
DHIS2 End User Manual

Use DHIS core version 2.38

DHIS2 Documentation Team



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toc.title

What is DHIS2?

[DHIS2 Background](#)

[Key features and purpose of DHIS2](#)

[Use of DHIS2 in HIS: data collection, processing, interpretation, and analysis.](#)

[Technical background](#)

[Difference between Aggregated and Patient data in a HIS](#)

[Free and Open Source Software \(FOSS\): benefits and challenges](#)

Using the Data Entry app

[About the Data Entry app](#)

[Enter data in a data entry form](#)

[Mark a data value for follow-up](#)

[Edit data values in a completed data entry form](#)

[Display a data value's history](#)

[Display a data value's audit trail](#)

[Create minimum maximum value range manually](#)

[Enter data offline](#)

[Enable multi-organisation unit data entry](#)

[See also](#)

Using the Capture app

[About the Capture app](#)

[Register an event](#)

[Register a tracked entity instance](#)

[Re-enroll an existing tracked entity instance](#)

[Adding a relationship](#)

[Edit an event](#)

[Delete an event](#)

[Modify an event list layout](#)

[Filter an event list](#)

[Sort an event list](#)

[Download an event list](#)

[Predefined list views](#)

[User assignment in events programs](#)

[Tracker programs](#)

[Search for tracked entity instances](#)

[List tracked entity instances enrolled in program](#)

[Tracker program stage working list](#)

[Implementer / administrator info](#)

[Enrollment dashboard](#)

[Enrollment event view and edit page](#)

[Enrollment event new page](#)

[Program stage event list](#)

[Attribute option combo for Tracker](#)

Using the Event Capture app

[About the Event Capture app](#)

[Register an event](#)

[Edit an event](#)

[Edit events in grid](#)

[Share events in edit mode](#)

[View an event audit history](#)

[Delete an event](#)

[Modify an event list's layout](#)

[Print an event list](#)

-
- Download an event list
 - Using the Tracker Capture app
 - About the Tracker Capture app
 - About tracked entity instance (TEI) dashboards
 - Workflow
 - Linking to the Tracker Capture App
 - Create a TEI and enroll it in a program
 - Open an existing TEI dashboard
 - Enroll an existing TEI in a program
 - Enter event data for a TEI
 - How to use geometry
 - How to assign a user to an event
 - Manage a TEI's enrollments
 - Send a message to a TEI
 - Mark a TEI for follow-up
 - Edit a TEI's profile
 - Add a relationship to a TEI
 - Share a TEI dashboard
 - Deactivate a TEI
 - Activate a TEI
 - Delete a TEI
 - Configure the TEI dashboard
 - Create reports
 - Data approval overview
 - Approving and accepting
 - Authorities for approving data
 - Configuring data approval
 - Data visibility
 - Approving data
 - Approving by category option group set
 - Approving by multiple category option group sets
 - Data approval
 - Selecting parameters
 - Approving data
 - Managing dashboards
 - About the Dashboards app
 - Dashboards app layout
 - Creating and editing a dashboard
 - Viewing a dashboard
 - Dashboard items with charts, pivot tables or maps
 - Sharing a dashboard
 - Using the Data Visualizer app
 - Creating and editing visualizations
 - Change the display of your visualization
 - Adding Assigned Categories
 - Adding more axes
 - Using multiple visualization types
 - Data drilling
 - Manage saved visualizations
 - Visualization interpretations
 - Share a visualization
 - Download
 - See visualization as map
-

-
- Using the Line Listing app
 - Creating a line list
 - Using the Maps app
 - About the Maps app
 - Create a new map
 - Manage thematic layers
 - Manage event layers
 - Manage tracked entity layers
 - Manage facility layers
 - Manage org unit layers
 - Manage Earth Engine layer
 - Add external map layers
 - Organisation unit profile
 - File menu
 - Map interpretations
 - Save a map as an image
 - Search for a location
 - Measure distances and areas in a map
 - Get the latitude and longitude at any location
 - See also
 - Analyze data in pivot tables
 - About the Pivot Table app
 - Create a pivot table
 - Change the display of your pivot table
 - Manage favorites
 - Download data from a pivot table
 - Embed a pivot table in an external web page
 - Visualize pivot table data as a chart or a map
 - Using the Event Reports app
 - About the Event Reports app
 - Create an event report
 - Select dimension items
 - Select series, category and filter
 - Change the display of your table
 - Download chart data source
 - Manage favorites
 - Visualize an event report as a chart
 - Using the Event Visualizer app
 - About the Event Visualizer app
 - Create a chart
 - Select a chart type
 - Select dimension items
 - Select series, category and filter
 - Change the display of your chart
 - Download a chart as an image or a PDF
 - Download chart data source
 - Manage favorites
 - Visualize a chart as a pivot table
 - Reporting functionality in the reports app
 - Using standard reports
 - Using dataset reports
 - Using reporting rate summary
 - Using resources
 - Using organisation unit distribution reports
-

Messaging

- About messages and feedback messages

- Create a message

- Read a message

- Create a feedback message

- Attachments

- Manage validation and feedback messages

- Configure feedback message function

- Set user account preferences

What is DHIS2?

After reading this chapter you will be able to understand:

- What is DHIS2 and what purpose it serves with respect to health information systems (HIS)?
- What are the major technological considerations when it comes to deploying DHIS2, and what are the options are for extending DHIS2 with new modules?
- What is the difference between patient based and aggregate data?
- What are some of the benefits and challenges with using Free and Open Source Software (FOSS) for HIS?

DHIS2 Background

DHIS2 is a tool for collection, validation, analysis, and presentation of aggregate and patient-based statistical data, tailored (but not limited) to integrated health information management activities. It is a generic tool rather than a pre-configured database application, with an open meta-data model and a flexible user interface that allows the user to design the contents of a specific information system without the need for programming. DHIS2 is a modular web-based software package built with free and open source Java frameworks.

DHIS2 is open source software released under the BSD license and can be obtained at no cost. It runs on any platform with a Java Runtime Environment (JRE 7 or higher) installed.

DHIS2 is developed by the Health Information Systems Programme (HISP) as an open and globally distributed process with developers currently in India, Vietnam, Tanzania, Ireland, and Norway. The development is coordinated by the University of Oslo with support from NORAD and other donors.

The DHIS2 software is used in more than 40 countries in Africa, Asia, and Latin America, and countries that have adopted DHIS2 as their nation-wide HIS software include Kenya, Tanzania, Uganda, Rwanda, Ghana, Liberia, and Bangladesh. A rapidly increasing number of countries and organisations are starting up new deployments.

The documentation provided herewith, will attempt to provide a comprehensive overview of the application. Given the abstract nature of the application, this manual will not serve as a complete step-by-step guide of how to use the application in each and every circumstance, but rather will seek to provide illustrations and examples of how DHIS2 can be implemented in a variety of situations through generalized examples.

Before implementing DHIS2 in a new setting, we highly recommend reading the DHIS2 Implementation Guide (a separate manual from this one), also available at the main DHIS2 [website](#).

Key features and purpose of DHIS2

The key features and purpose of DHIS2 can be summarised as follows:

- Provide a comprehensive data management solution based on data warehousing principles and a modular structure which can easily be customised to the different requirements of a management information system, supporting analysis at different levels of the organisational hierarchy.
- Customisation and local adaptation through the user interface. No programming required to start using DHIS2 in a new setting (country, region, district etc.).
- Provide data entry tools which can either be in the form of standard lists or tables, or can be customised to replicate paper forms.

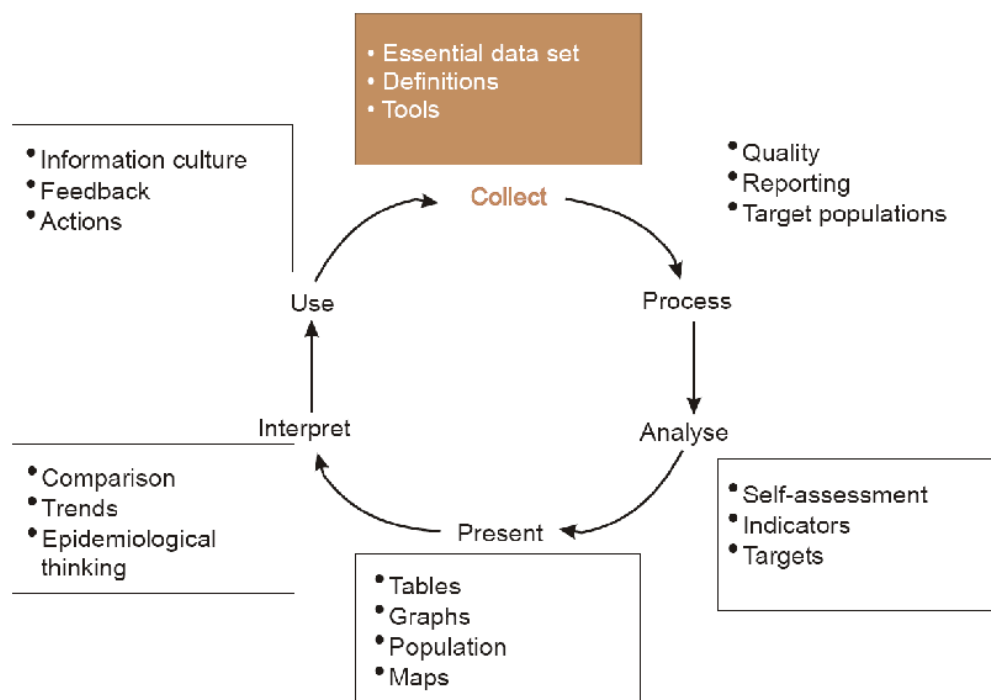
- Provide different kinds of tools for data validation and improvement of data quality.
- Provide easy to use - one-click reports with charts and tables for selected indicators or summary reports using the design of the data collection tools. Allow for integration with popular external report design tools (e.g. JasperReports) to add more custom or advanced reports.
- Flexible and dynamic (on-the-fly) data analysis in the analytics modules (i.e. GIS, PivotTables, Data Visualizer, Event reports, etc).
- A user-specific dashboard for quick access to the relevant monitoring and evaluation tools including indicator charts and links to favourite reports, maps and other key resources in the system.
- Easy to use user-interfaces for metadata management e.g. for adding/editing datasets or health facilities. No programming needed to set up the system in a new setting.
- Functionality to design and modify calculated indicator formulas.
- User management module for passwords, security, and fine-grained access control (user roles).
- Messages can be sent to system users for feedback and notifications. Messages can also be delivered to email and SMS.
- Users can share and discuss their data in charts and reports using Interpretations, enabling an active information-driven user community.
- Functionalities of export-import of data and metadata, supporting synchronisation of offline installations as well as interoperability with other applications.
- Using the DHIS2 Web-API , allow for integration with external software and extension of the core platform through the use of custom apps.
- Further modules can be developed and integrated as per user needs, either as part of the DHIS2 portal user interface or a more loosely-coupled external application interacting through the DHIS2 Web-API.

In summary, DHIS2 provides a comprehensive HIS solution for the reporting and analysis needs of health information users at any level.

Use of DHIS2 in HIS: data collection, processing, interpretation, and analysis.

The wider context of HIS can be comprehensively described through the information cycle presented in Figure 1.1 below. The information cycle pictorially depicts the different components, stages and processes through which the data is collected, checked for quality, processed, analysed and used.

The Information Cycle



The health information cycle

DHIS2 supports the different facets of the information cycle including:

- Collecting data.
- Running quality checks.
- Data access at multiple levels.
- Reporting.
- Making graphs and maps and other forms of analysis.
- Enabling comparison across time (for example, previous months) and space (for example, across facilities and districts).
- See trends (displaying data in time series to see their min and max levels).

As a first step, DHIS2 serves as a data collection, recording and compilation tool, and all data (be it in numbers or text form) can be entered into it. Data entry can be done in lists of data elements or in customised user defined forms which can be developed to mimic paper based forms in order to ease the process of data entry.

As a next step, DHIS2 can be used to increase data quality. First, at the point of data entry, a check can be made to see if data falls within acceptable range levels of minimum and maximum values for any particular data element. Such checking, for example, can help to identify typing errors at the time of data entry. Further, user can define various validation rules, and DHIS2 can run the data through the validation rules to identify violations. These types of checks help to ensure that data entered into the system is of good quality from the start, and can be improved by the people who are most familiar with it.

When data has been entered and verified, DHIS2 can help to make different kinds of reports. The first kind are the routine reports that can be predefined, so that all those reports that need to be routine generated can be done on a click of a button. Further, DHIS2 can help in the generation of analytical reports through comparisons of for example indicators across facilities or over time. Graphs, maps, reports and health profiles are among the outputs that DHIS2 can produce, and these should routinely be produced, analysed, and acted upon by health managers.

Technical background

DHIS2 as a platform

DHIS2 can be perceived as a platform on several levels. First, the application database is designed ground-up with flexibility in mind. Data structures such as data elements, organisation units, forms and user roles can be defined completely freely through the application user interface. This makes it possible for the system to be adapted to a multitude of locale contexts and use-cases. We have seen that DHIS2 supports most major requirements for routine data capture and analysis emerging in country implementations. It also makes it possible for DHIS2 to serve as management system for domains such as logistics, labs and finance.

Second, due to the modular design of DHIS2 it can be extended with additional software modules or through custom apps. These software modules/apps can live side by side with the core modules of DHIS2 and can be integrated into the DHIS2 portal and menu system. This is a powerful feature as it makes it possible to extend the system with extra functionality when needed, typically for country specific requirements as earlier pointed out.

The downside of the software module extensibility is that it puts several constraints on the development process. The developers creating the extra functionality are limited to the DHIS2 technology in terms of programming language and software frameworks, in addition to the constraints put on the design of modules by the DHIS2 portal solution. Also, these modules must be included in the DHIS2 software when the software is built and deployed on the web server, not dynamically during run-time.

In order to overcome these limitations and achieve a looser coupling between the DHIS2 service layer and additional software artefacts, a REST-based API has been developed as part of DHIS2. This Web API complies with the rules of the REST architectural style. This implies that:

- The Web API provides a navigable and machine-readable interface to the complete DHIS2 data model. For instance, one can access the full list of data elements, then navigate using the provided URL to a particular data element of interest, then navigate using the provided URL to the list of data sets which the data element is a member of.
- (Meta) Data is accessed through a uniform interface (URLs) using plain HTTP requests. There are no fancy transport formats or protocols involved - just the well-tested, well-understood HTTP protocol which is the main building block of the Web today. This implies that third-party developers can develop software using the DHIS2 data model and data without knowing the DHIS2 2specific technology or complying with the DHIS2 design constraints.
- All data including meta-data, reports, maps and charts, known as resources in REST terminology, can be retrieved in most of the popular representation formats of the Web of today, such as XML, JSON, PDF and PNG. These formats are widely supported in applications and programming languages and gives third-party developers a wide range of implementation options.

Understanding platform independence

All computers have an Operating System (OS) to manage it and the programs running it. The operating system serves as the middle layer between the software application, such as DHIS2, and

the hardware, such as the CPU and RAM. DHIS2 runs on the Java Virtual Machine, and can therefore run on any operating system which supports Java. Platform independence implies that the software application can run on ANY OS - Windows, Linux, Macintosh etc. DHIS2 is platform independent and thus can be used in many different contexts depending on the exact requirements of the operating system to be used.

Additionally, and perhaps most importantly, since DHIS2 is a browser-based application, the only real requirement to interact with the system is with a web browser. DHIS2 supports most web browsers, although currently either Google Chrome, Mozilla Firefox or Opera are recommended.

Deployment strategies - online vs offline

DHIS2 is a network enabled application and can be accessed over the Internet, a local intranet as well as a locally installed system. The deployment alternatives for DHIS2 are in this chapter defined as i) offline deployment ii) online deployment and iii) hybrid deployment. The meaning and differences will be discussed in the following sections.

Offline Deployment

An off-line deployment implies that multiple standalone off-line instances are installed for end users, typically at the district level. The system is maintained primarily by the end users/district health officers who enters data and generate reports from the system running on their local server. The system will also typically be maintained by a national super-user team who pay regular visits to the district deployments. Data is moved upwards in the hierarchy by the end users producing data exchange files which are sent electronically by email or physically by mail or personal travel. (Note that the brief Internet connectivity required for sending emails does not qualify for being defined as on-line). This style of deployment has the obvious benefit that it works when appropriate Internet connectivity is not available. On the other side there are significant challenges with this style which are described in the following section.

- **Hardware:** Running stand-alone systems requires advanced hardware in terms of servers and reliable power supply to be installed, usually at district level, all over the country. This requires appropriate funding for procurement and plan for long-term maintenance.
- **Software platform:** Local installs implies a significant need for maintenance. From experience, the biggest challenge is viruses and other malware which tend to infect local installations in the long-run. The main reason is that end users utilize memory sticks for transporting data exchange files and documents between private computers, other workstations and the system running the application. Keeping anti-virus software and operating system patches up to date in an off-line environment are challenging and bad practices in terms of security are often adopted by end users. The preferred way to overcome this issue is to run a dedicated server for the application where no memory sticks are allowed and use an Linux based operating system which is not as prone for virus infections as MS Windows.
- **Software application:** Being able to distribute new functionality and bug-fixes to the health information software to users are essential for maintenance and improvement of the system. Relying on the end users to perform software upgrades requires extensive training and a high level of competence on their side as upgrading software applications might a technically challenging task. Relying on a national super-user team to maintain the software implies a lot of travelling.
- **Database maintenance:** A prerequisite for an efficient system is that all users enter data with a standardized meta-data set (data elements, forms etc). As with the previous point about software upgrades, distribution of changes to the meta-data set to numerous off-line installations requires end user competence if the updates are sent electronically or a well-organized super-user team. Failure to keep the meta-data set synchronized will lead to loss of

ability to move data from the districts and/or an inconsistent national database since the data entered for instance at the district level will not be compatible with the data at the national level.

Online deployment

An on-line deployment implies that a single instance of the application is set up on a server connected to the Internet. All users (clients) connect to the on-line central server over the Internet using a web browser. This style of deployment is increasingly possible due to increased availability in (mobile) Internet coverage globally, as well as readily available and cheap cloud-computing resources. These developments make it possible to access on-line servers in even the most rural areas using mobile Internet modems (also referred to as *dongles*).

