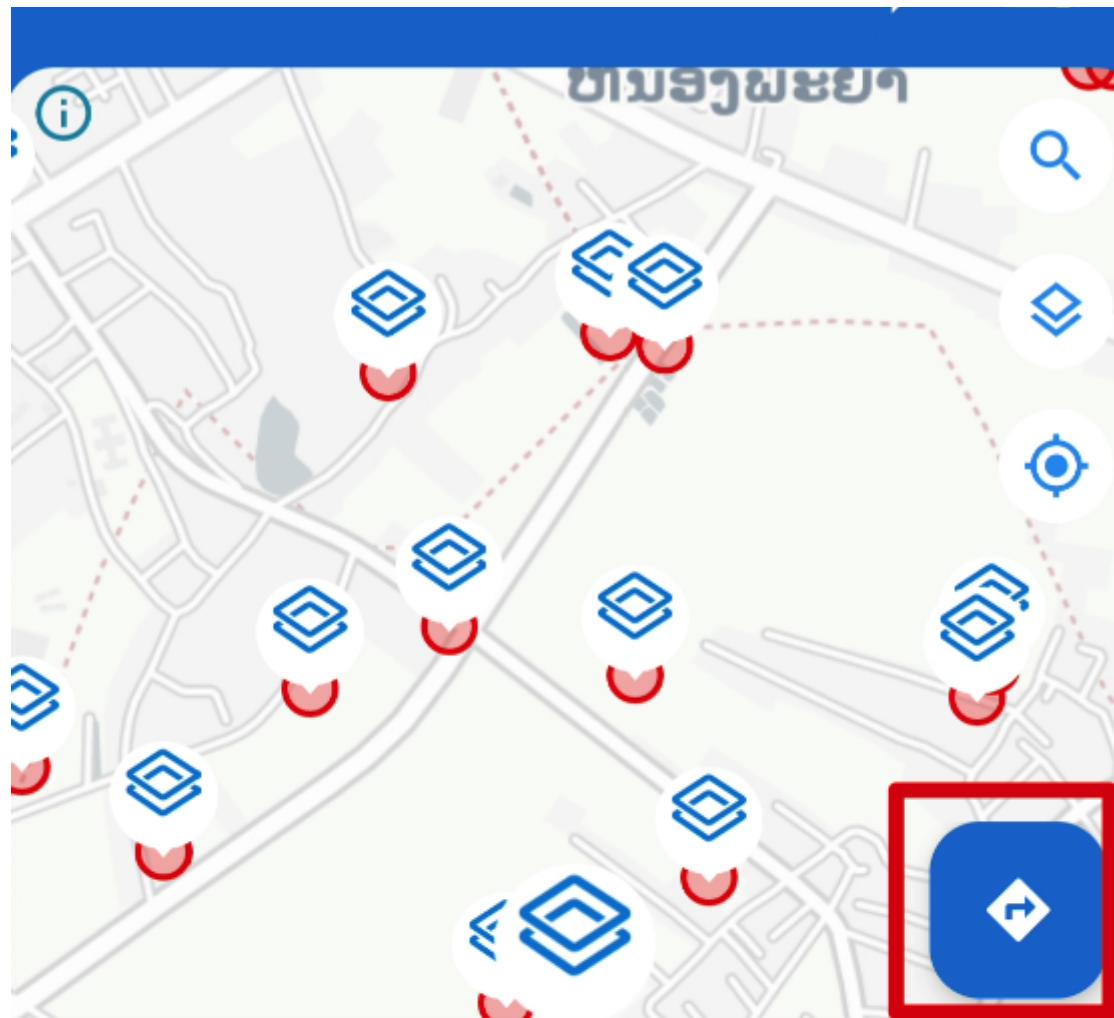
The image shows a mobile application interface. At the top, there is a map with several location markers: blue diamond shapes and red heart shapes. A large blue button with a white arrow icon is located in the bottom right corner of the map area. Below the map is a white card containing a child's profile information. The card has a circular icon with a question mark on the left. The data is presented in a table format:

Local ID -	9/11/2023
Child Number	1326
First Name	Devonte
Last name	Brakus
Date of Birth	2022-01-25
Sex	Male
Mother/Caregiver's first name	Emelie
Mother/Caregiver's last name	Brakus
Mother/Caregiver's contact number	(194) 865-0823
Enrolled in:	PPM Chanthabouli

At the bottom of the screen, there are three circular icons: one with horizontal lines, one with a book, and one with vertical lines. The bottom navigation bar is blue and contains the text "← Immunization ▾" on the left and "⟳ ☰" on the right. The page number "4 / 29" is at the bottom center.

By selecting the arrow button on this screen, you can open the location of this person within the mapping app of your choice. This could be useful if you want to perform some type of follow up with this individual



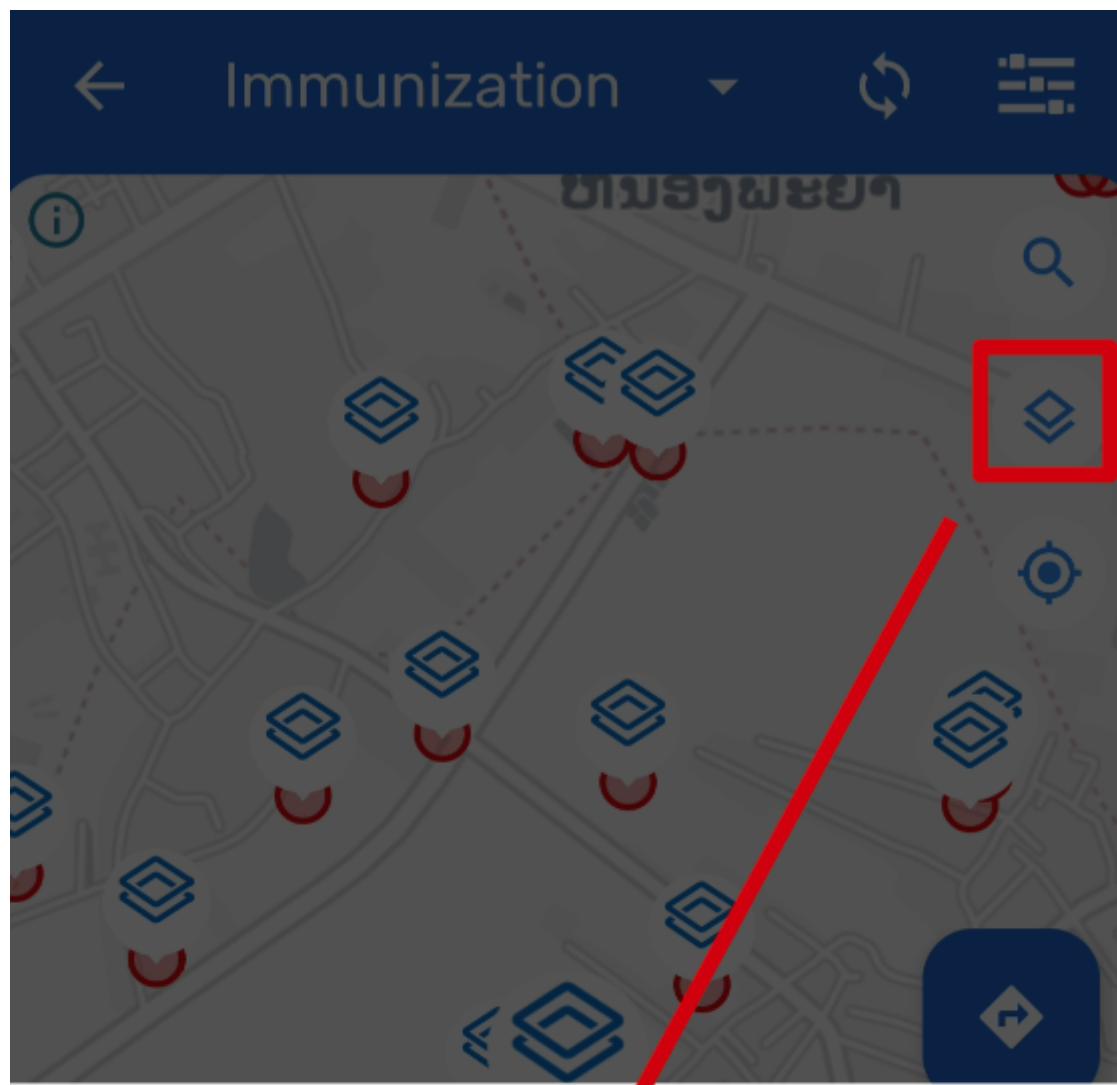


Local ID - 9/11/2023

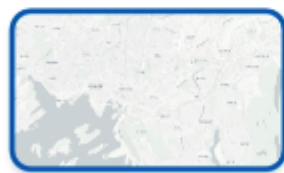
?

Child Number	1326
First Name	Devonte
Last name	Brakus
Date of Birth	2022-01-25
Sex	Male
Mother/Caregiver's first name	Emelie
Mother/Caregiver's last name	Brakus
Mother/Caregiver's contact number	(194) 865-0823
Enrolled in:	PPM Chanthabouli

From this page, you can also modify some of the options in the map by selecting the menu button