This on-line deployment style has huge positive implications for the implementation process and application maintenance compared to the traditional off-line standalone style:

- **Hardware:** Hardware requirements on the end-user side are limited to a reasonably modern computer/laptop and Internet connectivity through a fixed line or a mobile modem. There is no need for a specialized server for each user, any Internet enabled computer will be sufficient. A server will be required for on-line deployments, but since there is only one (or several) servers which need to be procured and maintained, this is significantly simpler (and cheaper) than maintaining many separate servers in disparate locations. Given that cloud-computing resources continue to steadily decrease in price while increasing in computational power, setting up a powerful server in the cloud is far cheaper than procuring hardware.
- **Software platform:** The end users only need a web browser to connect to the on-line server. All popular operating systems today are shipped with a web browser and there is no special requirement on what type or version. This means that if severe problems such as virus infections or software corruption occur one can always resort to re-formatting and installing the computer operating system or obtain a new computer/laptop. The user can continue with data entry where it was left and no data will be lost.
- **Software application:** The central server deployment style means that the application can be upgraded and maintained in a centralized fashion. When new versions of the applications are released with new features and bug-fixes it can be deployed to the single on-line server. All changes will then be reflected on the client side the next time end users connect over the Internet. This obviously has a huge positive impact for the process of improving the system as new features can be distributed to users immediately, all users will be accessing the same application version, and bugs and issues can be sorted out and deployed on-the-fly.
- **Database maintenance:** Similar to the previous point, changes to the meta-data can be done on the on-line server in a centralized fashion and will automatically propagate to all clients next time they connect to the server. This effectively removes the vast issues related to maintaining an upgraded and standardized meta-data set related to the traditional off-line deployment style. It is extremely convenient for instance during the initial database development phase and during the annual database revision processes as end users will be accessing a consistent and standardized database even when changes occur frequently.

This approach might be problematic in cases where Internet connectivity is volatile or missing in long periods of time. DHIS2 however has certain features which requires Internet connectivity to be available only part of the time for the system to work properly, such as offline data entry. In general however, DHIS2 does require Internet connectivity of some sort, but this is increasingly an easy problem to solve even in remote locations.

Hybrid deployment

From the discussion so far one realizes that the on-line deployment style is favourable over the off-line style but requires decent Internet connectivity where it will be used. It is important to notice that the mentioned styles can co-exist in a common deployment. It is perfectly feasible to have on-line as well as off-line deployments within a single country. The general rule would be that districts and facilities should access the system on-line over the Internet where sufficient Internet connectivity exist, and off-line systems should be deployed to districts where this is not the case.

Defining decent Internet connectivity precisely is hard but as a rule of thumb the download speed should be minimum 10 Kbyte/second for the client and at least 1 Mbit/sec (dedicated) bandwidth for the server.

In this regard mobile Internet modems which can be connected to a computer or laptop and access the mobile network is an extremely capable and feasible solution. Mobile Internet coverage is increasing rapidly all over the world, often provide excellent connectivity at low prices and is a great alternative to local networks and poorly maintained fixed Internet lines. Getting in contact with national mobile network companies regarding post-paid subscriptions and potential large-order benefits can be a worthwhile effort. The network coverage for each network operator in the relevant country should be investigated when deciding which deployment approach to opt for as it might differ and cover different parts of the country.

Server hosting

The on-line deployment approach raises the question of where and how to host the server which will run the DHIS2 application. Typically there are several options:

1. Internal hosting within the Ministry of Health
2. Hosting within a government data centre
3. Hosting through an external hosting company

The main reason for choosing the first option is often political motivation for having “physical ownership” of the database. This is perceived as important by many in order to “own” and control the data. There is also a wish to build local capacity for server administration related to sustainability of the project. This is often a donor-driven initiatives as it is perceived as a concrete and helpful mission.

Regarding the second option, some places a government data centre is constructed with a view to promoting and improving the use and accessibility of public data. Another reason is that a proliferation of internal server environments is very resource demanding and it is more effective to establish centralized infrastructure and capacity.

Regarding external hosting there is lately a move towards outsourcing the operation and administration of computer resources to an external provider, where those resources are accessed over the network, popularly referred to as “cloud computing” or “software as a service”. Those resources are typically accessed over the Internet using a web browser.

The primary goal for an on-line server deployment is provide long-term stable and high-performance accessibility to the intended services. When deciding which option to choose for server environment there are many aspects to consider:

1. Human capacity for server administration and operation. There must be human resources with general skills in server administration and in the specific technologies used for the application providing the services. Examples of such technologies are web servers and database management platforms.
 2. Reliable solutions for automated backups, including local off-server and remote backup.
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3. Stable connectivity and high network bandwidth for traffic to and from the server.
4. Stable power supply including a backup solution.
5. Secure environment for the physical server regarding issues such as access, theft and fire.
6. Presence of a disaster recovery plan. This plan must contain a realistic strategy for making sure that the service will be only suffering short down-times in the events of hardware failures, network downtime and more.
7. Feasible, powerful and robust hardware.

All of these aspects must be covered in order to create an appropriate hosting environment. The hardware requirement is deliberately put last since there is a clear tendency to give it too much attention.

Looking back at the three main hosting options, experience from implementation missions in developing countries suggests that all of the hosting aspects are rarely present in option one and two at a feasible level. Reaching an acceptable level in all these aspects is challenging in terms of both human resources and money, especially when compared to the cost of option three. It has the benefit that it accommodates the mentioned political aspects and building local capacity for server administration, on the other hand can this be provided for in alternative ways.

Option three - external hosting - has the benefit that it supports all of the mentioned hosting aspects at a very affordable price. Several hosting providers - of virtual servers or software as a service - offer reliable services for running most kinds of applications. Example of such providers are [Linode](#) and [Amazon Web Services](#). Administration of such servers happens over a network connection, which most often anyway is the case with local server administration. The physical location of the server in this case becomes irrelevant as that such providers offer services in most parts of the world. This solution is increasingly becoming the standard solution for hosting of application services. The aspect of building local capacity for server administration is compatible with this option since a local ICT team can be tasked with maintaining the externally hosted server, but with not being burdened with worrying about power supply and bandwidth constraints which usually exist outside of major data centres.

An approach for combining the benefits of external hosting with the need for local hosting and physical ownership is to use an external hosting provider for the primary transactional system, while mirroring this server to a locally hosted non-critical server which is used for read-only purposes such as data analysis and accessed over the intranet.

Difference between Aggregated and Patient data in a HIS

Patient data is data relating to a single patient, such as his/her diagnosis, name, age, earlier medical history etc. This data is typically based on a single patient-health care worker interaction. For instance, when a patient visits a health care clinic, a variety of details may be recorded, such as the patient's temperature, their weight, and various blood tests. Should this patient be diagnosed as having "Vitamin B 12 deficiency anaemia, unspecified" corresponding to ICD-10 code D51.9, this particular interaction might eventually get recorded as an instance of "Anaemia" in an aggregate based system. Patient based data is important when you want to track longitudinally the progress of a patient over time. For example, if we want to track how a patient is adhering to and responding to the process of TB treatment (typically taking place over 6-9 months), we would need patient based data.

Aggregated data is the consolidation of data relating to multiple patients, and therefore cannot be traced back to a specific patient. They are merely counts, such as incidences of Malaria, TB, or other diseases. Typically, the routine data that a health facility deals with is this kind of aggregated statistics, and is used for the generation of routine reports and indicators, and most importantly, strategic planning within the health system. Aggregate data cannot provide the type of detailed information

which patient level data can, but is crucial for planning and guidance of the performance of health systems.

In between the two you have case-based data, or anonymous "patient" data. A lot of details can be collected about a specific health event without necessarily having to identify the patient it involved. Inpatient or outpatient visits, a new case of cholera, a maternal death etc. are common use-cases where one would like to collect a lot more detail than just adding to the total count of cases, or visits. This data is often collected in line-listing type of forms, or in more detailed audit forms. It is different from aggregate data in the sense that it contains many details about a specific event, whereas the aggregate data would count how many events of a certain type, e.g. how many outpatient visits with principal diagnosis "Malaria", or how many maternal deaths where the deceased did not attend ANC, or how many cholera outbreaks for children under 5 years. In DHIS2 this data is collected through programs of the type single event without registration.

Patient data is highly confidential and therefore must be protected so that no one other than doctors can get it. When in paper, it must be properly stored in a secure place. For computers, patient data needs secure systems with passwords, restrained access and audit logs.

Security concerns for aggregated data are not as crucial as for patient data, as it is usually impossible to identify a particular person to a aggregate statistic . However, data can still be misused and misinterpreted by others, and should not be distributed without adequate data dissemination policies in place.

Free and Open Source Software (FOSS): benefits and challenges

Software carries the instructions that tell a computer how to operate. The human authored and human readable form of those instructions is called source code. Before the computer can actually execute the instructions, the source code must be translated into a machine readable (binary) format, called the object code. All distributed software includes the object code, but FOSS makes the source code available as well.

Proprietary software owners license their copyrighted object code to a user, which allows the user to run the program. FOSS programs, on the other hand, license both the object and the source code, permitting the user to run, modify and possibly redistribute the programs. With access to the source code, the users have the freedom to run the program for any purpose, redistribute, probe, adapt, learn from, customise the software to suit their needs, and release improvements to the public for the good of the community. Hence, some FOSS is also known as free software, where "free" refers, first and foremost, to the above freedoms rather than in the monetary sense of the word.

Within the public health sector, FOSS can potentially have a range of benefits, including:

- Lower costs as it does not involve paying for prohibitive license costs.
- Given the information needs for the health sector are constantly changing and evolving, there is a need for the user to have the freedom to make the changes as per the user requirements. This is often limited in proprietary systems.
- Access to source code to enable integration and interoperability. In the health sector interoperability between different software applications is becoming increasingly important, meaning enabling two or more systems to communicate metadata and data. This work is a lot easier, and sometimes dependent on the source code being available to the developers that create the integration. This availability is often not possible in the case of proprietary software. And when it is, it comes at a high cost and contractual obligations.
- FOSS applications like DHIS2 typically are supported by a global network of developers, and thus have access to cutting edge research and development knowledge.

Using the Data Entry app

About the Data Entry app

The **Data Entry** app is where you manually enter aggregated data in DHIS2. You register data for an organisation unit, a period, and a set of data elements (data set) at a time. A data set often corresponds to a paper-based data collection tool. You configure the data sets in the **Maintenance** app.

Note

If a data set has both a section form and a custom form, the system displays the custom form during data entry. Users who enter data can't select which form they want to use. In web-based data entry the order of display preference is:

1. Custom form (if it exists)
2. Section form (if it exists)
3. Default form

Mobile devices do not support custom forms. In mobile-based data entry the order of display preference is:

1. Section form (if it exists)
2. Default form

When you close an organisation unit, you can't register or edit data to this organisation unit in the **Data Entry** app.

Enter data in a data entry form

The screenshot shows the DHIS2 Data Entry app interface. The top navigation bar includes the 'dhis2' logo, the text 'DHIS 2 Demo - Sierra Leone', and icons for 'Apps' and 'Profile'. On the left, a tree view shows the hierarchy of organisation units, with 'Ngelehun CHC' selected. The main content area is titled 'Data Entry' and displays a form for the selected organisation unit. The form includes fields for 'Organisation Unit' (Ngelehun CHC), 'Data Set' (Mortality < 5 years), and 'Period' (December 2014). There are also buttons for 'Prev year' and 'Next year'. To the right of the form are buttons for 'Run validation', 'Print form', and 'Print blank form'. Below the form is a table titled 'default' with two columns: 'Filter in section' and 'Value'. The table lists various diseases and their death counts for the period. At the bottom of the form are buttons for 'Complete', 'Incomplete', and 'Run validation'.

Filter in section	Value
Accute Flaccid Paralysis (Deaths < 5 yrs)	
Animal Bites - Rabid (Deaths < 5 yrs)	
Cholera (Deaths < 5 yrs)	
Dysentery (Deaths < 5 yrs)	
Louse Borne Typhus - Relapsing fever (Deaths < 5 yrs)	
Malaria (Deaths < 5 yrs)	
Measles (Deaths < 5 yrs)	
Meningitis (Deaths < 5 yrs)	
Plague (Deaths < 5 yrs)	
Rabies (Deaths < 5 yrs)	
Tetanus Neonatal (Deaths < 5 yrs)	
Tetanus Other (Deaths < 5 yrs)	
Typhoid (Deaths < 5 yrs)	
Yellow Fever (Deaths < 5 yrs)	

1. Open the **Data Entry** app.
2. In the organisation unit tree to the left, select an organisation unit.
3. Select a **Data set**.
4. Select a **Period**.

The available periods are controlled by the period type of the data set (reporting frequency). You can jump a year back or forward by clicking **Prev year** or **Next year**.

Note


Depending on how you've configured the data entry form, you might have to enter additional information before you can open the date entry form. This can for example be a project derived from a category combination.

5. Enter data in the data entry form.
 - A green field means that the system has saved the value.
 - 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, press the Tab key or the Down Arrow key.
 - To move back to the previous field, press Shift+Tab or the Up Arrow key.
 - If you type in an invalid value, for example a character in a field that only accepts numeric values, you'll get a pop-up that explains the problem and the field will be coloured yellow (not saved) until you have corrected the value.
 - If you have defined a minimum maximum value range for the field and you enter a value that is outside this range, you'll get a pop-up message that says the value is out of range. The value remains unsaved until you've changed the value or updated the value range and then re-entered the value.
6. When you've filled in the form, click **Run validation** in the top right corner or below the data entry form.

All validation rules which involves data elements in the current data entry form (data set) are then run against the new data. If there are no violations of the validation rules, you'll see a message saying *The data entry screen successfully passed validation*. If there are validation violations, they will be presented in a list.

Validation ✕

Validation Result 

The data entry screen has the following validation errors, please correct

Validation rule	Left side	Operator	Right side
Slept under LLIN at measles (fixed < 1y) cannot be higher than measles doses given (fixed < 1y)	7.0	<=	4.0

7. (Optional) Correct validation violations.

Note

Zero (0) will delete the value if the data element has been configured to not store zeros.

8. When you've corrected errors and you're done with data entry, click **Complete**.

The system uses this information when generating completeness reports for district, county, province or the national level.

Mark a data value for follow-up

ANC 1st visit (Fixed)
✕

Comment ★

Save comment

Min-max limits

■ Min limit	<input style="width: 60%;" type="text" value="1"/>
■ Max limit	<input style="width: 60%;" type="text" value="23"/>
■ Average	14.2

Stored by: Tom Wakiki

Last updated: 2014-03-05

Data element history

Audit trail

Month	Value
January 2013	15.0
February 2013	5.0
March 2013	7.0
April 2013	15.0
May 2013	20.0
June 2013	20.0
July 2013	11.0
August 2013	17.0
September 2013	14.0
October 2013	16.0
November 2013	20.0
December 2013	13.0
January 2014	12.0

If you for example have a suspicious value that you need to investigate further, you can keep it the system, but mark it for follow-up. In the **Data Quality** app you can then run a follow-up analysis to view and correct all marked values.

1. Open the **Data Entry** app.
2. Open an existing data entry form.
3. Double-click the field with the value you want to mark for follow-up.
4. Click the star icon.

Edit data values in a completed data entry form

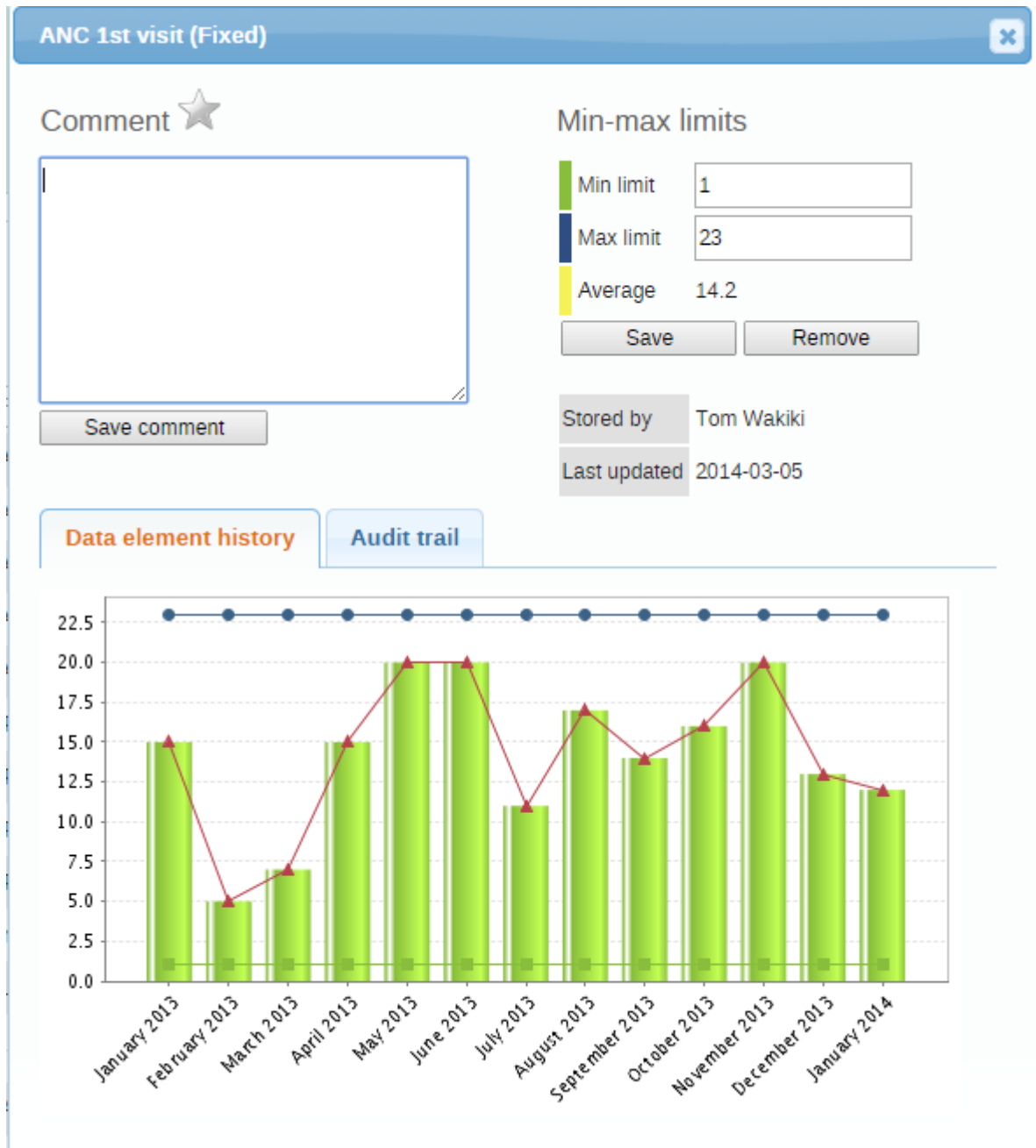
1. Open the **Data Entry** app.
2. Open an existing data entry form.

3. Click **Incomplete**.
4. Change the relevant data values.

Note

Zero (0) will delete the value if the data element has been configured to not store zeros,

5. Click **Complete**.

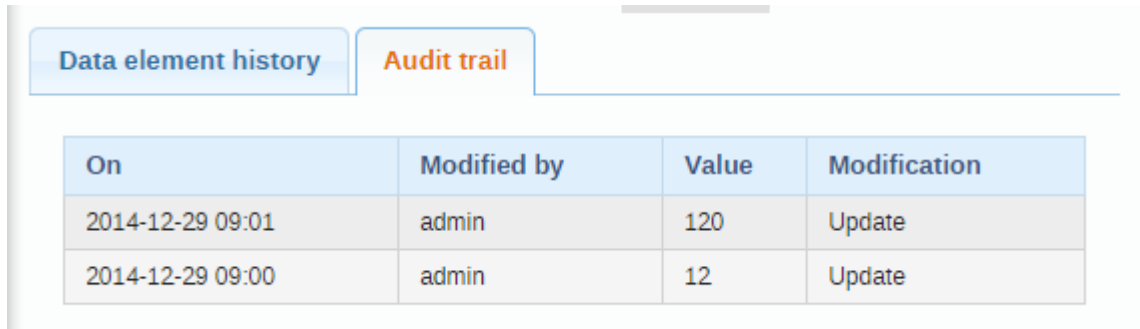
Display a data value's history

You can display the last 12 values registered for a field.