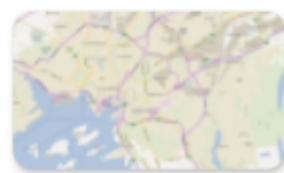
### Map layers



OSM Light



OSM Detailed



Bing Road

E

Show tei coordinates



Immunization



Siblings



Show heatmap layer



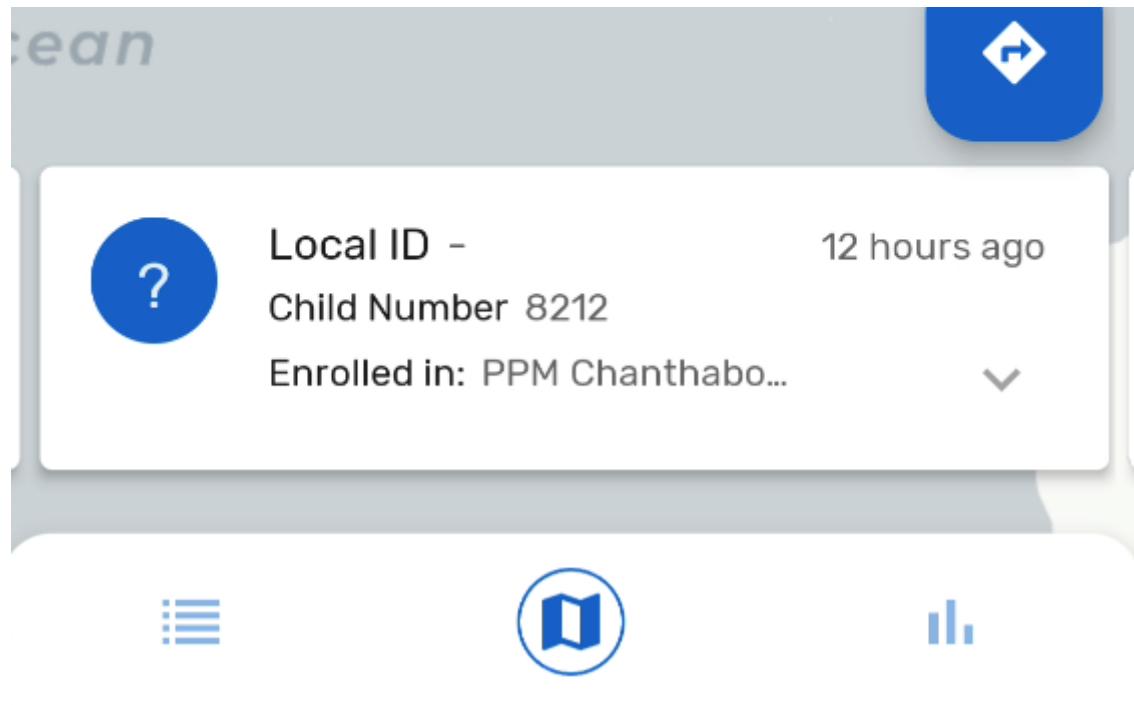
APPLY

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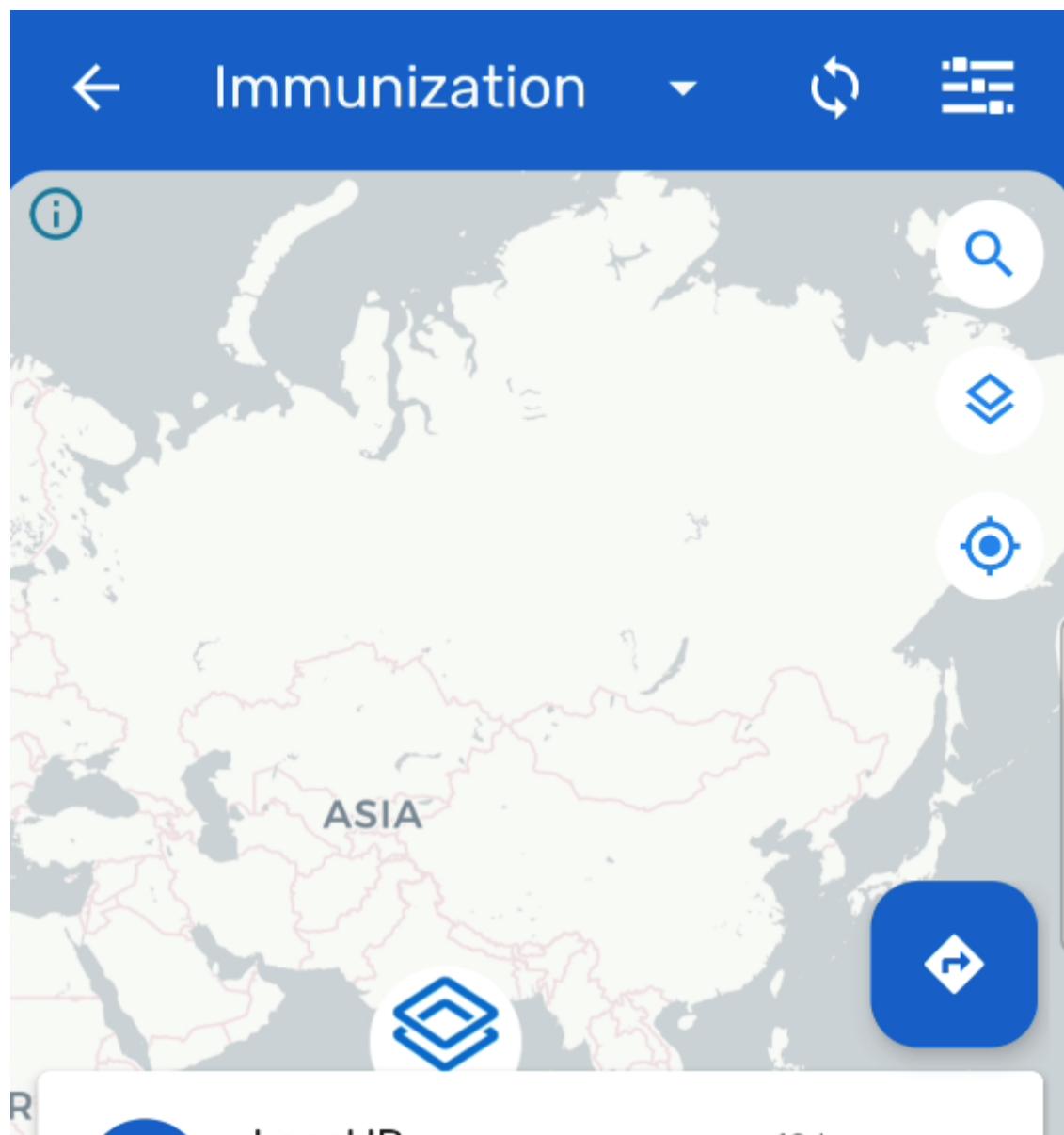
From this menu you can change the map background layer and make other adjustments. These will be discussed more later on in this session.