1. Open the **Data Entry** app.
2. Open an existing data entry form.

3. Double-click the field with the value you want to view the history for.
4. Click **Data element history**.

Display a data value's audit trail



On	Modified by	Value	Modification
2014-12-29 09:01	admin	120	Update
2014-12-29 09:00	admin	12	Update

The audit trail allows you to view other data values which have been entered prior to the current value. The audit trail also shows when the data value was altered and which user who made the changes.

1. Open the **Data Entry** app.
2. Open an existing data entry form.
3. Double-click the field with the value you want to view the audit trail for.
4. Click **Audit trail**.

Create minimum maximum value range manually

ART enrollment stage 1 Male, <15y
✕

Comment ★

Min-max limits

■ Min limit	<input style="width: 60%;" type="text" value="1"/>
■ Max limit	<input style="width: 60%;" type="text" value="23"/>
■ Average	<input style="width: 60%;" type="text" value="0.0"/>

Stored by: John Traore

Last updated: 2016-03-08

Data element history

Audit trail

Month	Blue Line Value	Green Line Value
February 2015	22.5	1.0
March 2015	22.5	1.0
April 2015	22.5	1.0
May 2015	22.5	1.0
June 2015	22.5	1.0
July 2015	22.5	1.0
August 2015	22.5	1.0
September 2015	22.5	1.0
October 2015	22.5	1.0
November 2015	22.5	1.0
December 2015	22.5	1.0
January 2016	22.5	1.0
February 2016	22.5	1.0

1. In the **Data Entry** app, open a data entry form.
2. Double-click the field for which you want to set the minimum maximum value range.
3. Enter **Min limit** and **Max limit**.
4. Click **Save**.

If values don't fall within the new value range the next time you enter data, the data entry cell will appear with an orange background.

5. (Optional) Type a comment to explain the reason for the discrepancy, for example an event at a facility which may have generated a large number of clients.
6. (Optional) Click **Save comment**.

Tip

Click the star icon to mark the value for further follow-up.

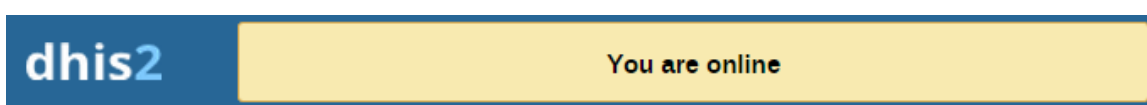
Enter data offline

The **Data Entry** app works even if you don't have a stable Internet connection during data entry. When you don't have an internet connection, the data you enter is saved to your local computer. When the Internet connection is back, the app will push the data to the server. The total bandwidth usage is reduced since data entry forms no longer are retrieved from the server for each rendering.

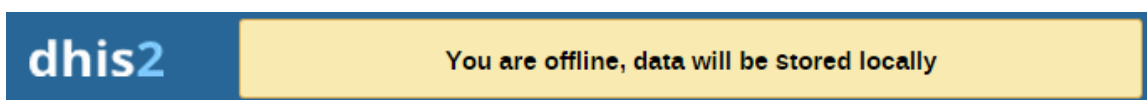
Note

To use this functionality, you must login to the server while you've an Internet connection.

- When you're connected to the Internet, the app displays this message at the top of the data entry form:

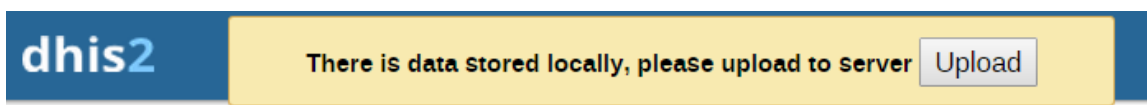


- If your Internet connection breaks during data entry, the app detects it and displays this message:



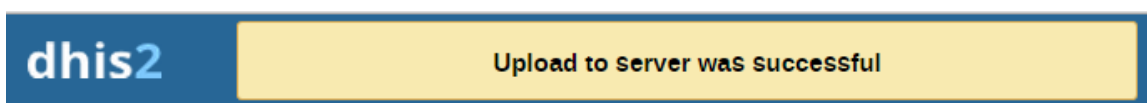
Now your data will be stored locally. You can continue to enter data as normal.

- Once you have entered all necessary data and the app detects that the Internet connection is back, you'll see this message:



Click **Upload** to synchronize data with the server.

- When the data has successfully synchronized with the server, you'll see this confirmation message:



Enable multi-organisation unit data entry

Data Entry 

Organisation Unit

Data Set

Period

	BCG doses given				Fully Immunized child				LLITN g ¹	
	Fixed		Outreach		Fixed		Outreach		Fixed	
	<1y	>1y	<1y	>1y	<1y	>1y	<1y	>1y	<1y	>1y
Ngelehun CHC	12	23	23	23	7	23				
Njandama MCHP	14									

	Children getting therapeutic feeding				Children supplied with food supplementes				Mebendazole/Albendazo	
	Fixed		Outreach		Fixed		Outreach		Fixed	
	<1y	>1y	<1y	>1y	<1y	>1y	<1y	>1y	<1y	>1y
Ngelehun CHC	8	16	123							14
Njandama MCHP										12

It can be useful to enter data for multiple organisation units in the same data entry form, for instance if there are few data elements in the form and a huge number of organisation units in the hierarchy. In that case, you can enable multi-organisation unit data entry.

Note

Multi-organisation unit data entry only works for section forms.

1. Open the **System Settings** app.
2. Select **Enable multi-organisation unit forms**.
3. In the **Data Entry** app, select the organisation unit immediately above the organisation unit you want to enter data for in the organisation unit hierarchy.

Data elements will appear as columns and organisation units as rows in the form.

Note

The data entry forms should still be assigned to the facilities that you actually enter data for, that is the organisation units now appearing in the form.

See also

- [Control data quality](#)
- [Manage data sets and data entry forms](#)
- [Using the Maintenance app](#)

Using the Capture app

About the Capture app

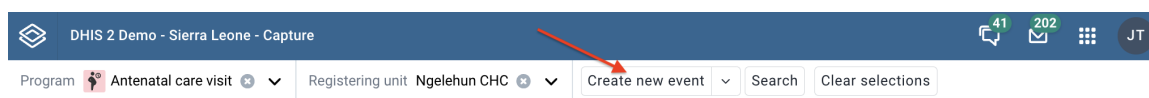
In the Capture app you register events that occurred at a particular time and place. An event can happen at any given point in time. This stands in contrast to routine data, which is captured for predefined, regular intervals. Events are sometimes called cases or records. In DHIS2, events are linked to a program. The Capture app lets you select the organisation unit and program and specify a date when an event happened, before entering information for the event. Some events are linked to a tracked entity instance, for example a person, allowing longitudinal follow-up.

Register an event

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select an event program.

You will only see programs associated with the selected organisation unit and programs you have access to, and that are shared with your user group through data level sharing.

4. If the program has a category combination set the category option will have to be selected.
5. Click **Create new event**.



create new event

6. Fill in the required information. If the programs program stage is configured to capture a location:
 - If the field is a coordinate field you can either enter the coordinates directly or you can click the **map** icon to the left of the coordinate field. The latter one will open a map where you can search for a location or set on directly by clicking on the map.
 - If the field is a polygon field you can click the **map** icon to the left of the field. This will open a map where you can search for a location and capture a polygon (button in the upper right corner of the map).
7. If desired, you can add a note by clicking the **Write note** button at the bottom of the form. Be aware that Event notes are attributed to a user and cannot be deleted.
8. If desired you can add a relationship by clicking the **Add relationship** button at the bottom of the form. See the section about **Adding a relationship** for more information.
9. Click **Save and exit** or click the arrow next to the button to select **Save and add another**.
 - **Save and add another** will save the current event and clear the form. All the events that you have captured will be displayed in a list at the bottom of the page. When you want to finish capturing events you can, if the form is blank, click the finish button or if your form contains data click the arrow next to **Save and add another** and select **Save and exit**.

Note

Some data elements in an event might be mandatory (marked with a red star next to the data element label). All mandatory data elements must be filled in before the user is allowed to complete the event. The exception to this is if the user has the authority called **"Ignore validation of required fields in Tracker and Event Capture"**. If the user has this authority, the mandatory data elements will not be required and the red star will not be displayed next to the data element label. Note that super user that have the **"ALL"** authority automatically have this authority.

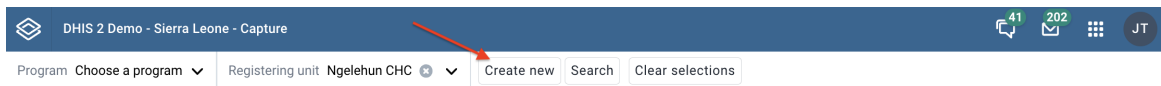
Tip
The data entry form can also be displayed in **row view**. In this mode the data elements are arranged horizontally. This can be achieved by clicking the **Switch to row view** button on the top right of the data entry form. If you are currently in **row view** you can switch to the default form view by clicking the **Switch to form view** button on the top right of the data entry form.

Register a tracked entity instance

There are two different ways one can register a tracked entity instance under an organisation unit. The first way, is to register a tracked entity instance without enrolling it to a tracker program. The second option, is to register a tracked entity instance with program and enroll it.

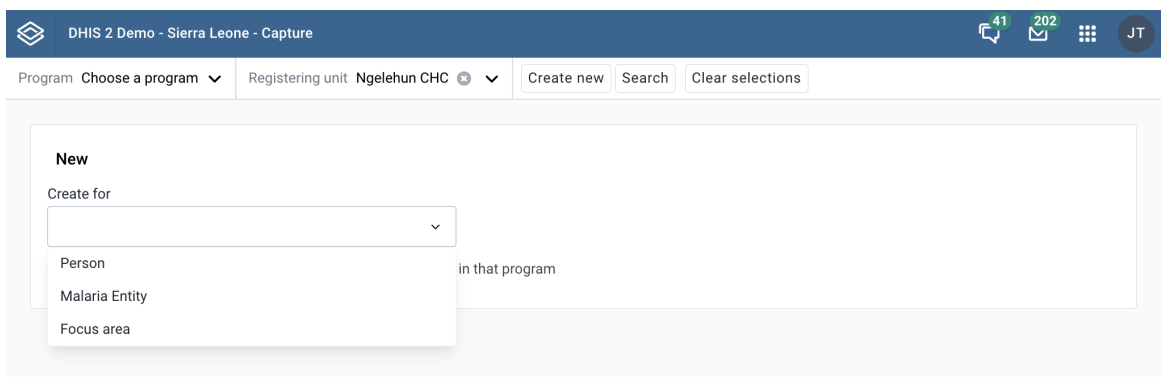
Without a program enrollment

1. Open the **Capture** app.
2. Select an organisation unit.
3. Click **Create new**.



image

You'll now be navigated to the registration page. In that page you will see a drop down menu similar to the one in the image below. From the dropdown menu you can select a tracked entity type, eg. Building, Person etc.



image

4. Select the tracked entity type which you want to create a new instance for.

The screenshot shows the 'New' form in the DHIS 2 Demo - Sierra Leone - Capture app. The 'Create for' dropdown menu is open, showing options: Person, Malaria Entity, and Focus area. A red arrow points to 'Person'.

image

5. The moment you select a tracked entity type, a form will be shown on the screen.

The "Profile" section will be shown. In this section you can add data relevant to the tracked entity instance. The profile section mainly contains all the tracked entity attributes linked to the tracked entity type.

The screenshot shows the 'New person' form in the DHIS 2 Demo - Sierra Leone - Capture app. The 'Create for' dropdown is set to 'Person'. The 'Profile' section is visible, containing fields for Unique ID (9348078), First name, and Last name. There are 'Save person' and 'Cancel' buttons.

image

6. Fill in the required information.

If the tracked entity type is configured to capture a location:

- If the field is a coordinate field you can either enter the coordinates directly or you can click the **map** icon to the left of the coordinate field. The latter one will open a map where you can search for a location or set on directly by clicking on the map.
- If the field is a polygon field you can click the **map** icon to the left of the field. This will open a map where you can search for a location and capture a polygon (button in the upper right corner of the map).

7. Click the **Save person** button to register the tracked entity instance.
8. You will now be prompted to the tracked entity instance dashboard.

The dashboard will show relevant information about the newly created tracked entity instance.

With a program enrollment

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select a tracker program of your choice.
4. Click **Create new person**. Note that the label of this button corresponds to the tracked entity type of the program, which could vary, such as "Building," "Person," etc.



create new event

5. Now, you will be able to see a form similar to the image below.

The enrollment form has different layouts depending on how the program is customized. The top section has the title "Enrollment", and it holds all the relevant information about the enrollment details. This section will always be present, regardless of layout. Underneath, the different data input fields relevant to the tracked entity instance will be displayed. These fields will either be displayed within sections or as a completely custom form. The sections, or custom form, mainly contains all the tracked entity attributes linked to the program or tracked entity type.

create new event

6. Fill in the required information for the enrollment. If the tracked entity type is configured to capture a location:
 - If the field is a coordinate field you can either enter the coordinates directly or you can click the **map** icon to the left of the coordinate field. The latter one will open a map where you can search for a location or set on directly by clicking on the map.
 - If the field is a polygon field you can click the **map** icon to the left of the field. This will open a map where you can search for a location and capture a polygon (button in the upper right corner of the map).
7. Click **Save person** to register the tracked entity instance. The **Save** button shows a loading spinner and the **Cancel** button is disabled while the request is processing.
8. You will now be prompted to the tracked entity instance dashboard.

The dashboard will show relevant information about the newly created tracked entity instance.

Note

Some data elements in an event might be mandatory (marked with a red star next to the data element label). All mandatory data elements must be filled in before the user is allowed to complete the event. The exception to this is if the user has the authority called "**Ignore validation of required fields in Tracker and Event Capture**". If the user has this authority, the mandatory data elements will not be required and the red star will not be displayed next to the data element label. Note that super user that have the "**ALL**" authority automatically have this authority.

Tip

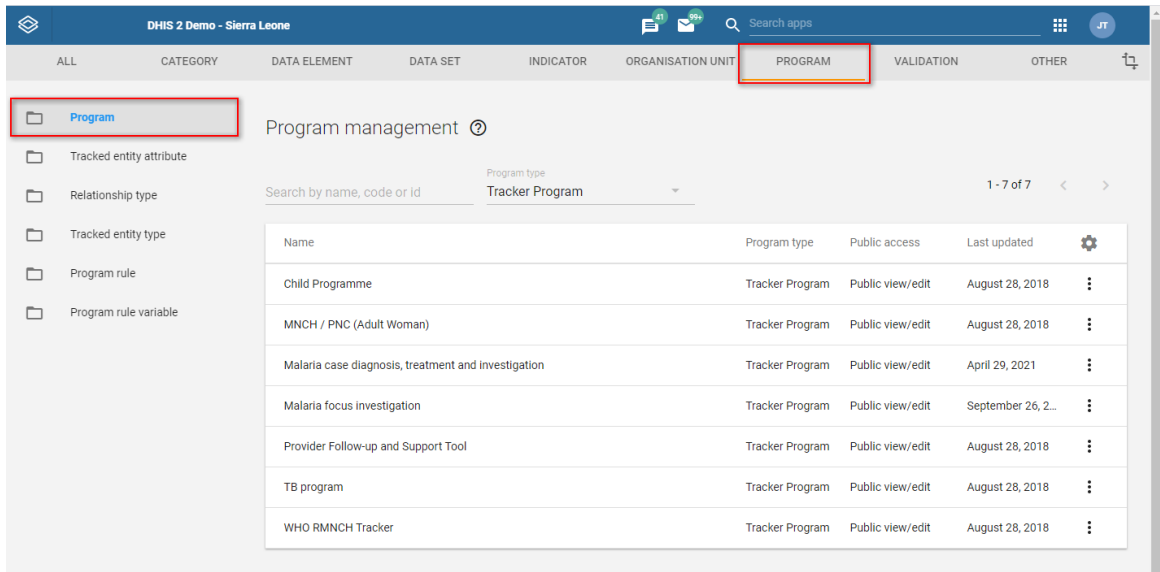
The data entry form can also be displayed in **row view**. In this mode the data elements are arranged horizontally. This can be achieved by clicking the **Switch to row view** button on the top right of the data entry form. If you are currently in **row view** you can switch to the default form view by clicking the **Switch to form view** button on the top right of the data entry form.

Enrollment with auto generated events

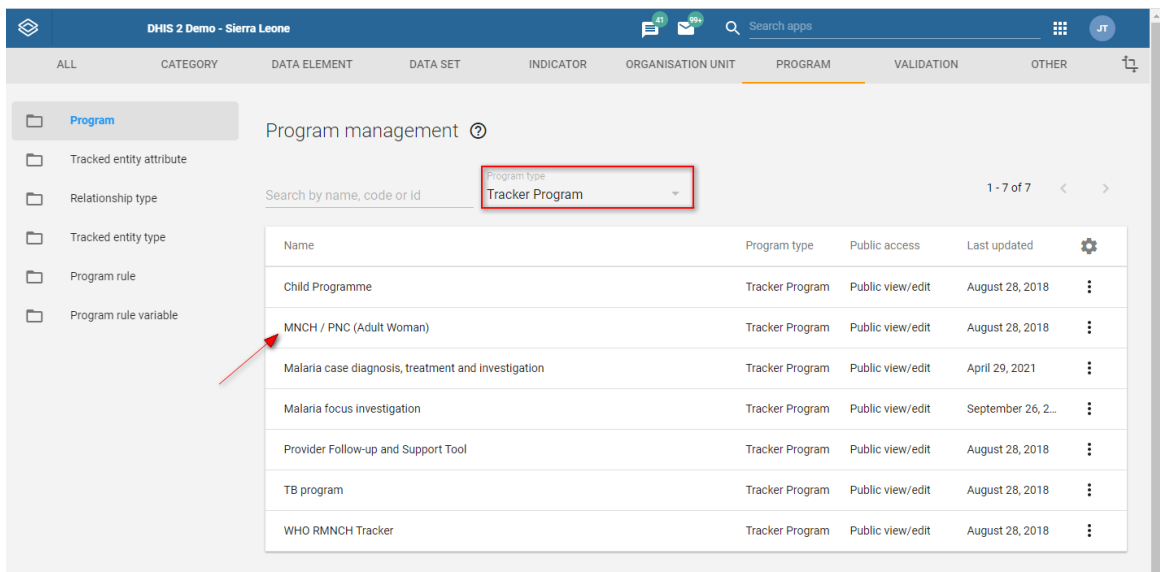
Events can automatically be created when enrolling in a program.