Additionally, you can also search for specific TEIs on the map by using the search icon.





Let us search for the child with the Child Number : 8212. These will display their location along with their details which you can expand to review further.



The screenshot shows a mobile application interface for child enrollment. At the top left is a blue circular button with a white question mark icon. To its right, the text "Local ID -" is followed by "12 hours ago". Below this, there is a list of child information:

Child Number	8212
First Name	Marisol
Last name	Strosin
Date of Birth	2021-11-22
Sex	Male
Mother/Caregiver's first name	Alexandro
Mother/Caregiver's last name	Strosin
Mother/Caregiver's contact number	(929) 681-2676
Enrolled in:	PPM Chanthabouli

At the bottom of the screen are three blue circular icons with white symbols: a grid, a book, and a bar chart.

### STOP - End Exercise 1

## Exercise 2 - Enrollment Coordinates

In this session our main objective is to understand how to add coordinates in the tracked Entity Instance using the Immunization program and the Program Stage coordinate.

### TEI coordinates

You can Capture the TEI coordinates in the registration form of the Immunization program. To get this feature we need to enable this feature in the tracked entity type (TET) feature type (for this demo it has already been configured for Immunization program).

Now let's start with the first TEI coordinate (that represents the child's home) "Coordinates of the Child"

Before understanding how its captured in the android device lets see how this is configured in the web interface.

### Web Configuration

These coordinates are configured via the tracked entity type.

Tracked entity type management ⓘ

Search by name, code or id

- Name
- Child
- Person

Name (\*)

Child

Color

**SELECT COLOR**

Icon

**ADD ICON**

Description

Enable tracked entity instance audit log

Minimum number of attributes required to search

1

Maximum number of tracked entity instances to return in search

0

Feature type

Point

## Switch back the to the Android device

- Open the Immunization program
- Either Search for an existing child and select "Open Child Details" or create a new child.

← Immunization ▾

ⓘ It is necessary to enter at least 1 attributes to search

Local ID  
23 

Child Number  
Enter text

First Name  
Enter text

Last name  
Enter text

Date of Birth  
Choose date 

Sex  
 Male  Female

Village/Domicile  
Enter text

Family Address  
Enter long text 

The screenshot shows a mobile application interface for 'Immunization'. At the top, there is a blue header bar with a back arrow, the title 'Immunization', a refresh icon, and a menu icon. Below the header is a search bar with a magnifying glass icon and the placeholder text 'Search'. The main content area displays a child record. On the left, a blue circular badge contains the number '2'. To the right of the badge, the child's details are listed: 'Local ID 23', 'Child Number 5423', and 'Enrolled in: 0001CH Mahosot'. Next to 'Local ID 23' is a timestamp '6 hours ago' and a refresh icon. A downward arrow is positioned to the right of the enrollment information. At the bottom of the screen, there is a button labeled '+ Create new' with a plus sign icon. The page footer indicates '12 / 29'.