To automatically generate events, you can do the necessary configuration in the maintenance app. 1. Open the maintenance app

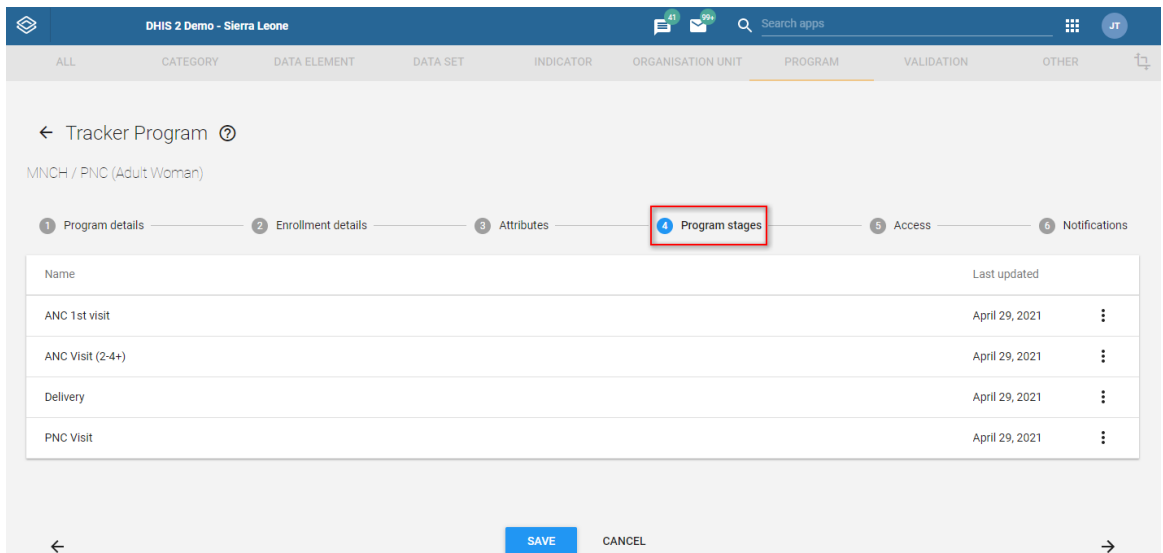
1. Select the Program tab



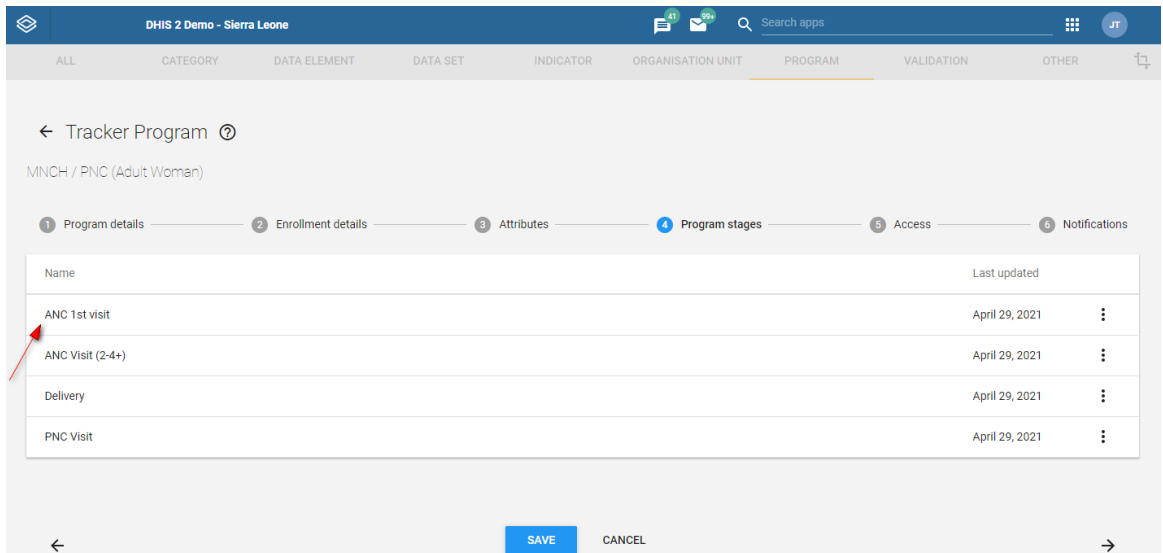
2. Select a Tracker program



3. Select the Program stages tab



4. Click on the program stage you would like to generate an event for



5. Select "Auto-generate event"

The screenshot shows the 'Stage Details' configuration page for a program stage named 'ANC 1st visit'. The page is divided into several sections:

- Name:** ANC 1st visit
- Color:** #F57F17 (with an 'UNSET COLOR' button)
- Icon:** ADD ICON
- Description:** ANC 1st visit
- Scheduled days from start (*):** 0
- Repeatable:**
- Period type:** (dropdown menu)
- Display generate event box when completed:**
- Standard interval days:** (input field)
- Default next scheduled date:** (dropdown menu)
- Auto-generate event:** (highlighted with a red box)
- Open data entry form after enrollment:**

You can set multiple program stages within a program to be auto-generating (this will create an event for each program stage configured this way)

Enrollment with open data entry form

A program can be configured to automatically take the user to register a new event immediately after enrolling a tracked entity instance. To enable this behavior, the program must have at least one program stage with the "Open data entry form after registration" option checked. If more than one program stage has this option enabled, the first stage will be used.

To configure it, you must follow the steps described in the [Enrollment with auto generated events](#) section and then check the option "Open data entry form after enrollment".

Enrollment with first stage on registration page

For tracker programs enable the "First stage appears on registration page" flag in the Maintenance. The enrollment registration page will now display the first program stage the user has access to.

New person in program: Child Programme

Enrollment

Date of enrollment * 2023-09-28

Profile

First name

Last name

Unique ID

Birth - Basic info

Report date *

Birth - Details

Appgar Score

Weight (g) *

Birth - Status

Complete event Yes

Save person

Indicators 1

Measles + Yellow fever doses 0

Active type of event

If the stage has the "Open data entry form after enrollment" selected, then the event will be generated into the ACTIVE status. Also its execution date will be calculated for the event, in addition to a due date. The generation happens based on either the enrollment date or the incident date. You can choose the reporting date from the dropdown menu "Report date to use".

DHIS 2 Demo - Sierra Leone

ALL CATEGORY DATA ELEMENT DATA SET INDICATOR ORGANISATION UNIT PROGRAM VALIDATION OTHER

ANC 1st visit

Scheduled days from start (*) 0

Repeatable

Period type

Display generate event box when completed

Standard interval days

Default next scheduled date

Auto-generate event

Open data entry form after enrollment

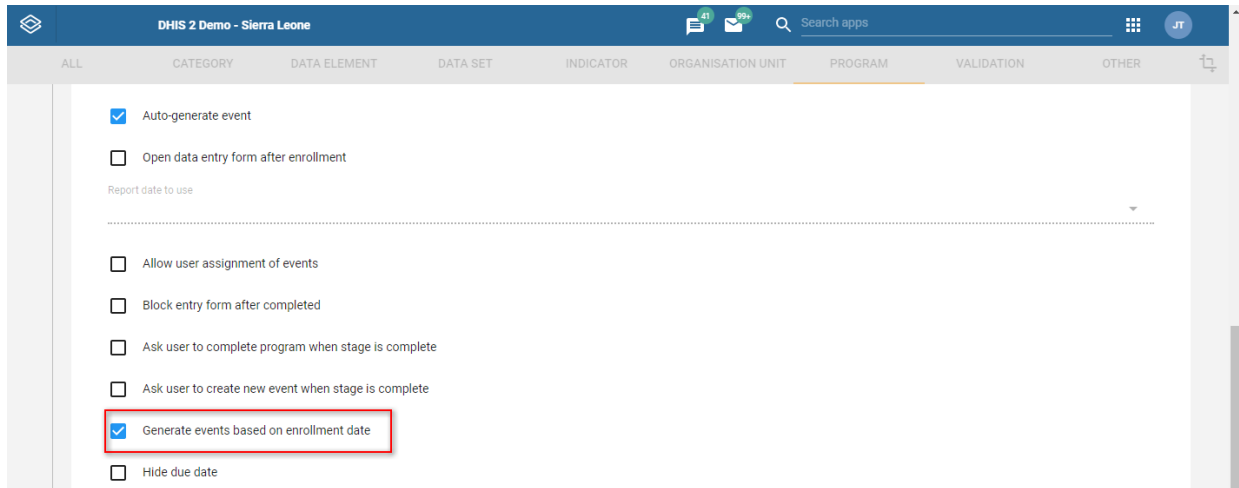
<No value>
Incident Date
Enrollment Date

Block entry form after completed

As shown in the image you have three options, a) Incident date b) Enrollment date or c) No value. Choosing reporting date as "Incident date" indicates that both the event execution date and due date will be the same as the incident date. Choosing reporting date as either "Enrollment date" or "No value" indicates that both the event execution date and due date will be the same as the enrollment date.

Schedule type of event

When the "Open data entry after enrollment" is not checked, it means that the event generated will be a SCHEDULE event. The scheduled event does not have an execution date, but only a due date. The due date for these future events are calculated based on either enrollment date or incident date. If the flag below is checked, the reference date is the enrollment date, if the flag is not checked, the incident date is used.

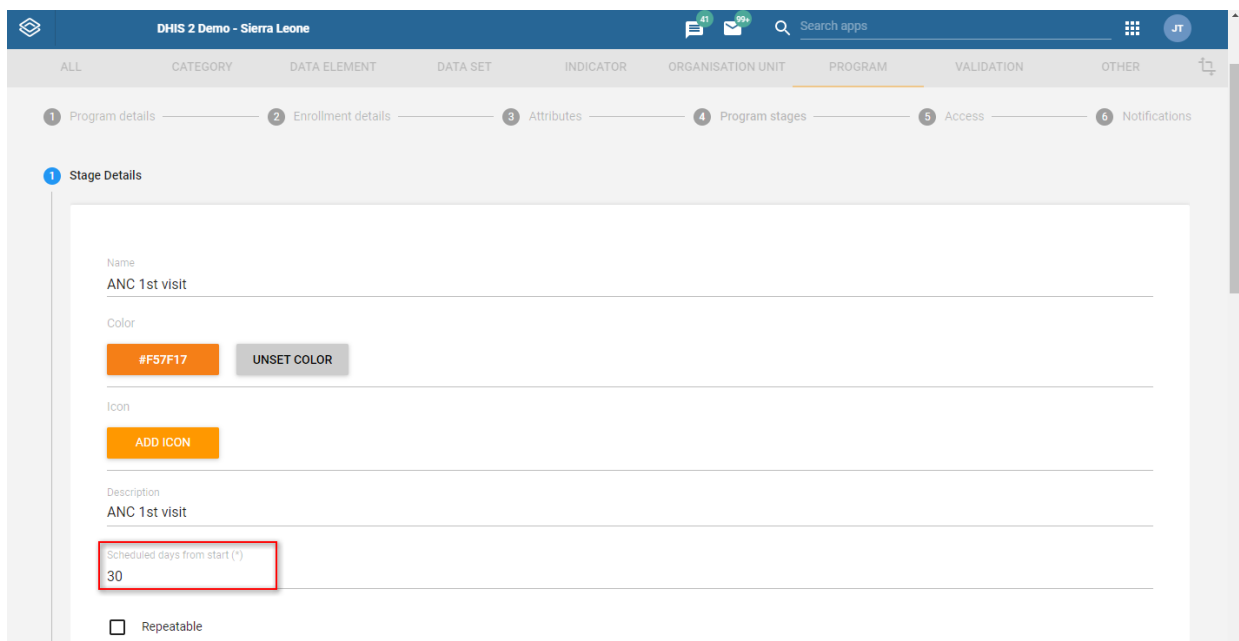


The screenshot shows the configuration page for an event in the DHIS 2 Demo - Sierra Leone application. The 'PROGRAM' tab is selected. The following options are visible:

- Auto-generate event
- Open data entry form after enrollment
- Report date to use
- Allow user assignment of events
- Block entry form after completed
- Ask user to complete program when stage is complete
- Ask user to create new event when stage is complete
- Generate events based on enrollment date
- Hide due date

When there is no incident date, the reference date will fall back on the enrollment date regardless of whether the flag above is checked.

On SCHEDULE type of events the user can also configure the "Scheduled days from start". Which means if a stage has a number in "Scheduled days from start" the reference date will be increased by that number. In the example below we increase the due date by 30 days.



The screenshot shows the 'Stage Details' configuration page for the 'ANC 1st visit' stage. The following fields are visible:

- Name: ANC 1st visit
- Color: #F57F17 (UNSET COLOR)
- Icon: ADD ICON
- Description: ANC 1st visit
- Scheduled days from start (*): 30
- Repeatable:

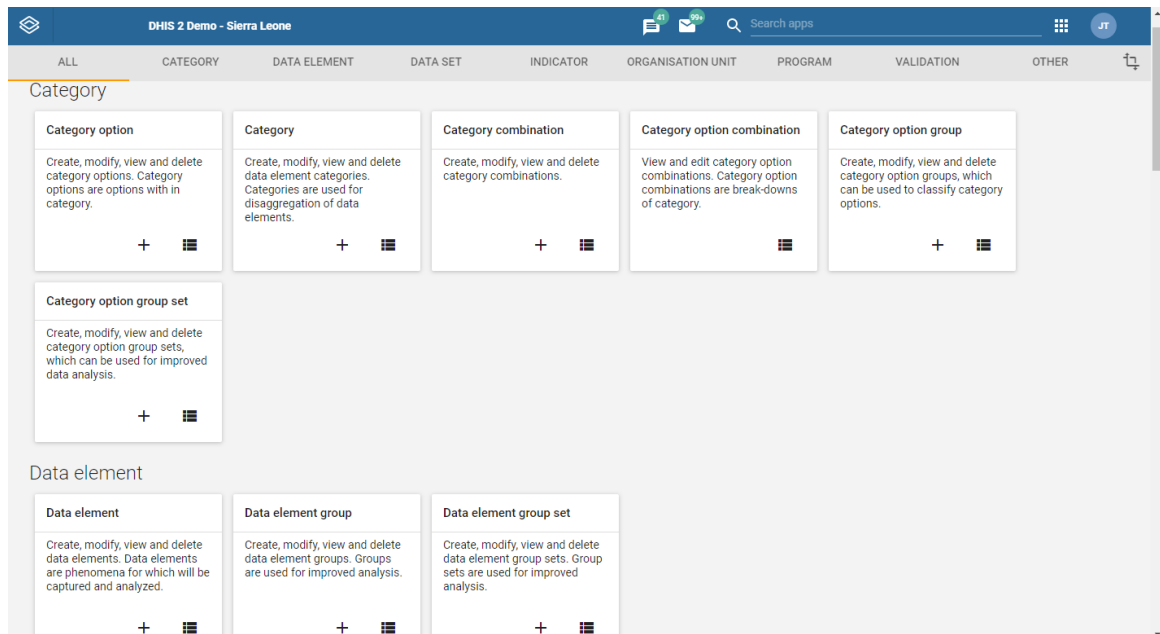
When the "Scheduled days from start" does not contain a number or contains 0 the reference date is used without adding any days to it.

Possible duplicates detection

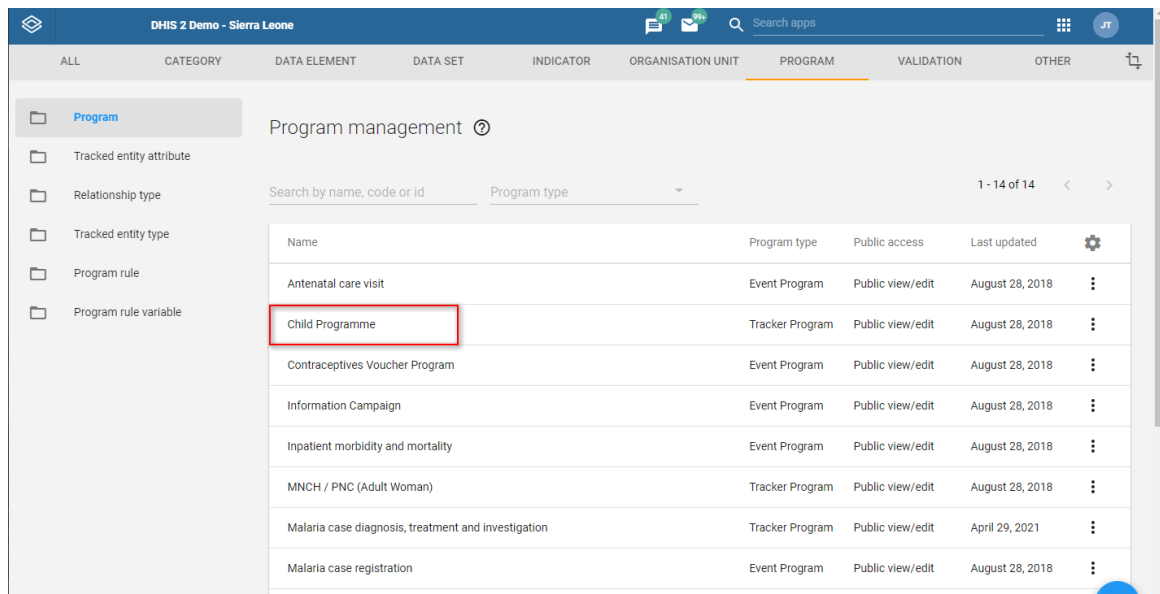
In both cases of registering a tracked entity instance, (with enrollment or without enrollment) the system will start looking for possible duplicates. Note that programs need to be correctly configured through the maintenance app for the system to start detecting duplicates when enrolling a new person in a program.

To configure a program through the maintenance app you will have to:

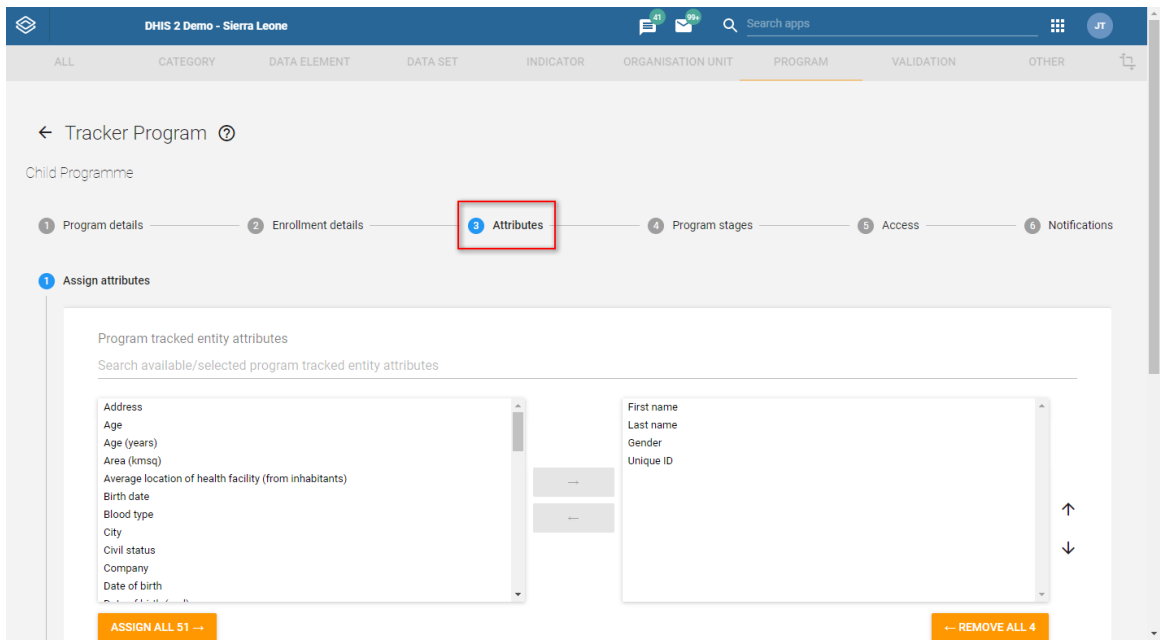
1. Open the maintenance app.



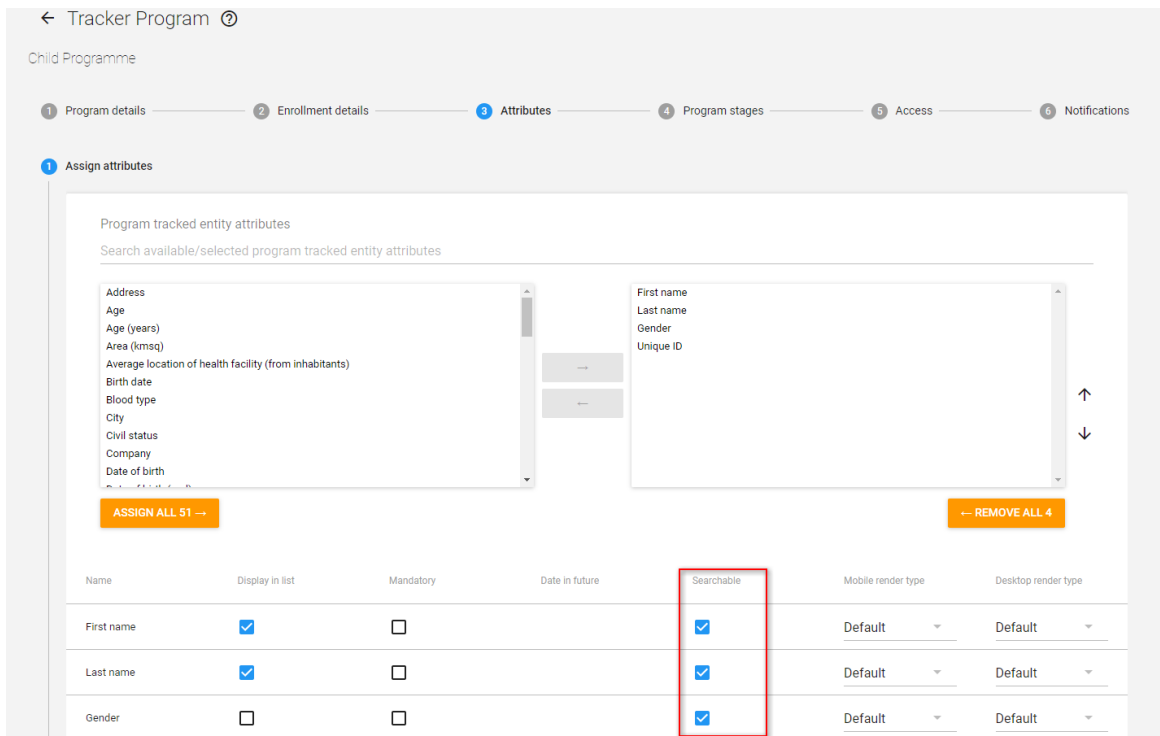
2. In the program section select your program. We select Child Programme for this example.



3. Select the Attributes tab.



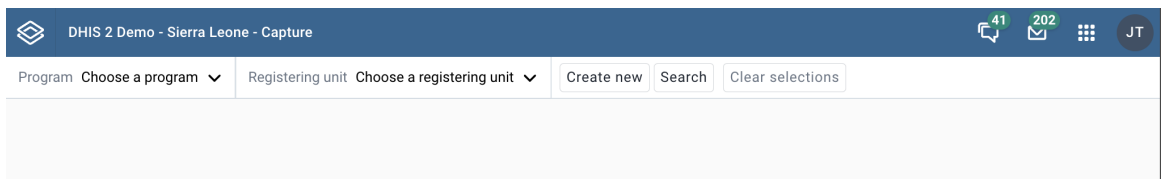
4. Enable duplicates search by checking program attributes as searchable



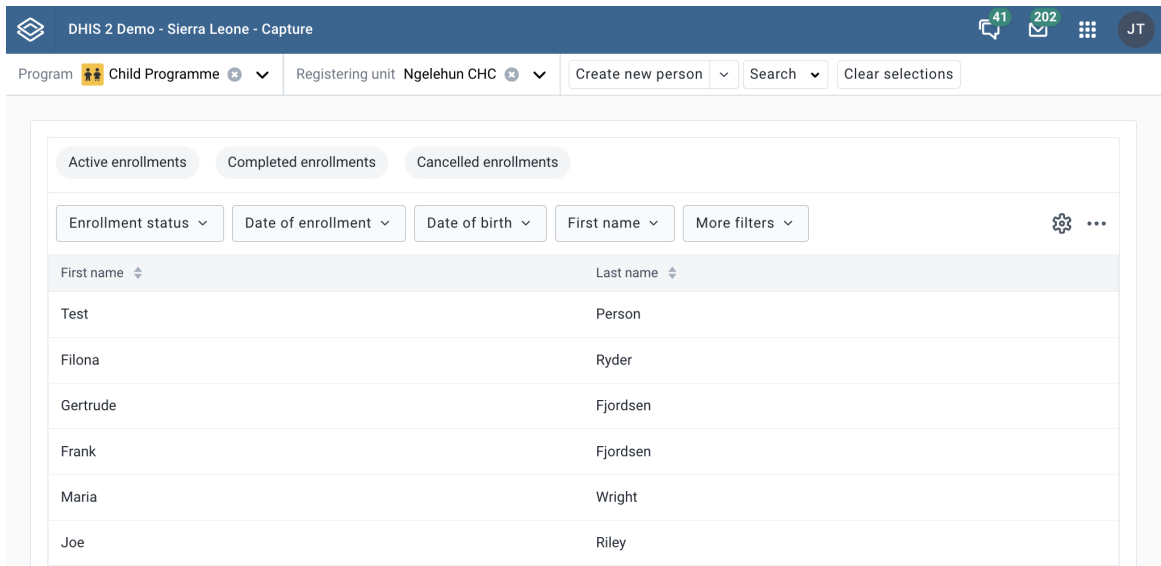
The attributes you have selected as "Searchable" will be the ones which the system will use to detect possible duplicates against.

Let us explain this with an example that demonstrates the detection of possible duplicates while enrolling a child in the Child Programme.

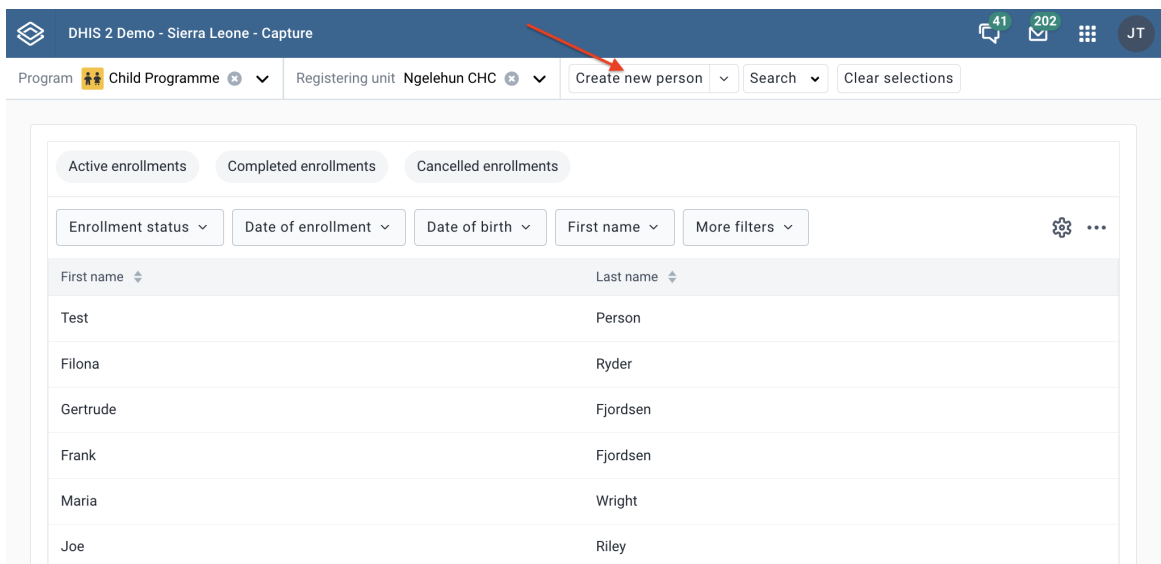
1. Open the **Capture** app.



2. Select your organisation unit and program from the menu on the top.



3. Click **Create new person**



4. Fill in the first name in the form. **Remember, the first name we have checked as "Searchable" in the maintenance app.** Click **Save person**. The system will start looking for

possible duplicates that match the name Sarah.

New person in program: Child Programme

Enrollment

Date of enrollment * 2024-03-06

Date of birth * 2024-03-06

Coordinate

Profile

First name

Last name

Gender

Unique ID

Indicators 1

Measles + Yellow fever doses 0

① Saving a person in Child Programme in Ngelehun CHC.

5. The system will automatically show a list of possible duplicates if there are any.

Possible duplicates found

First name: Sarah
Last name: Wheeler

First name: Sarah
Last name: Barnes

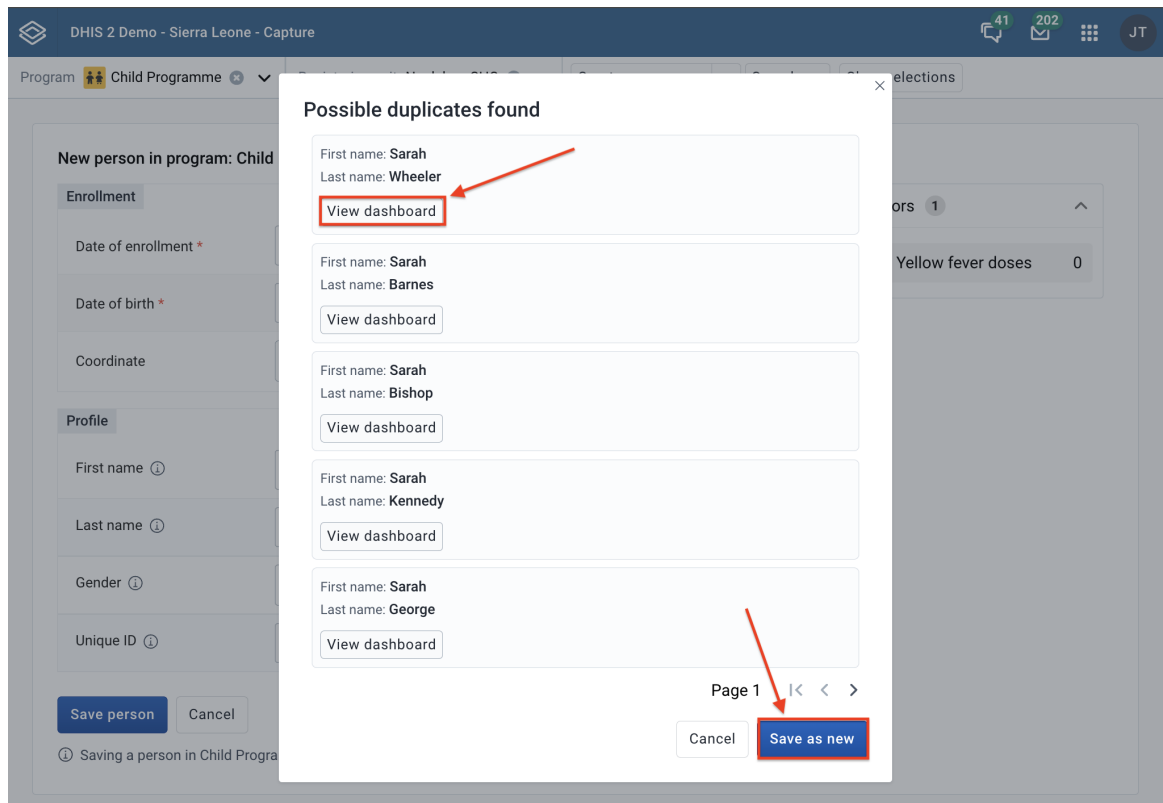
First name: Sarah
Last name: Bishop

First name: Sarah
Last name: Kennedy

First name: Sarah
Last name: George

Page 1

6. You can choose to make a new enrollement by clicking **Save as new** or if you see the right person in the list - you can view the dashboard.



Tip

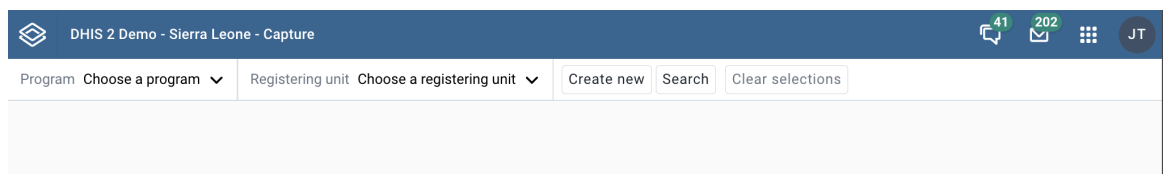
You can configure duplicates detection for tracked entity types the same way as we did for programs.

Program rules execution

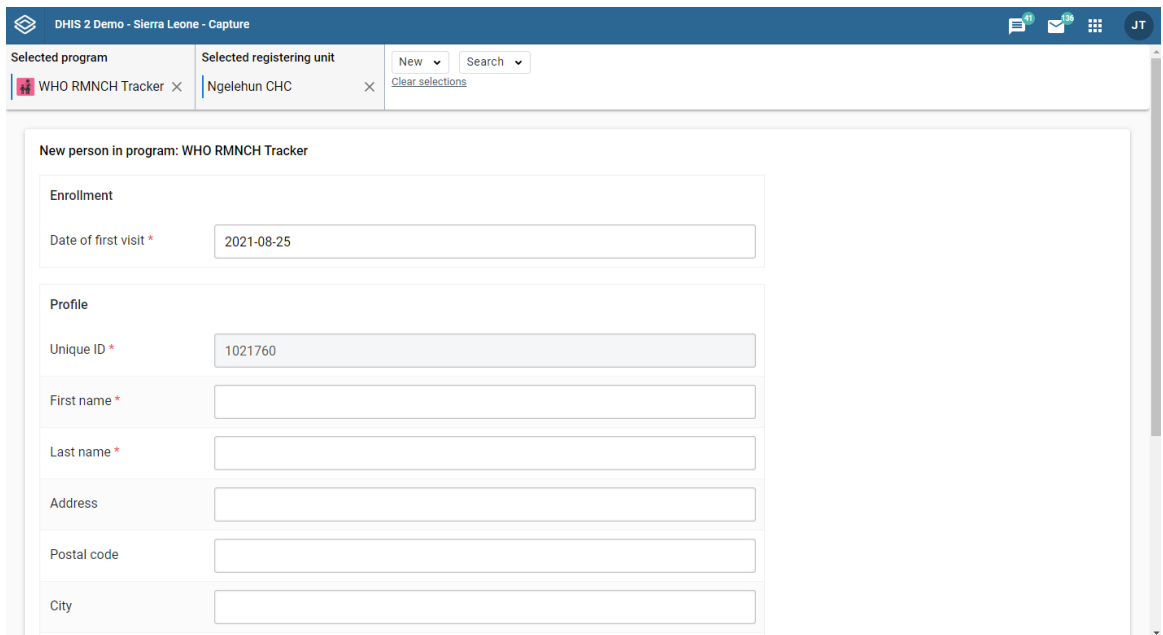
In both cases of registering a tracked entity instance (with enrollment or without enrollment), the system will run program rules you have configured. Note that rules can be configured in the maintenance app.

To see a rule being executed while enrolling a tracked entity instance you will have to take the following steps.

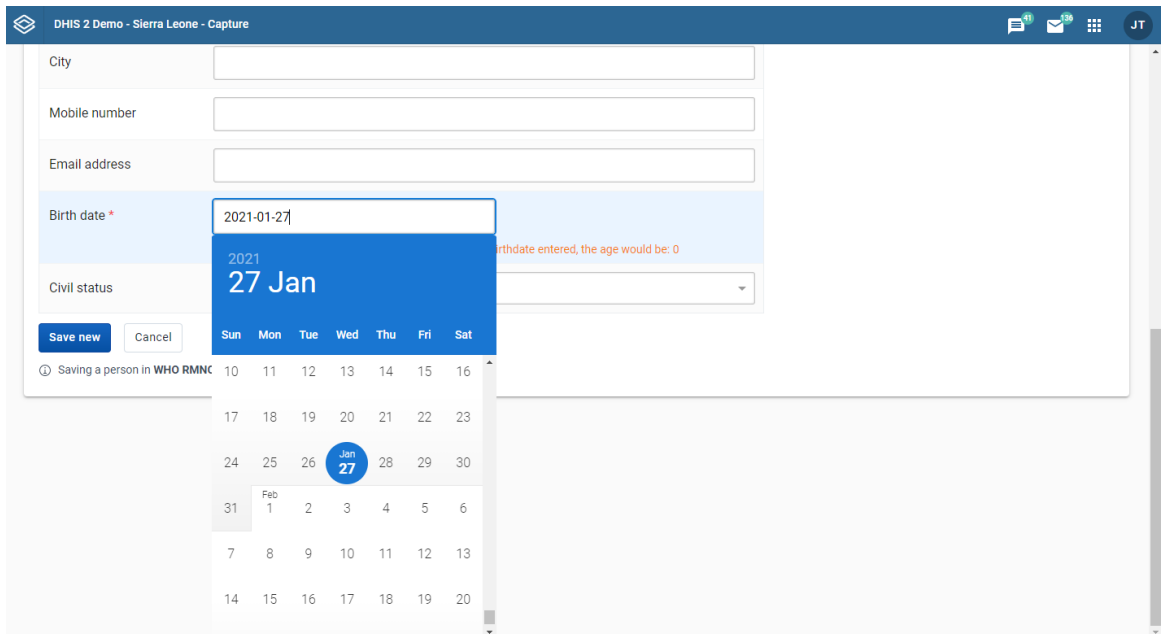
1. Configure a rule in the maintenance app. For the example below we configured a rule that throws a warning when the date of birth is less than a year.
2. Open the **Capture** app.