2 Local ID 23 6 hours ago

Child Number 5423

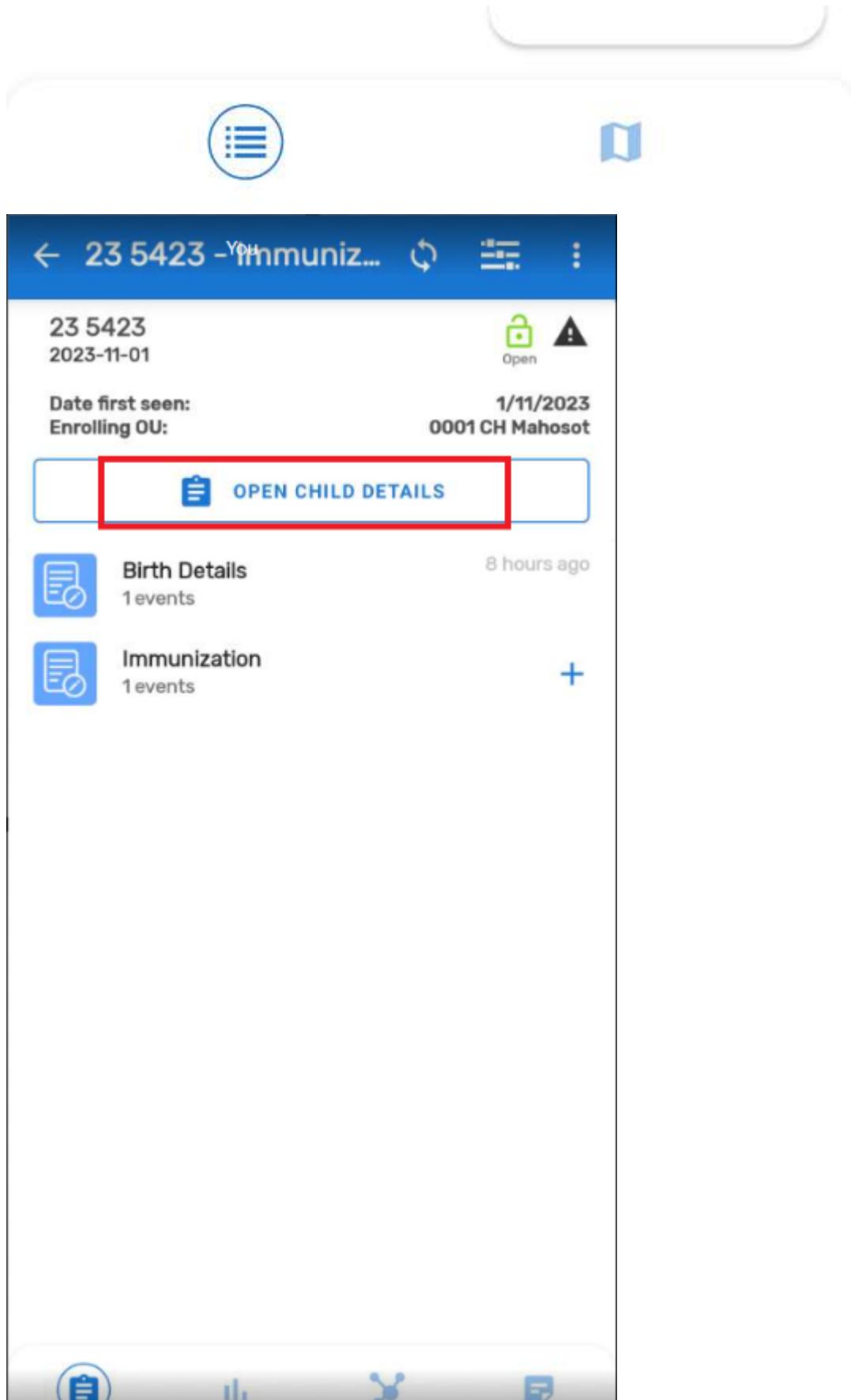
Enrolled in: 0001CH Mahosot

To search outside this program open the search form and fill one of the following child fields:

- Child Number
- First Name
- Last name
- Date of Birth
- Sex

+ Create new

12 / 29



- Review the coordinates field for the child. This is where we can assign the child's home location.

← 23 5423 You  
2023-11-01

① Enrollment data 2/3 ^

Date first seen \*

1/11/2023

Enrolling OU: \*

0001 CH Mahosot

Coordinates for the Child

Latitude  Longitude

**Next**

② Attributes - Child 6/15 ▾

To do this you have two options

← 23 5423 You  
2023-11-01

① Enrollment data 2/3 ^

Date first seen \*  
1/11/2023

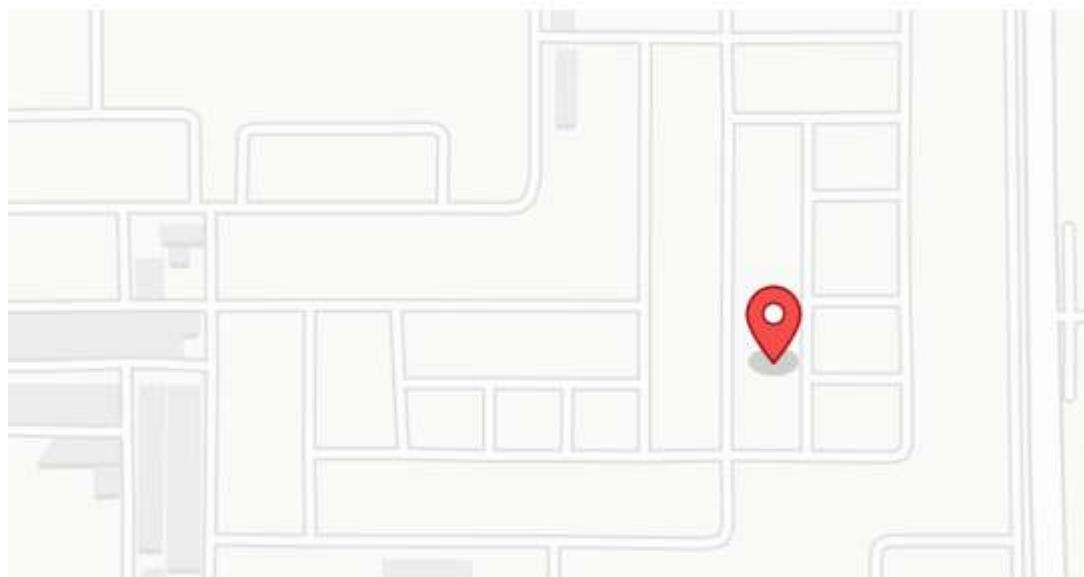
Enrolling OU: \*  
0001CH Mahosot  2

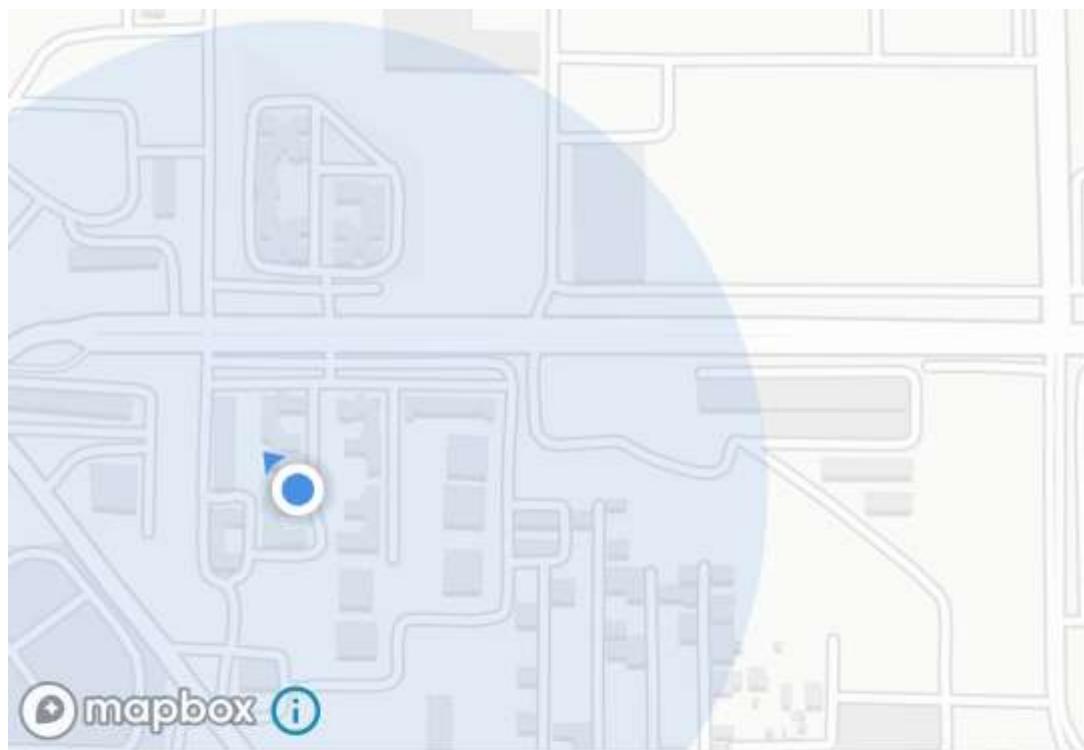
Coordinates for the Child 1  
Latitude  Longitude

② Attributes - Child 6/15 ▾

1. The First option will select the exact latitude and longitude based on your current location.
2. The Second option will open the map where you can select the location of your choice and Save it.