3. Select your organisation unit and program from the menu on the top.



4. Fill in the date of birth with a value which is less than a year. In our case this is 27th of January 2021.



5. You will now be able to see the warning produced by the program rule underneath the birth date field.

The screenshot shows the 'Profile' section of the DHIS 2 Demo - Sierra Leone - Capture app. The form contains the following fields:

- Unique ID *: 1021760
- First name *: Sarah
- Last name *: Morales
- Address
- Postal code
- City
- Mobile number
- Email address
- Birth date *: 2021-01-27
- Civil status

A yellow warning message is displayed below the birth date field: "The womans age is outside the normal range. With the birthdate entered, the age would be: 0".

Re-enroll an existing tracked entity instance

When you are on the re-enroll page, the teid will be visible in the URL parameters. The attributes of the tracked entity instance will be pre-filled with the current values.

The screenshot shows the 'New Enrollment in program: Child Programme' page in the DHIS 2 Demo - Sierra Leone - Capture app. The URL in the browser is `debug.dhis2.org/dev/dhis-web-capture/index.html#/new?orgUnitId=DiszpKrYNg8&programId=lpHINAT79UW&teid=NYvVqMYZRTG`, with the `teid=NYvVqMYZRTG` part highlighted in red.

The page shows the following information:

- Selected program:** Child Programme
- Selected registering unit:** Ngelehun CHC
- Enrollment:**
 - Date of enrollment *: 02-03-2022
 - Date of birth *: 23-02-2022
 - Coordinate: Latitude, Longitude
- Profile:**
 - First name: Sharon
 - Last name: Scott
 - Gender: Female
 - Unique ID: 6431362

Buttons for 'Save new' and 'Cancel' are visible at the bottom.

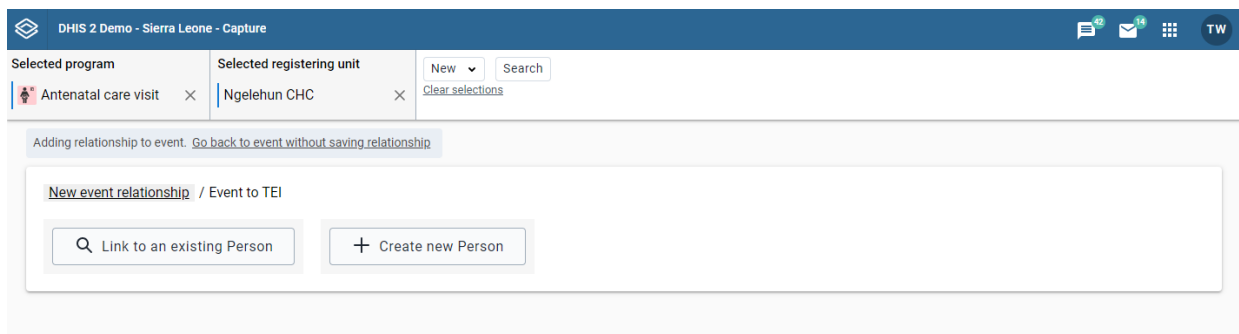
Adding a relationship

Relationships can be added either during registration, editing or viewing of an event. Currently the **Capture App** only supports *Event to Tracked Entity Instance* relationships.

1. While in an event, click **Add relationship**.
2. Select the relationship type you want to create.

You now have two options:

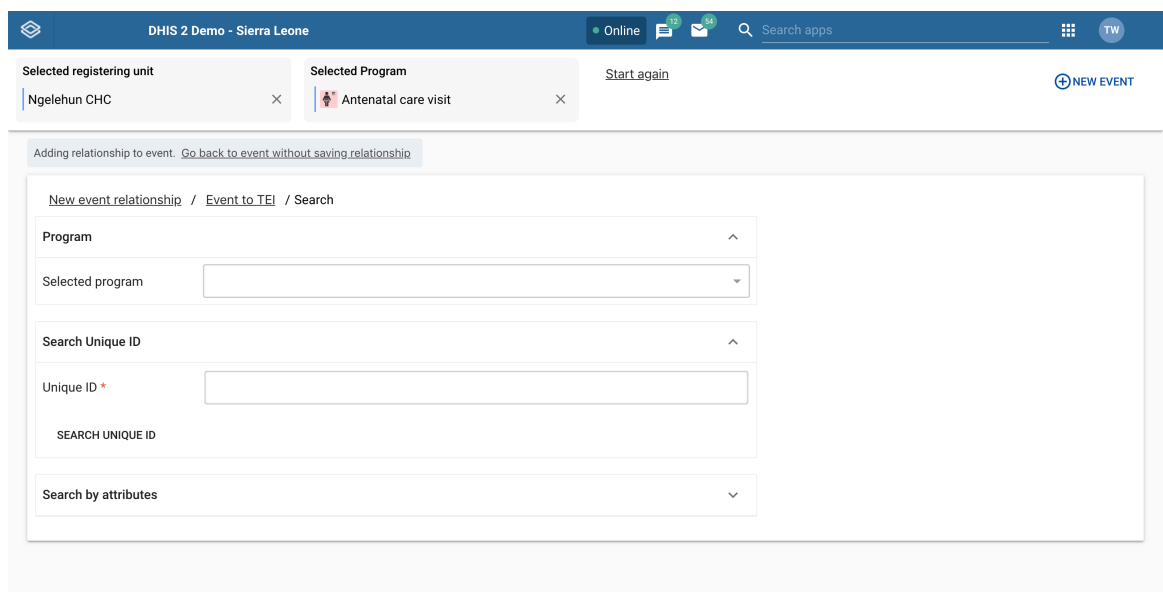
- **Link to an existing Tracked Entity Instance** or
- **Create new Tracked Entity Instance.**



relationship options

Link to an existing Tracked Entity Instance

1. Click **Link to an existing Tracked Entity Instance**.
2. You will be presented with some options for searching for a **Tracked Entity Instance**. You have the option to select a **program**. If a **program** is selected the attributes are derived from the selected **program**. If no **program** is selected, only the attributes that belong to the **Tracked Entity Instance** will be visible.



search for Tracked Entity Instance

- If the **Tracked Entity Instance** or **program** is configured with a unique attribute, this attribute can be used for finding a specific **Tracked Entity Instance** or **program**. This attribute should be presented alone. When the unique attribute field has been filled out, click the **Search** button located right below the unique attribute field.
 - If the **Tracked Entity Instance** or **program** has attributes these can be used for searching by expanding the **Search by attributes** box. When all desired attribute fields have been filled out, click the **Search by attributes** button located at the bottom. You can also limit the search by setting the **Organisation unit scope**. If set to *All accessible* you will search for the **Tracked Entity Instance** in all organisation units you have access to. If you select *Selected*, you will be asked to select which organisation units to search within.
3. After a successful search you will be presented with a list of **Tracked Entity Instances** matching the search criteria. To create a relationship click the **Link** button on the **Tracked Entity Instance** you would like to create a relationship to.
 4. If you did not find the **Tracked Entity Instance** you were looking for, you can either click the **New search** or **Edit search** buttons. **New search** will take you to new blank search while **Edit search** will take you back to the search you just performed keeping the search criteria.

Create new Tracked Entity Instance

1. Click **Create new Tracked Entity Instance**.
2. You are now presented with a form for registering a new **Tracked Entity Instance**. You can choose to either register with or without a program. If a program is selected, the new **Tracked Entity Instance** will be enrolled in said program. You can also change the **Organisation unit** by removing the one that is automatically set and selecting a new one.

The screenshot shows the DHIS 2 interface for creating a new Tracked Entity Instance. At the top, the header reads 'DHIS 2 Demo - Sierra Leone - Capture'. Below the header, there are two tabs: 'Selected program' (Antenatal care visit) and 'Selected registering unit' (Ngelehun CHC). A 'New' dropdown and 'Search' button are visible. A 'Clear selections' link is also present. The main content area is titled 'Adding relationship to event. Go back to event without saving relationship'. Below this, there is a breadcrumb trail: 'New event relationship / Event to TEI / Register'. The form is divided into two sections: 'Registration' and 'Profile'. In the 'Registration' section, 'Organisation Unit' is set to 'Ngelehun CHC' and 'Program' is a dropdown menu. In the 'Profile' section, 'Unique ID' is '1029865', 'First name' and 'Last name' are empty text boxes. At the bottom of the form, there are two buttons: 'Save new person and link' (in blue) and 'Cancel'.

register new Tracked Entity Instance

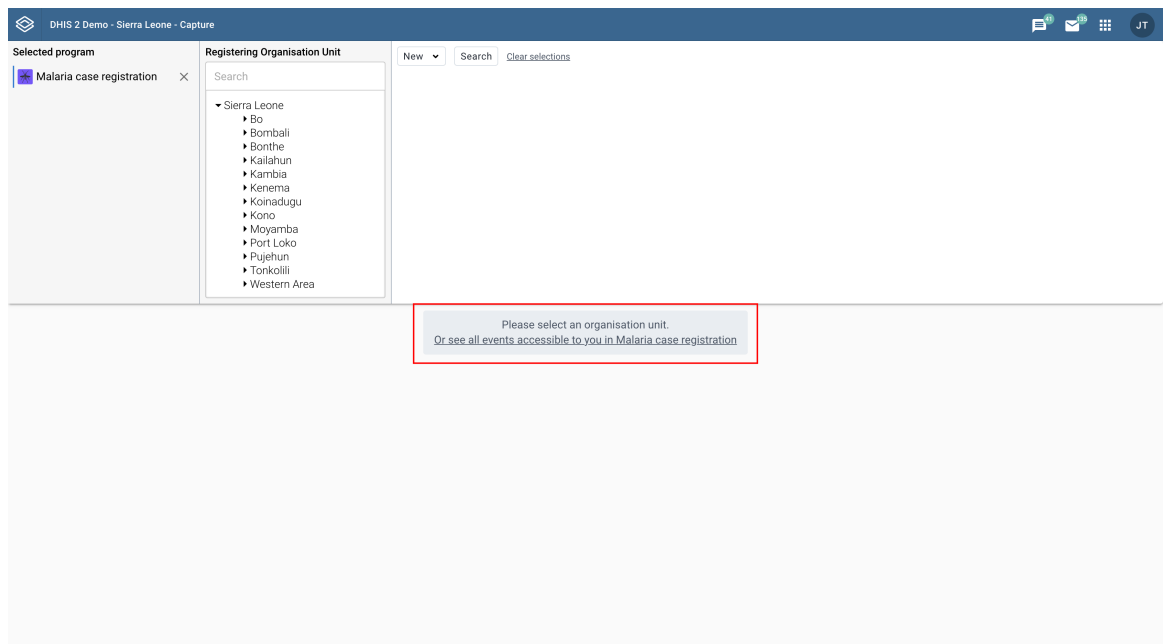
1. Fill in the desired (and possibly mandatory) attributes and enrollment details.
2. Click **Create Tracked Entity Instance and Link**.

Note

When filling in data you might face a warning telling you that a possible duplicate has been found. You can click the warning to see these duplicates and if the duplicate is a match you can choose to link that **Tracked Entity Instance** by clicking the **Link** button. If the warning is still present when you are done filling in data, you will not see the **Create Tracked Entity Instance and Link** button. Instead you will be presented with a button called **Review duplicates**. When you click this button a list of possible duplicates will be displayed. If any of these duplicates matches the **Tracked Entity Instance** you are trying to create you can click the **Link** button, if not you can click the **Save as new person** button to register a new **Tracked Entity Instance**.

Edit an event

1. Open the **Capture** app.
2. Select a program.
3. Select an organisation unit or click the *all events*-link to view all events accessible to you.



All events registered to the selected program show up in a list.

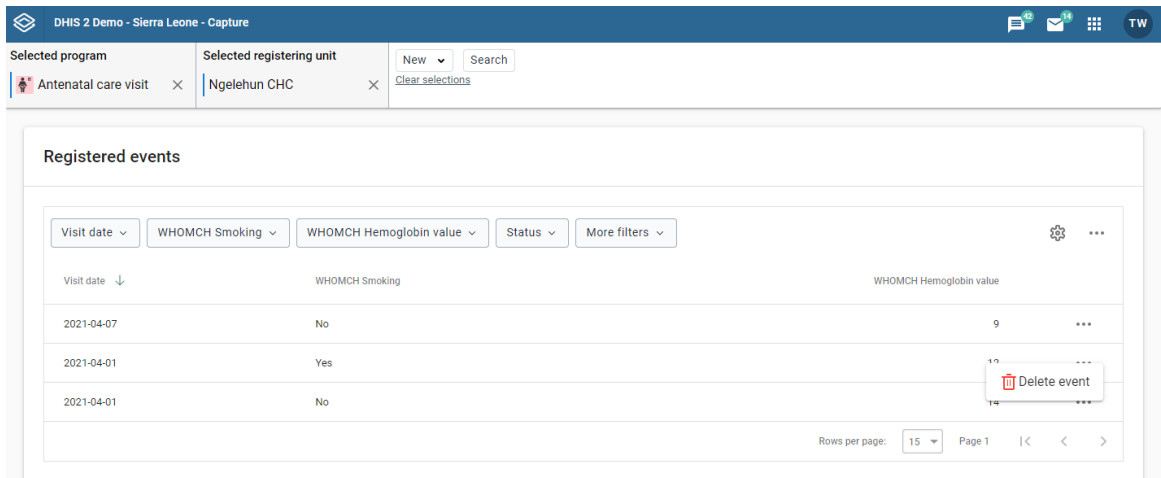
4. Click the event you want to modify.
5. Click the **Edit event** button.
6. Modify the event details and click **Save**.

Delete an event

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

- Click the **triple dot** icon on the event you want to delete.
- In the menu that is displayed click **Delete event**.



delete event

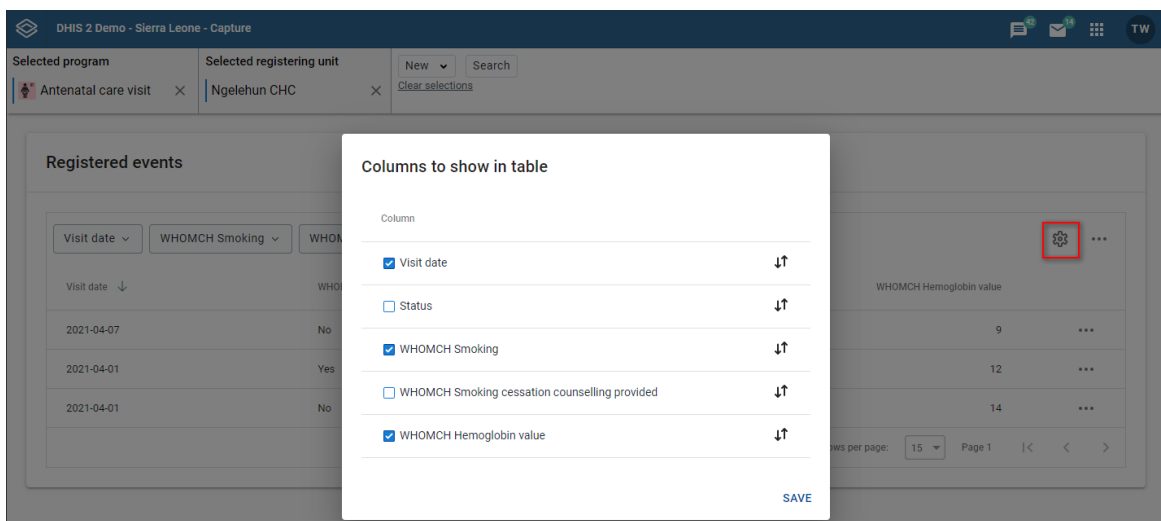
Modify an event list layout

You can select which columns to show or hide in an event list. This can be useful for example when you have a long list of data elements assigned to a program stage.

- Open the **Capture** app.
- Select an organisation unit.
- Select a program.

All events registered to the selected program show up in a list.

- Click the **gear** icon on the top right of the event list.
- Select the columns you want to display and click **Save**.



modify event list

Tip

You can reorganize the order of the data elements by dragging and dropping them in the list.

Filter an event list

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

Along the top of the event list are buttons with the same names as the column headers in the list.

4. Use the buttons on the top of the list to filter based on a report date or a specific data element.

filter event

Note

Different data element types are filtered in different ways. A **Number** data element will for instance show a range to filter on while a **Text** data element will ask you to enter a search query to filter on.

Sort an event list

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select a program. All events registered to the selected program show up in a list.
4. Click one of the column headers to sort the list on that data element in ascending order.

A small upward arrow is displayed next to the column to show that the list is sorted in ascending order.

5. Click the column header again to sort the list on that data element in descending order.

A small downward arrow is displayed next to the column to show that the list is sorted in descending order.

The screenshot shows the 'Registered events' section of the DHIS 2 interface. At the top, there are filters for 'Selected program' (Antenatal care visit) and 'Selected registering unit' (Ngelehun CHC). Below the filters, there are dropdown menus for 'Visit date', 'WHOMCH Smoking', 'WHOMCH Hemoglobin value', 'Status', and 'More filters'. The 'Visit date' dropdown has a downward arrow, indicating it is sorted in descending order. A red arrow points to this arrow. The table below shows three rows of data:

Visit date	WHOMCH Smoking	WHOMCH Hemoglobin value	
2021-04-07	No	9	...
2021-04-01	Yes	12	...
2021-04-01	No	14	...

At the bottom right, there are controls for 'Rows per page' (15) and 'Page 1'.

sort event

Download an event list

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select a program. All events registered to the selected program show up in a list.
4. Click the **three dots** icon on the top right of the event list.
5. Click **Download data**.
6. Select the format you want to download.

The screenshot shows the 'Registered events' section of the DHIS 2 interface. At the top, there are filters for 'Selected program' (Antenatal care visit) and 'Selected registering unit' (Ngelehun CHC). Below the filters, there are dropdown menus for 'Visit date', 'Status', 'WHOMCH Smoking', 'WHOMCH Smoking cessation counselling provided', and 'More filters'. The 'Visit date' dropdown has a downward arrow. A red box highlights the 'three dots' icon (1) in the top right corner of the event list. A red arrow points to the 'Download data...' option (2) in the dropdown menu. The table below shows three rows of data:

Visit date	Status	
2021-04-07	Active	...
2021-04-01	Active	...
2021-04-01	Active	...