## ← Select location





Lat

---

28.401

---

Lng

---

77.36046

---

Accept

**STOP - End Exercise 2**

## Exercise 3 - Program Stage Coordinates

### Capturing a Program Stage Coordinate

This is also configured while designing the program. In this case we have set an Immunization stage in the Immunization program and we have used Feature type as Point while configuring the program stage.

#### Web Configuration:

- Connect to the web with the Administrator account and go to Maintenance > Program
- Immunization Program and Program Stages

- Select your Immunization Program based on the user assignment provided to you
- Select Feature type as point

ALL	CATEGORY	DATA ELEMENT	DATA SET	INDICATOR	ORGANISATION UNIT	PROGRAM
Default next scheduled date						
<input type="checkbox"/> Auto-generate event <input type="checkbox"/> Allow user assignment of events <input type="checkbox"/> Block entry form after completed <input type="checkbox"/> Ask user to complete program when stage is complete <input checked="" type="checkbox"/> Ask user to create new event when stage is complete <input checked="" type="checkbox"/> Generate events based on enrollment date <input type="checkbox"/> Hide due date						
Feature type						
Point						
<input type="checkbox"/> Pre-generate event UID <small>Description of report date</small> <small>Date of services given</small>						

## Capturing Program Stage coordinates in Android

- Open the Immunization program
- Either Search for an existing tracked entity or Create a New Registration.

← Immunization ▾

① It is necessary to enter at least 1 attributes to search

Local ID

23

Child Number

Enter text

First Name

Enter text

Last name  
Enter text

Date of Birth  
Choose date 

Sex  
 Male  Female

Village/Domicile  
Enter text

Family Address  
Enter long text   


← Immunization  

 Search

**2** Local ID 23 6 hours ago   
Child Number 5423   
Enrolled in: 0001 CH Mahosot

To search outside this program open the search form and fill one of the following child fields:

- Child Number
- First Name
- Last name
- Date of Birth
- Sex

The screenshot shows a mobile application interface. At the top, there is a search bar with placeholder text "Search" and a magnifying glass icon. Below the search bar is a button labeled "+ Create new". The main content area displays a patient record with the following details:

**Patient ID:** 23 5423

**Date:** 2023-11-01

**Actions:** A green lock icon with the word "Open" and a black triangle icon.

**Information:**

- Date first seen:** 1/11/2023
- Enrolling OU:** 0001 CH Mahosot



OPEN CHILD DETAILS



Birth Details

0 events



Immunization

0 events

Add new

Referral



- Capture Coordinates for New Event for Immunization Stage (This will help in further analysis where we can track from where child is getting immunized)



Immunization - New event





## Immunization

Date of services given

**24/11/2023**

---

Org unit

**0001 CH Mahosot**

---

Latitude

Longitude



**NEXT**

- The First option will select the exact latitude and longitude of the device
- The Second option will open the map where you can select the location of your choice and Save it

### **STOP - End Exercise 3**

## Exercise 4 - Mapping Relationships for a Program

### Relationships in Maps

A relationship is considered data in DHIS2 and is based on a Relationship Type, similar to how a Tracked Entity Instance is based on a Tracked Entity Type. Relationships always include two entities, and these entities can include Tracked Entity Instances, Enrollments and Events, and any combination of these.

In this case we have configured a Relationship type "Siblings" which is bidirectional.

Online configuration:

- Connect to the web with the Administrator account and go to Maintenance > Program
- Relationship type
- You can observe the Siblings Relationship already created.

*Note : We will talk in detail about this in Relationship session*

### Relationships in Maps

In tracker programs, the user can see relationships on a map by tapping the map icon on the relationships tab.

Search for the person with the Child Number 1024 (Jane Thompson)

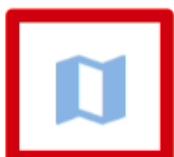
- An arrow is shown on the direction of the relationship.
- For bidirectional relationships, the arrow points both sides.
- Each relationship type displays a different color.
- If one or both TEIs have a polygon as coordinate, the line goes from (and to) the nearest point in the polygon of both TEIs.

To show this feature, select the map icon from the event page line list screen for the immunization program.

The screenshot shows the 'Immunization' application interface. At the top, there is a blue header bar with a back arrow, the title 'Immunization', a dropdown menu, a refresh icon, and a settings icon. Below the header is a search bar with a magnifying glass icon and the word 'Search'. The main content area displays a list of four children, each represented by a blue circular badge with a letter (A, C, B, 2) and a number (1061, 6736, 1800, 5423). Each child entry includes their Local ID, Child Number (partially visible), and Enrolled in: information, followed by a timestamp and a refresh icon. Below each entry is a downward-pointing arrow icon.

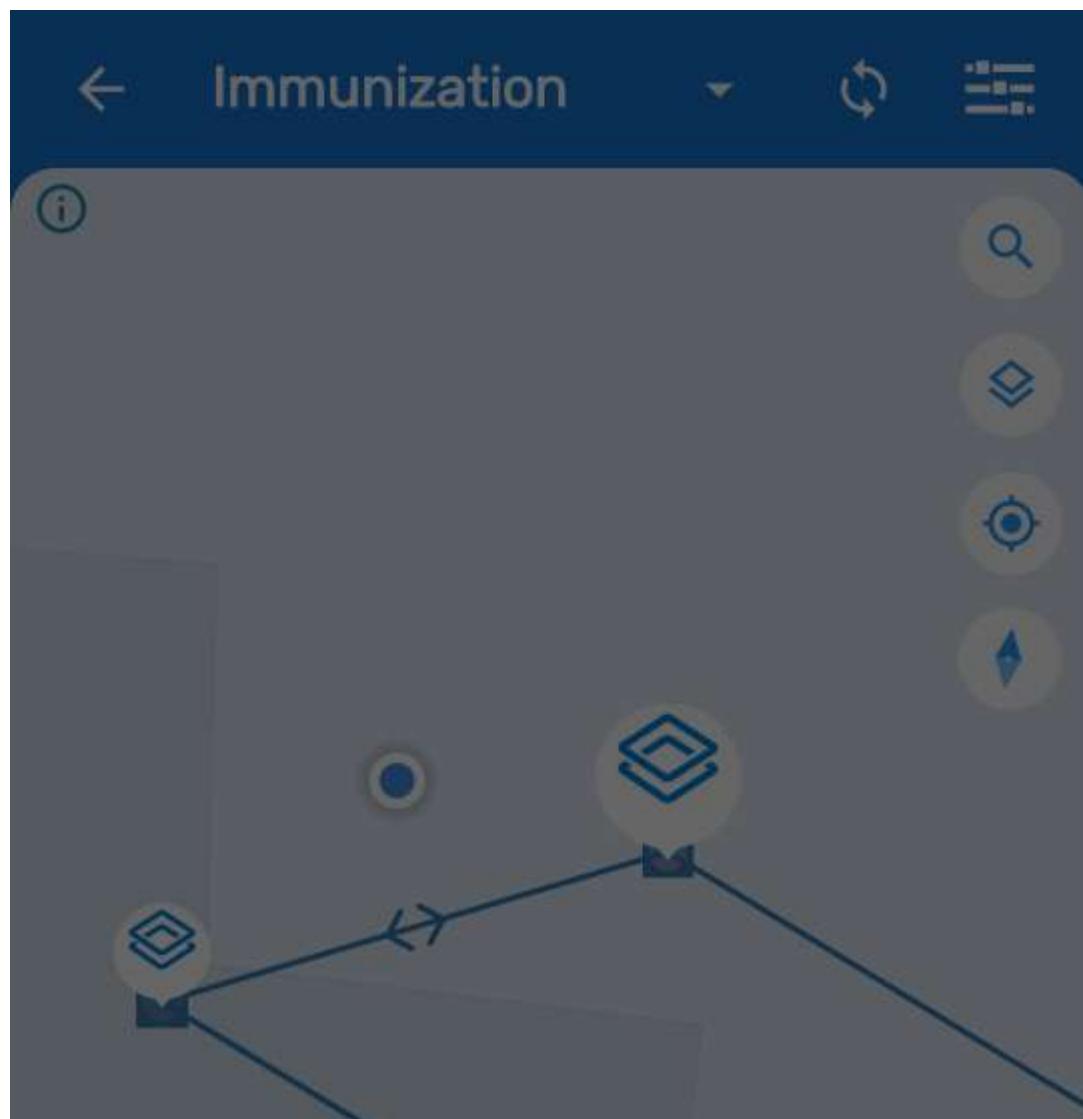
Child ID	Local ID	Child Number	Enrolled in:	Last Update
A 1061	AG6789	Child Numb... 1061	Enrolled in: PPM Chanthab...	1 hours ago
C 6736	CX78978	Child Numb... 6736	Enrolled in: PPM Chanthabouli	7 hours ago
B 1800	BC7893	Child Numb... 1800	Enrolled in: 0002 CH Mittaphap	8 hours ago
2 5423	23	Child Numb... 5423	Enrolled in: 0001 CH Mahosot	8 hours ago