At the bottom right, there are controls for 'Rows per page' (15) and 'Page 1'.

download event list

Note

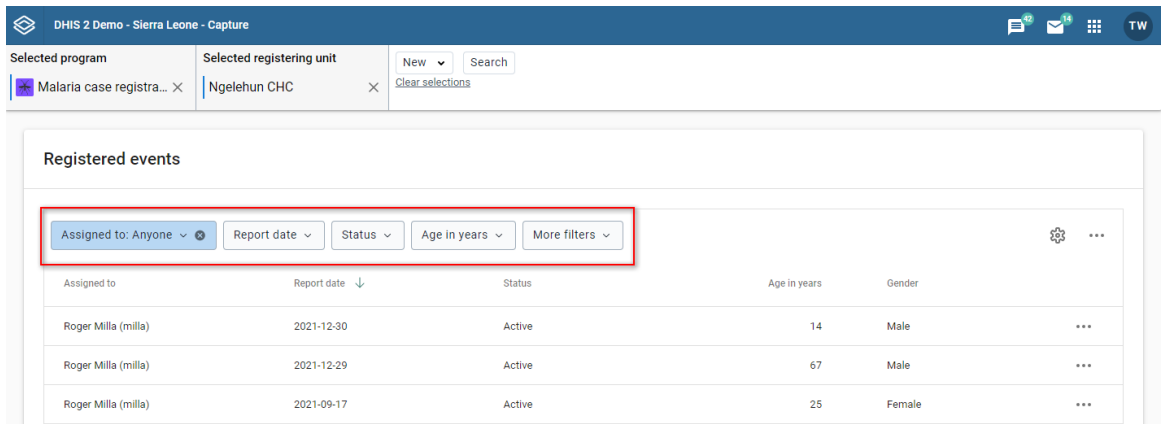
You can download an event list in JSON or CSV formats.

Predefined list views

You can set up your own views and save them for later use. The views can also be shared with others. A view consists of filters, column order and event sort order.

Saving a new view

1. Select an organisation unit and a program.
2. Set filters using the filter buttons above the event list (described in detail [here](#)).

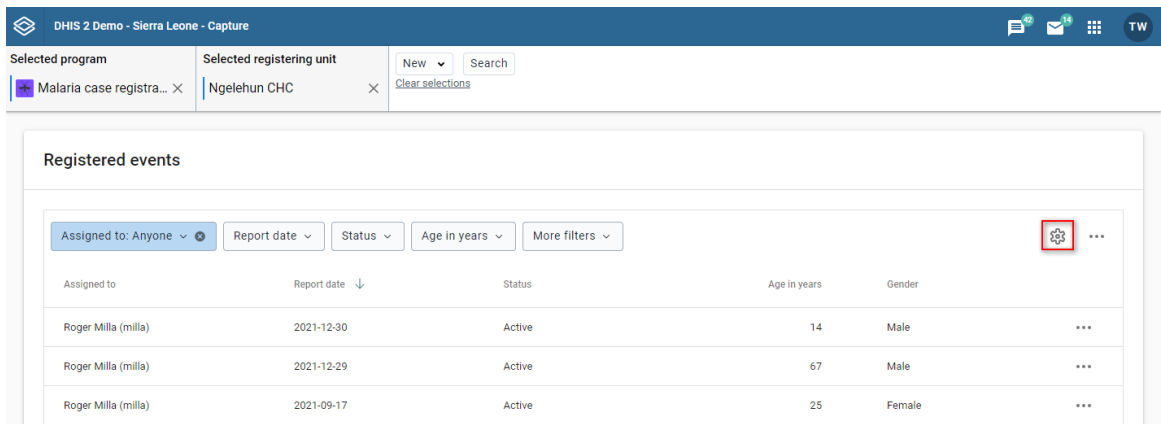


The screenshot shows the DHIS 2 interface with the following details:

- Header: DHIS 2 Demo - Sierra Leone - Capture
- Selected program: Malaria case registra...
- Selected registering unit: Ngelehun CHC
- Buttons: New, Search, Clear selections
- Section: Registered events
- Filter buttons (highlighted with a red box): Assigned to: Anyone, Report date, Status, Age in years, More filters
- Table columns: Assigned to, Report date, Status, Age in years, Gender
- Table data:

Assigned to	Report date	Status	Age in years	Gender
Roger Milla (milla)	2021-12-30	Active	14	Male
Roger Milla (milla)	2021-12-29	Active	67	Male
Roger Milla (milla)	2021-09-17	Active	25	Female

3. Set the column order by clicking the cog icon and then, in the pop-up, specify the layout according to your preference (how to modify the layout is described in detail [here](#)).



The screenshot shows the DHIS 2 interface with the following details:

- Header: DHIS 2 Demo - Sierra Leone - Capture
- Selected program: Malaria case registra...
- Selected registering unit: Ngelehun CHC
- Buttons: New, Search, Clear selections
- Section: Registered events
- Filter buttons: Assigned to: Anyone, Report date, Status, Age in years, More filters
- Cog icon (highlighted with a red box) for column order configuration
- Table columns: Assigned to, Report date, Status, Age in years, Gender
- Table data:

Assigned to	Report date	Status	Age in years	Gender
Roger Milla (milla)	2021-12-30	Active	14	Male
Roger Milla (milla)	2021-12-29	Active	67	Male
Roger Milla (milla)	2021-09-17	Active	25	Female

4. Sort the events by clicking on one of the column headers (described in detail [here](#)).

Selected program: Malaria case registra...
Selected registering unit: Ngelehun CHC

Registered events

Assigned to: Anyone | Report date | Status | Age in years | More filters

Assigned to	Report date	Status	Age in years	Gender
Roger Milla (milla)	2021-12-30	Active	14	Male
Roger Milla (milla)	2021-12-29	Active	67	Male
Roger Milla (milla)	2021-09-17	Active	25	Female

5. Open the more menu (three dots icon) to the right and then select "Save current view..."

Selected program: Malaria case registra...
Selected registering unit: Ngelehun CHC

Registered events

Assigned to: Anyone | Report date | Status | Age in years | More filters

Assigned to	Report date	Status	Age in years	Gender
Roger Milla (milla)	2021-12-30	Active	14	Male
Roger Milla (milla)	2021-12-29	Active	67	Male
Roger Milla (milla)	2021-09-17	Active	25	Female

Download data...
Save current view...

6. Fill in a name for the view and click save.

Save As view

View name *

Cancel Save

Loading a view

1. Select an organisation unit and a program with a predefined view.
2. The views should be available above the event list itself. Click on a view to load it.

The screenshot shows the DHIS 2 interface with the following details:

- Selected program:** Malaria case registr...
- Selected registering unit:** Ngelehun CHC
- Registered events filters:** Events assigned to anyone (selected), Events assigned to me, Events today.
- Table columns:** Report date, Status, Assigned to, Age in years, Gender.
- Table data:**

Report date	Status	Assigned to	Age in years	Gender
2021-12-30	Active	Roger Milla (milla)	14	Male
2021-12-29	Active	Roger Milla (milla)	67	Male
2021-12-27	Active		66	Male

3. An example of a loaded view.

The screenshot shows the DHIS 2 interface with the following details:

- Selected program:** Malaria case registr...
- Selected registering unit:** Ngelehun CHC
- Registered events filters:** Events assigned to anyone (selected), Events assigned to me, Events today.
- Table columns:** Assigned to, Report date, Status, Age in years, Gender.
- Table data:**

Assigned to	Report date	Status	Age in years	Gender
Roger Milla (milla)	2021-12-30	Active	14	Male
Roger Milla (milla)	2021-12-29	Active	67	Male

Updating a view

1. Load the view you would like to update (see [loading a view](#)).
2. Make your changes to filters, column order and/or event sort order.

Note

An asterisk(*) is appended to the view name when the view has unsaved changes.

3. Open the more menu (three dots icon) to the right and then select "Update view".

The screenshot shows the 'Registered events' section of the DHIS 2 interface. At the top, there are filters for 'Selected program' (Malaria case registra...) and 'Selected registering unit' (Ngelehun CHC). Below these are tabs for 'Events assigned to anyone', 'Events assigned to me', and 'Events today'. A filter bar includes 'Assigned to: Anyone', 'Report date', 'Status', 'Age in years', and 'More filters'. The table below has columns for 'Assigned to', 'Report date', 'Status', 'Age in years', and 'Gender'. Three rows of data are visible, all for 'Roger Milla (milla)'. A dropdown menu is open over the table header, with 'Update view' highlighted by a red box.

Assigned to	Report date	Status	Age in years	Gender
Roger Milla (milla)	2021-12-30	Active	14	Male
Roger Milla (milla)	2021-12-29	Active	67	Male
Roger Milla (milla)	2021-09-17	Active	25	Female

Sharing a view

1. Load the view you would like to share (see [loading a view](#)).
2. Open the more menu (three dot icon) to the right and then select "Share view..."

This screenshot is identical to the one above, but the dropdown menu is open over the table header, and 'Share view...' is highlighted with a red box.

3. Make your changes. You would typically add users/groups (1) and/or change the access rights of users/groups added earlier (2).

Sharing settings

Events assigned to anyone

Created by: Tom Wakiki

Who has access

Public access	No access	⊘	×
External access	No access	⊘	×

Add users and user groups

Enter names

CLOSE

Deleting a view

1. Load the view you would like to delete (see [loading a view](#)).
2. Open the more menu (three dots icon) to the right and then select "Delete view".

DHIS 2 Demo - Sierra Leone - Capture

Selected program: Malaria case registra...
Selected registering unit: Ngelehun CHC

Registered events

Events assigned to anyone | Events assigned to me | Events today

Assigned to: Anyone | Report date | Status | Age in years | More filters

Assigned to	Report date	Status	Age in years	Gender
Roger Milla (milla)	2021-12-30	Active	14	Male
Roger Milla (milla)	2021-12-29	Active	67	Male
Roger Milla (milla)	2021-09-17	Active	25	Female

Rows per page: 15

More menu options: Download data..., Save current view as..., Events assigned to anyone, Share view..., Delete view

User assignment in events programs

Events can be assigned to users. This feature must be enabled per program.

Assigning user to new events

1. Select an organisation unit and a program with user assignment enabled.
2. Click **New Event** in the upper right corner.
3. You will find the assignee section near the bottom of the data entry page. Search for and select the user you would like to assign the event to. The assignee will be preserved when you save the event.

Assignee

Assigned user

Save and exit
Cancel

📍 Saving to Malaria case registration in Ngelehun CHC

Assignee

Assigned user

Save and exit
Cancel

📍 Saving to Malaria case registration in Ngelehun CHC

Change assignee

1. Select an organisation unit and a program with user assignment enabled.
2. Click an event in the list
3. In the right column you will find the assignee section.

DHIS 2 Demo - Sierra Leone - Capture
55 335 TW

Program Malaria case registration | Registering unit Ngelehun CHC | New | Search | Clear selections

Show all events

Event details

Basic info

Report date: 2023-12-30

Coordinate: lat: 8.062466, long: -11.424642

Age (years): 14

Gender: Male

Household location: lat: 8.056300, long: -11.415577

Status

Event completed: No

Assignee

Assigned to Roger Milla Edit

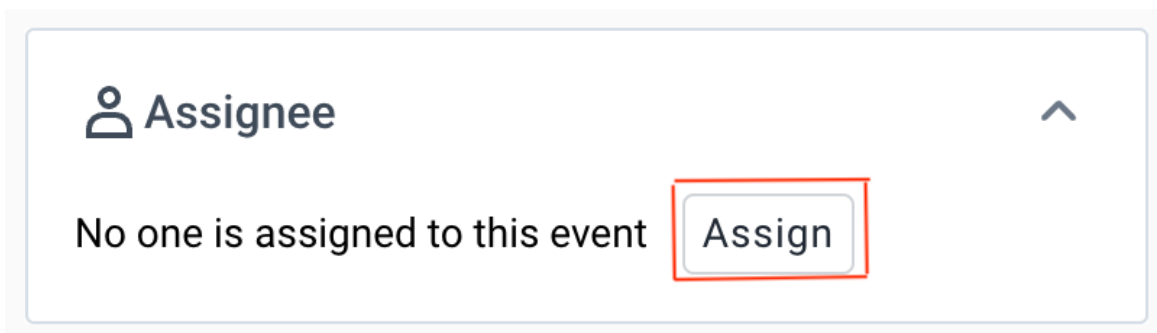
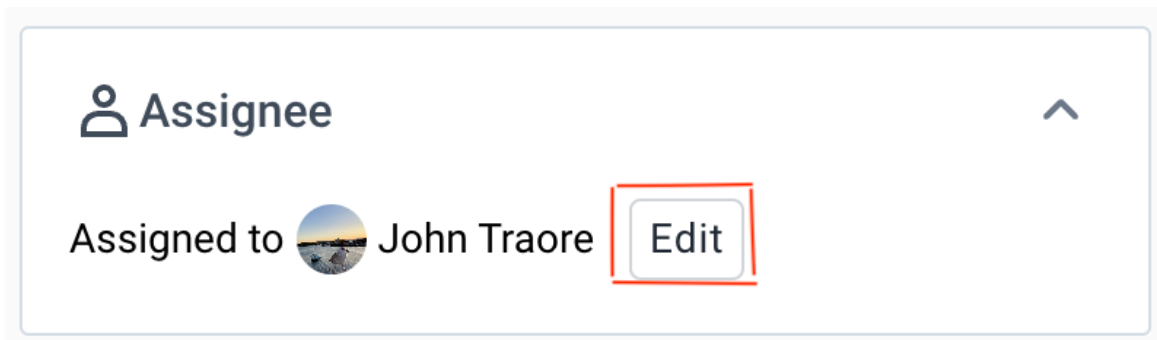
Relationships 0

Add relationship

Comments 0

Write comment

- Click the **Edit** button, or the **Assign** button if the event is not currently assigned to anyone.



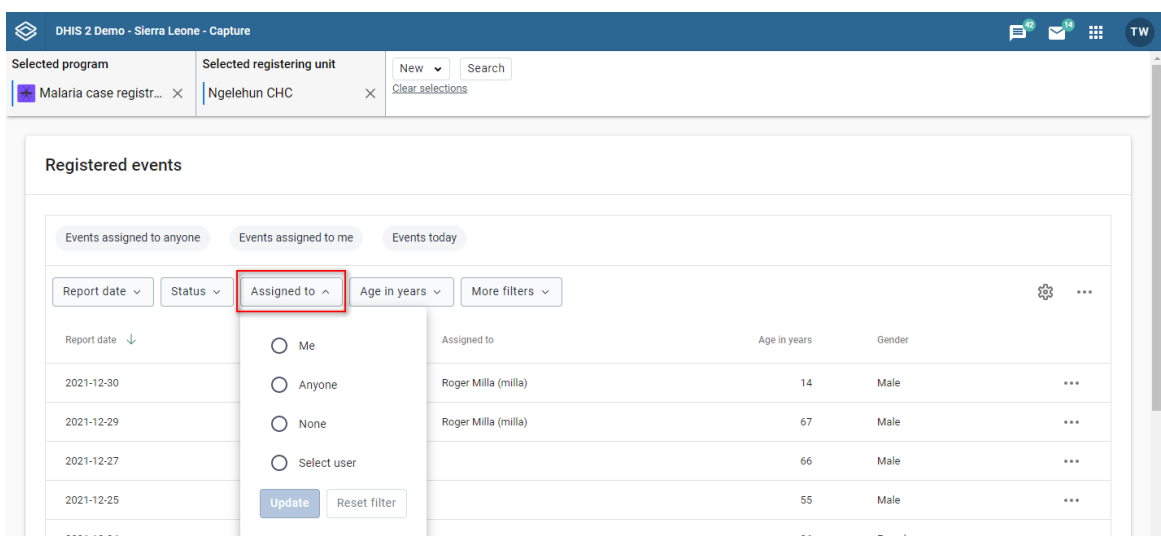
- Search for and select the user you would like to reassign the event to. Click the **Save** button.

Assignee in the event list

In the event list you will be able to view the assignee per event. Moreover, you can sort and filter the list by the assignee.

Filter by assignee

- Click the **Assigned to** filter.



- Select your preferred assignee filter and then click update.

Tracker programs

The Capture app supports the workinglists in tracker programs, but when you open a tracked entity instance, you will be redirected to the enrollment dashboard in the Tracker Capture app.

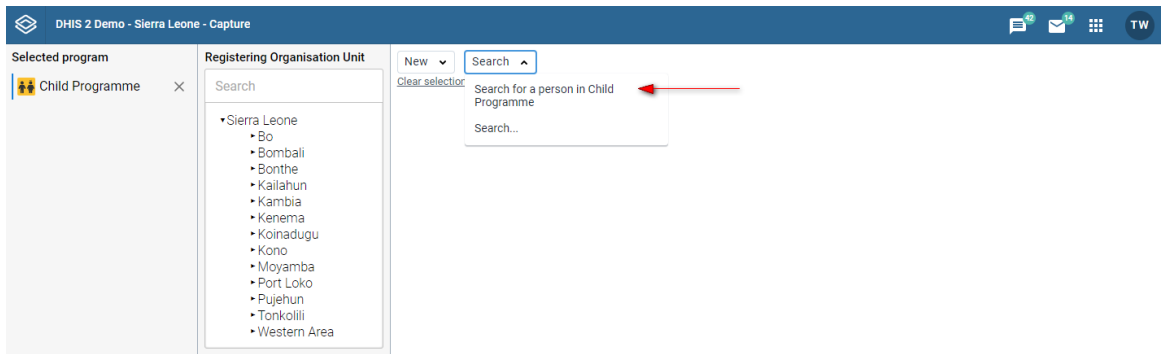
Search for tracked entity instances

In Program scope

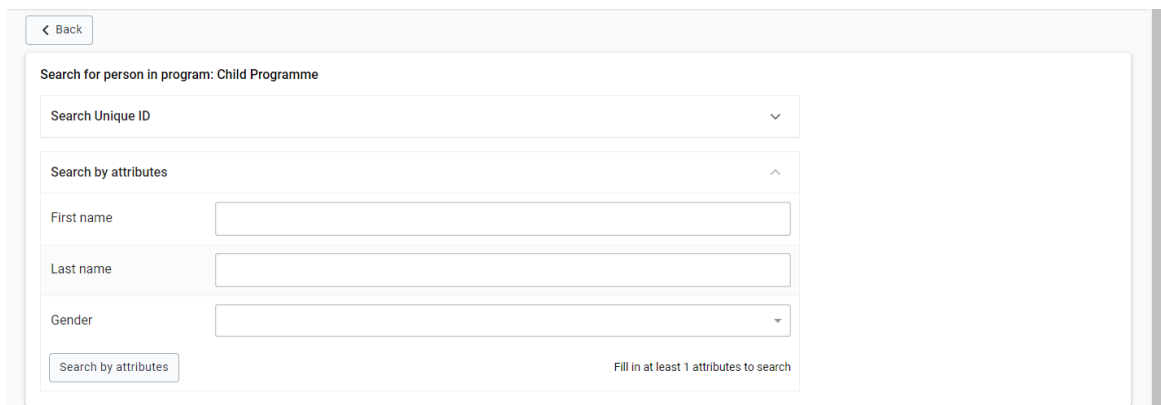
1. Open the **Capture** app.
2. Select a program.

You will only see programs associated with the selected organisation unit and programs you have access to, and that are shared with your user group through data level sharing.