	Local ID TY6786Y7 Child Numb... 8848 Enrolled in: 0001 CH Mahosot	8 hours ago
	Local ID - Child Numb... 4628	8 hours ago

This will show all of your TEIs on the screen.

To show the relationships, select the menu button from within the maps interface then select Siblings and Apply.



## Map layers



OSM Light



OSM Detailed



Bing Road



Bing Detailed

Show tei coordinates



Immunization



Siblings

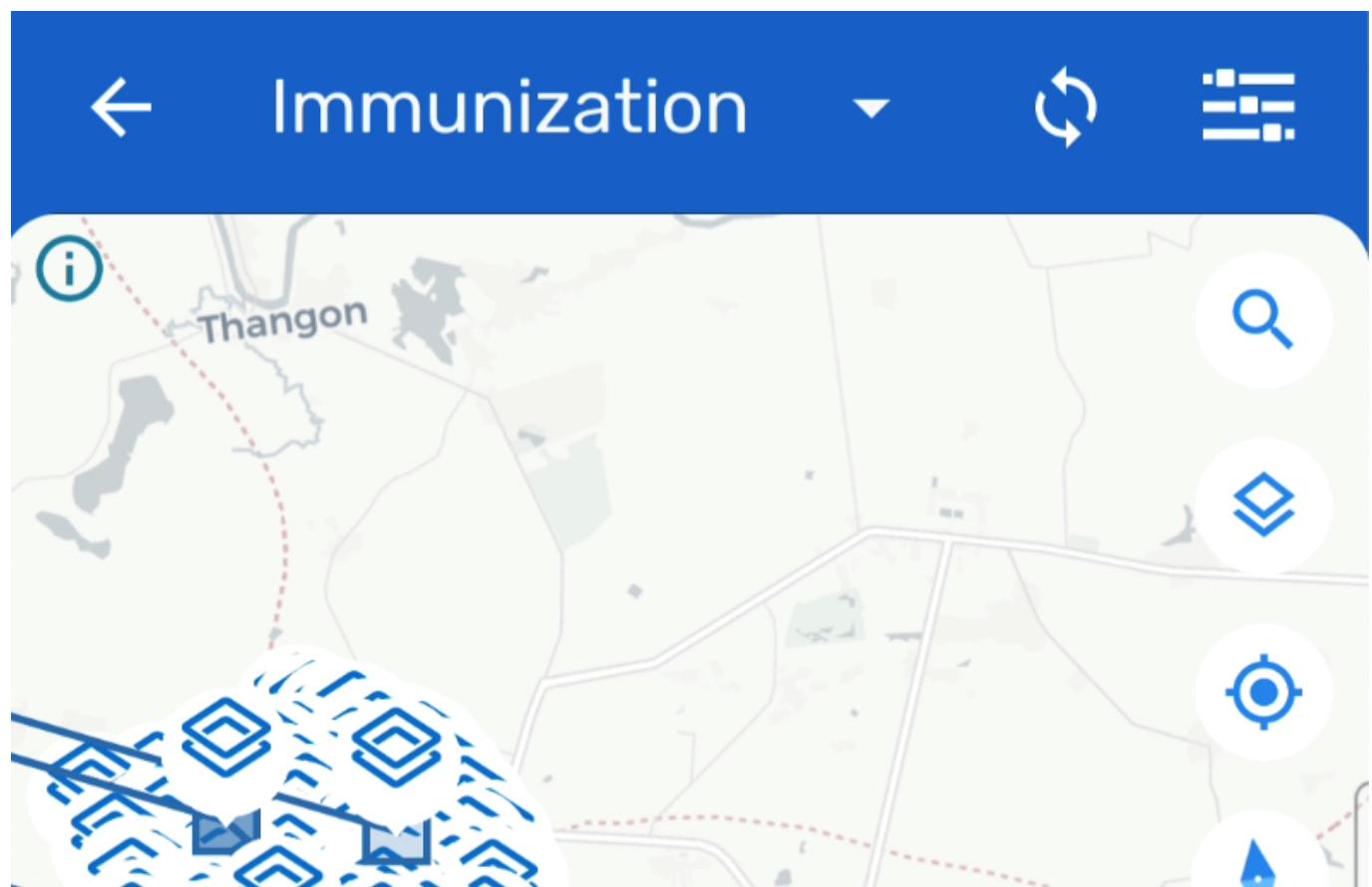


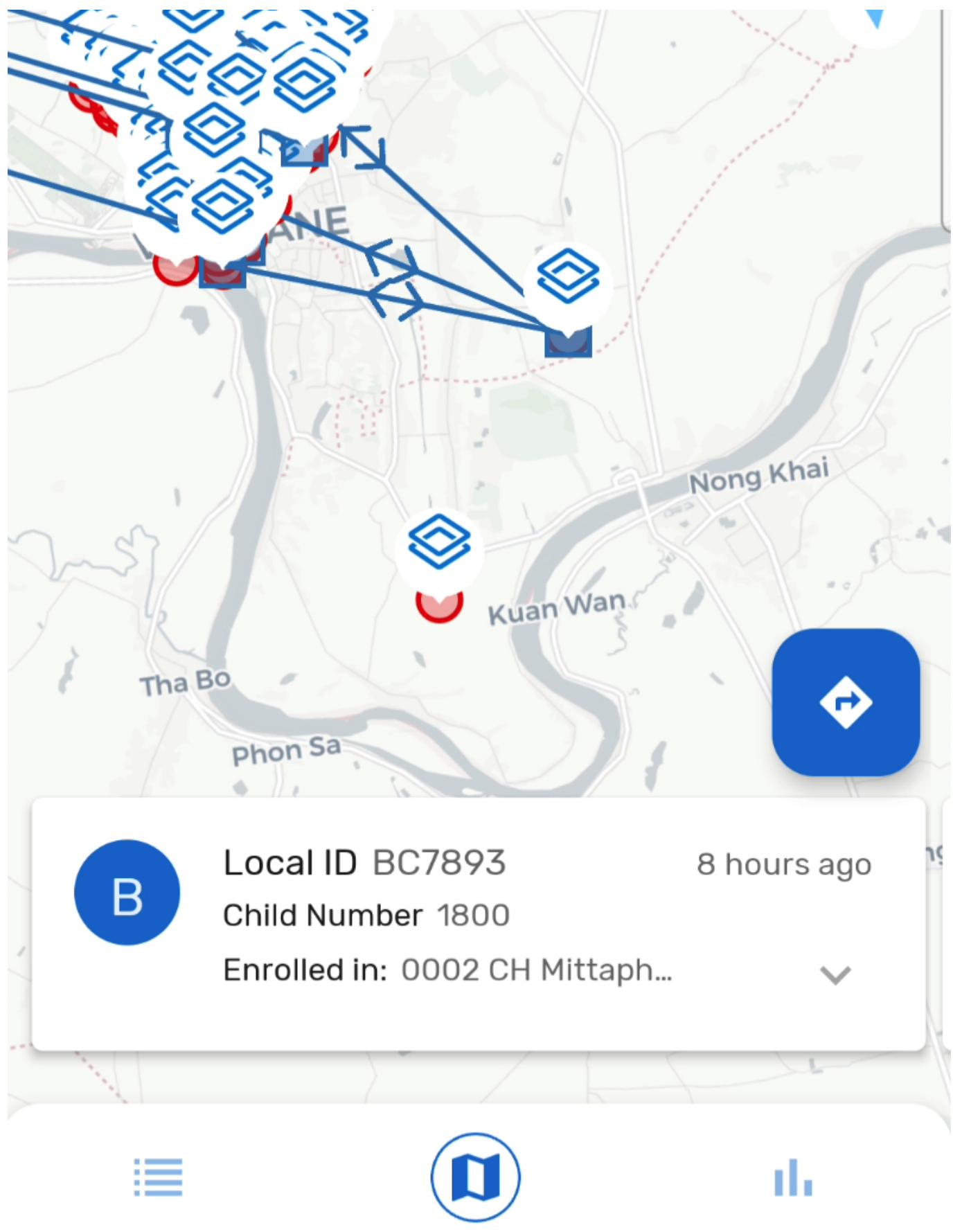
Show heatmap layer



**APPLY**

Once applied you will see bidirectional arrows from both TEI as the Relationship type is bidirectional.





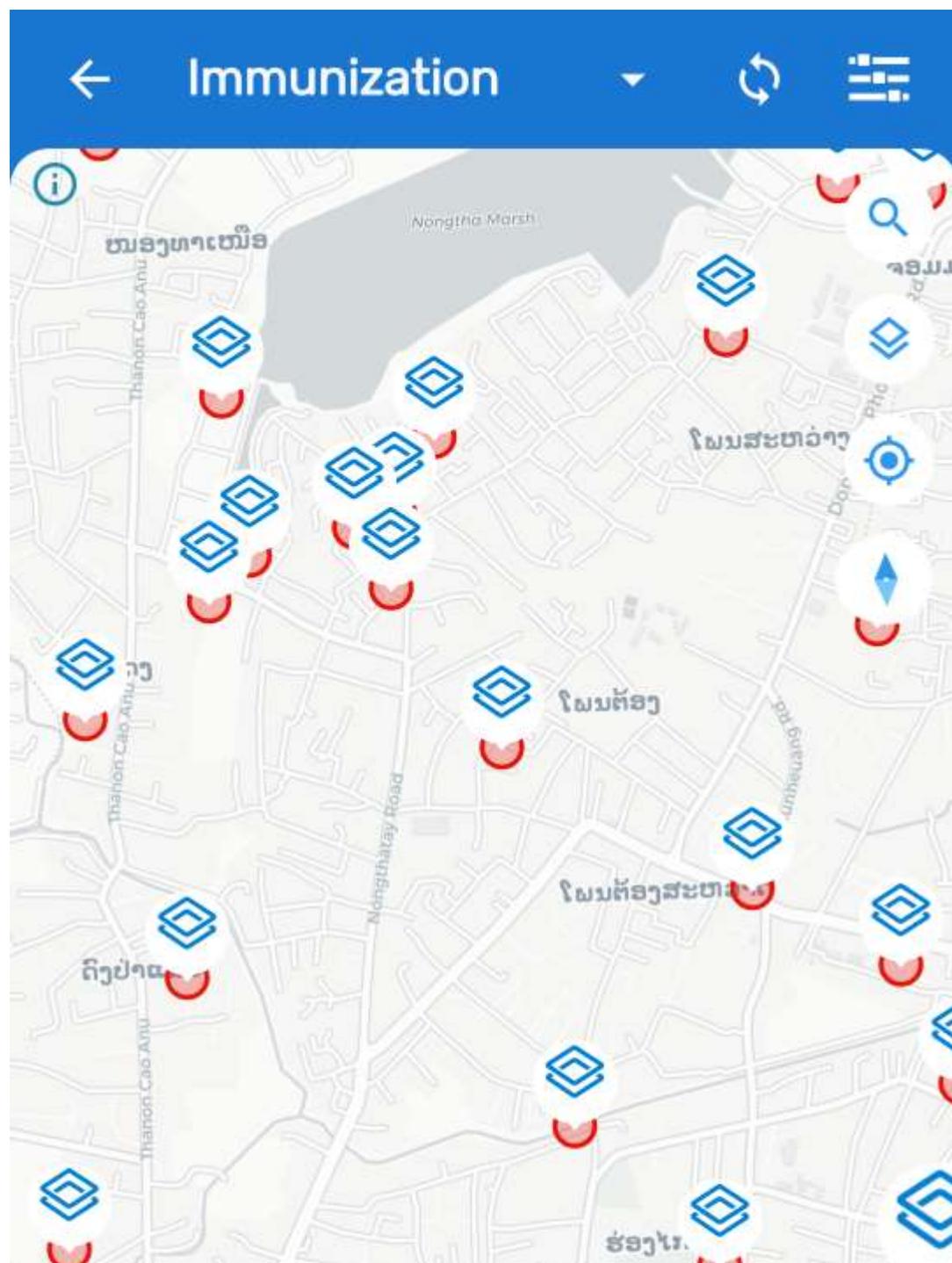
**STOP - End Exercise 4**

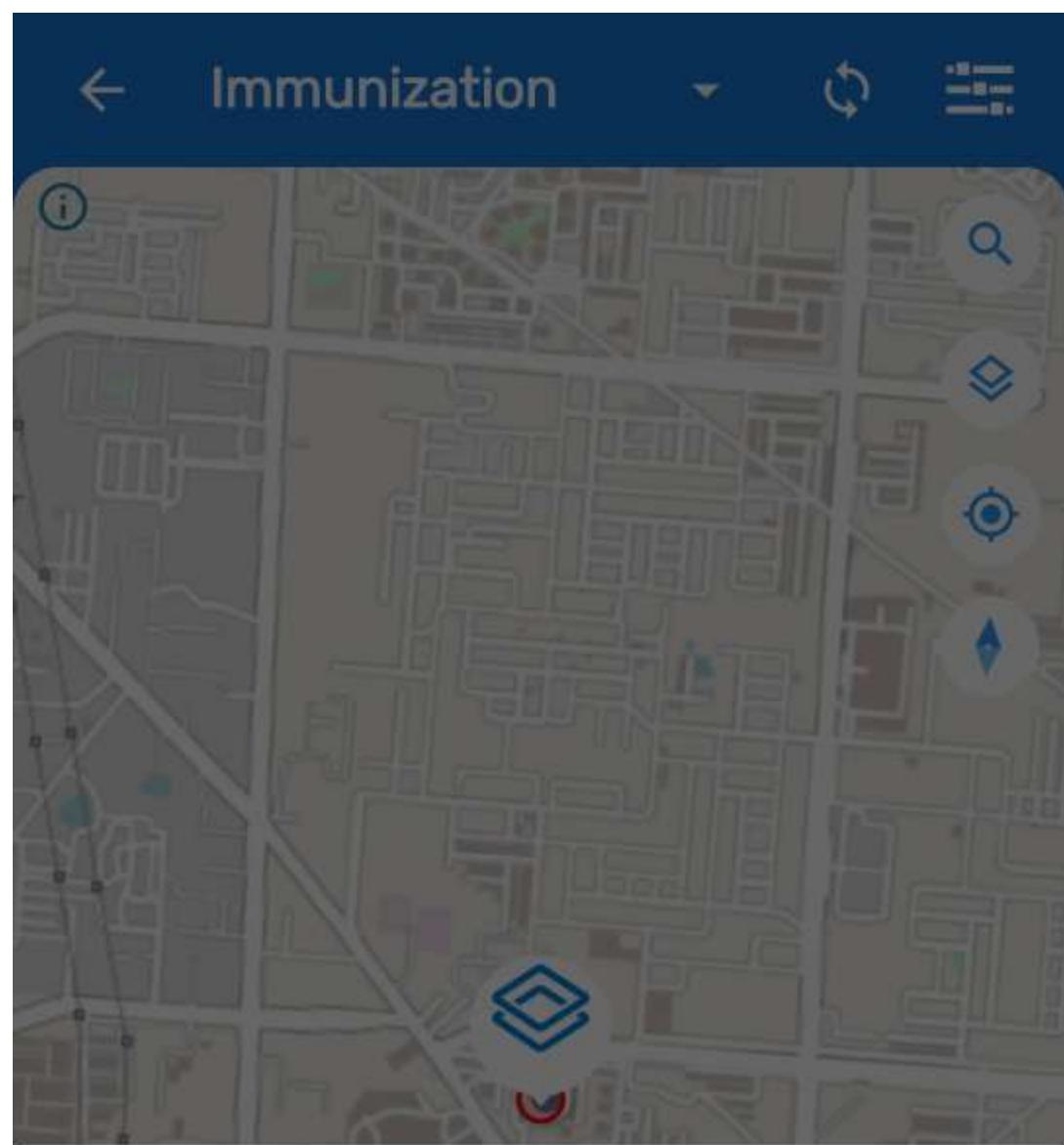
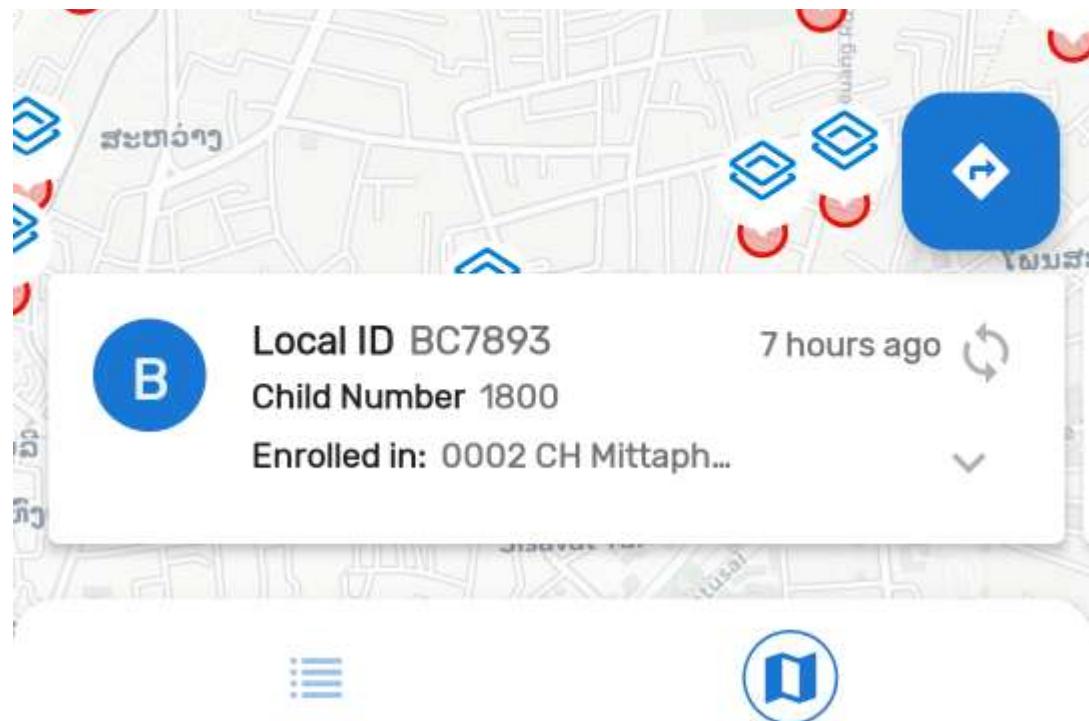
**Exercise 5 - Changing the map layer options**

Map Layers

When displaying maps from the event line list or within a specific TEI, there are different layers that can be displayed by clicking on the settings button on the upper right corner. The user can select one or more layers to be displayed. Both coordinate and polygon types will be displayed. The layers are dependant on the type and configuration of program as explained below:

- Map layers: you can select the base layer used in your map
- Show events (For programs without registration)
- **TEI coordinates** (By default in programs with registration)
- Enrollment Coordinates (Only for programs with registration)
- **Program Stage coordinates** (Only for programs with registration)
- **Relationships** (Only for programs with registration)
- Heatmap (Only for programs with registration)
- Tracked Entity Attributes (Coordinates Value Type - Only for programs with registration)
- Data Elements (Coordinates Value Type)





## Map layers



OSM Light



OSM Detailed



Bing Road



Bing Earth

Show tei coordinates



Immunization



Siblings



Show heatmap layer



**APPLY**

You can toggle some of these layers to see the effect this has on the map.

**STOP - End Exercise 5**