3. Click the Search button.
4. From the dropdown menu click the first option.

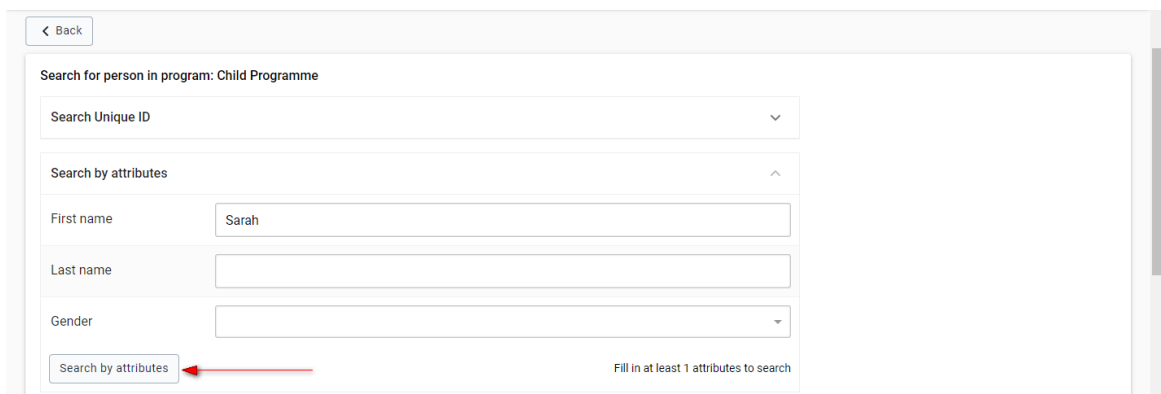


These steps will take you to the search page. There, based on the configuration of your organisation, will see the different attributes you can search with. An example of how this looks is the following.

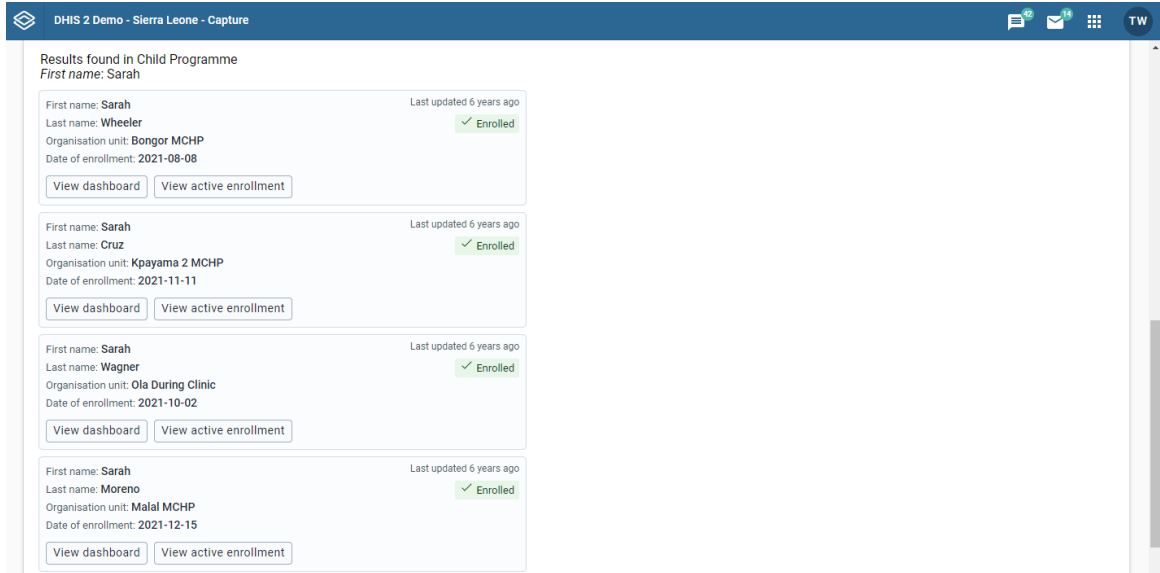


To execute a search now:

5. Fill in the attributes you want to search with.
6. Click the **Search by attributes** button.

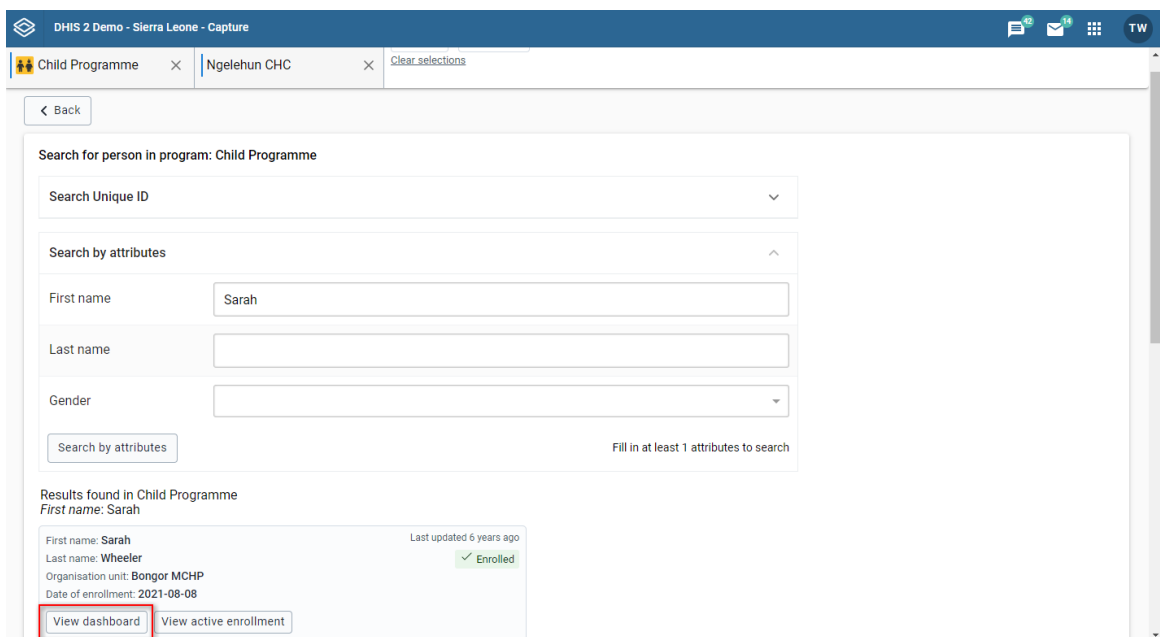


7. The results of the search will be displayed as follows.



In this list you can see the entries that match your search. For each entry you can have a total of three options.

a. You can choose to view the dashboard for the **Tracked Entity Instance** by clicking the "View dashboard" button



b. You can view the the active enrollment of a **Tracked Entity Instance** by clicking the "View active enrollment" button

Search for person in program: Child Programme

Search Unique ID

Search by attributes

First name: Sarah

Last name:

Gender:

Search by attributes

Fill in at least 1 attributes to search

Results found in Child Programme
First name: Sarah

First name: Sarah
Last name: Wheeler
Organisation unit: Bongor MCHP
Date of enrollment: 2021-08-08
Last updated 6 years ago
Enrolled

View dashboard View active enrollment

c. You can re-enroll a **Tracked Entity Instance** to the current program you are searching within.

Search for person in program: Child Programme

Search Unique ID

Search by attributes

First name: gertrude

Last name:

Gender:

Search by attributes

Fill in at least 1 attributes to search

Results found in Child Programme
First name: gertrude

First name: Gertrude
Last name: Fjordsen
Organisation unit: Ngelehun CHC
Date of enrollment: 2022-01-10
Last updated 5 years ago
Previously enrolled

View dashboard Re-enroll in Child Programme

Fallback search

Execute a full search as described above. If the search you have made has results they will be displayed. However, the actual **Tracked Entity Instance** you are searching for may be within a different program. In that case, you may want to extend the search to other programs. This is known as a fallback search.

To execute a fallback search, simply press the button on the bottom saying "Search in all programs". You will see the **Results in all programs** be appended below the search in the current program. These two modules are collapsible to save space.

If the fallback can not be done, you will be presented with a modal to go **Back to search** so that you can change the search terms.

Note

The fallback search is only possible when searching within a Program.

Search Unique ID

Search by attributes

First name: Sarah

Last name: bames

Gender

Search by attributes

Fill in at least 1 attributes to search

Results found in Child Programme
First name: Sarah, Last name: bames

First name: Sarah
Last name: Barnes
Organisation unit: Karina MCHP
Date of enrollment: 2022-05-14
Last updated 6 years ago
Enrolled

View dashboard View active enrollment

Page 1

Not finding the results you were looking for? Try to search all programs that use type "person".

Search in all programs

Create new Tracked entity instance

When none of the results match, you can create a new user by clicking **Create new** button on the bottom of the search page.

Based on the search domain, you will be navigated to the registration of the selected **Tracked entity type**, with or without program enrollment preselected. The search terms that you typed in before will be prefilled in the registration form.

Last name: Wagner
Organisation unit: Ola Daring Clinic
Date of enrollment: 02-10-2022
View dashboard View active enrollment

First name: Sarah
Last name: Moreno
Organisation unit: Malal MCHP
Date of enrollment: 15-12-2022
Enrolled
View dashboard View active enrollment

First name: Sarah
Last name: Richards
Organisation unit: PCM Hospital
Date of enrollment: 26-09-2022
Enrolled
View dashboard View active enrollment

Page 1

Not finding the results you were looking for? Try to search all programs that use type "person".

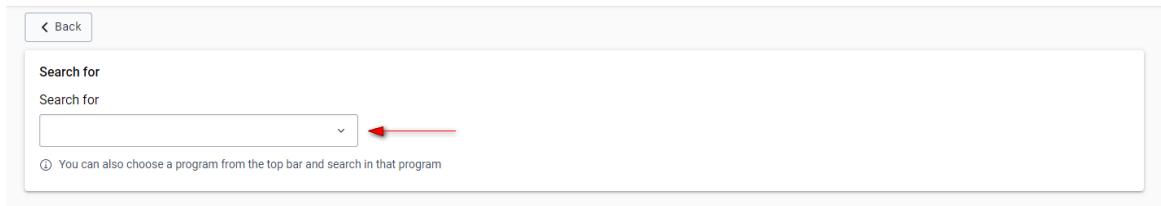
Search in all programs

If none of search results match, you can create a new "person".

Create new

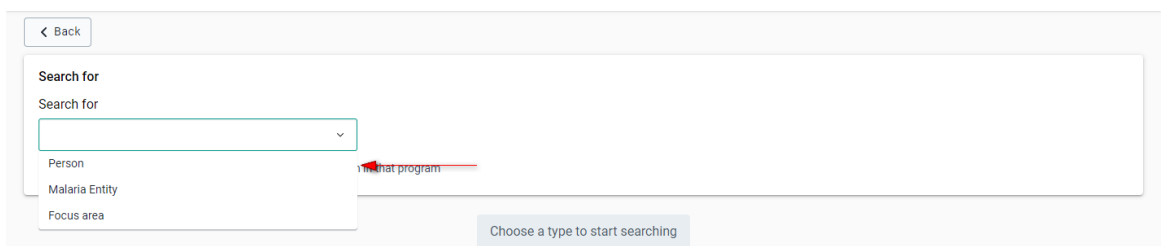
In Tracked entity type scope

1. Open the **Capture** app.
2. Click the **Search** button to open the search page.
3. Click on the drop down menu and select the type of entity you want to search for.



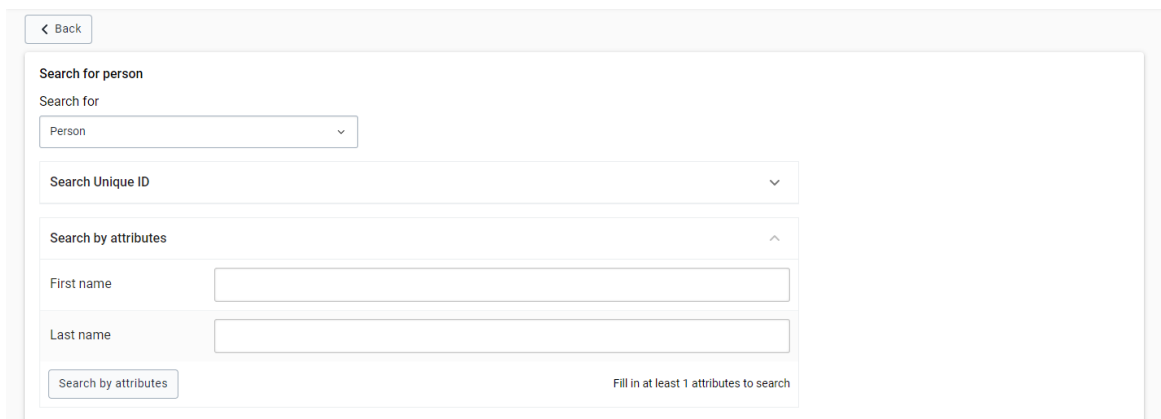
The screenshot shows a mobile application interface for searching. At the top left is a '< Back' button. Below it is a 'Search for' section with a text input field and a dropdown arrow. A red arrow points to the dropdown arrow. Below the input field is a small icon and the text: 'You can also choose a program from the top bar and search in that program'.

4. Make a selection from the list.



The screenshot shows the search page with the dropdown menu open. The menu lists three options: 'Person', 'Malaria Entity', and 'Focus area'. A red arrow points to the 'Person' option. Below the menu is a button labeled 'Choose a type to start searching'.

Based on the configuration of your organisation you will see the different attributes you can search with. An example of how this looks is the following.



The screenshot shows the search page for 'Person'. The 'Search for' dropdown is set to 'Person'. Below it is a 'Search Unique ID' dropdown. Underneath is a 'Search by attributes' section with two input fields: 'First name' and 'Last name'. At the bottom left is a 'Search by attributes' button, and at the bottom right is the text 'Fill in at least 1 attributes to search'.

To execute a search now:

5. Fill in the attributes you want to search with.
6. Click the Search by attributes button.

< Back

Search for person

Search for
Person

Search Unique ID

Search by attributes

First name: Sarah

Last name:

Search by attributes

Fill in at least 1 attributes to search

7. The results of the search will be displayed as follows.

Results found in Person
First name: Sarah

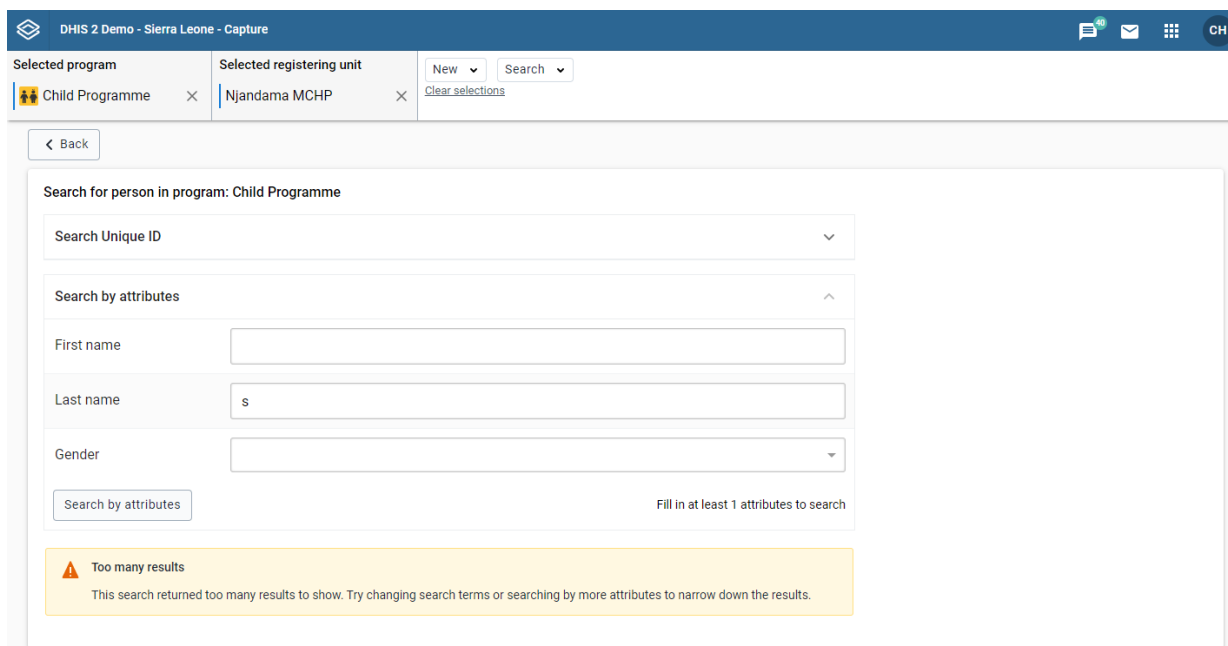
First name: Sarah Last name: Thompson	Last updated 5 years ago
First name: Sarah Last name: Wheeler	Last updated 6 years ago
First name: Sarah Last name: Cruz	Last updated 6 years ago
First name: Sarah Last name: Wagner	Last updated 6 years ago
First name: Sarah Last name: Moreno	Last updated 6 years ago

Page 1 |< < >

In this list you can see the entries that match your search. For each entry you have the option to click the "View Dashboard" button to view the dashboard for the **Tracked Entity Instance**.

Too many results functionality

The program or tracked entity type you are searching within may be configured with a limit on the number of results that are returned from a search. If your search results exceed this limit you will be shown a warning message like the one below.



DHIS 2 Demo - Sierra Leone - Capture

Selected program: Child Programme

Selected registering unit: Njandama MCHP

Search Unique ID

Search by attributes

First name

Last name: s

Gender

Search by attributes

Fill in at least 1 attributes to search

Too many results

This search returned too many results to show. Try changing search terms or searching by more attributes to narrow down the results.

Pagination

The results page shows up to five results at a time. You should try to use specific search criteria so that there are not too many matches. However, if there are more than five results, you can see the next results by using the > button at the end of the page.

System Case ID: SWK631820 Local Case ID: PID0003 Last Name: PSI Organisation unit: Ngelehun CHC Date of enrollment: 2020-07-26 View dashboard View active enrollment	Last updated 2 years ago Enrolled
System Case ID: HWI926062 Local Case ID: PID0004 Last Name: ISP Organisation unit: Ngelehun CHC Date of enrollment: 2020-07-26 View dashboard View active enrollment	Last updated 2 years ago Enrolled
System Case ID: ZHD860710 Local Case ID: Last Name: Johnson Organisation unit: Ngelehun CHC Date of enrollment: 2020-11-12 View dashboard View active enrollment	Last updated 2 years ago Enrolled
System Case ID: SJE763630 Local Case ID: PID0002 Last Name: PSI Organisation unit: Ngelehun CHC Date of enrollment: 2020-07-26 View dashboard View active enrollment	Last updated 2 years ago Enrolled
System Case ID: DYG342979 Local Case ID: PID0005 Last Name: ISP Organisation unit: Ngelehun CHC Date of enrollment: 2020-07-26 View dashboard View active enrollment	Last updated 2 years ago Enrolled

Page 1 | < < > >

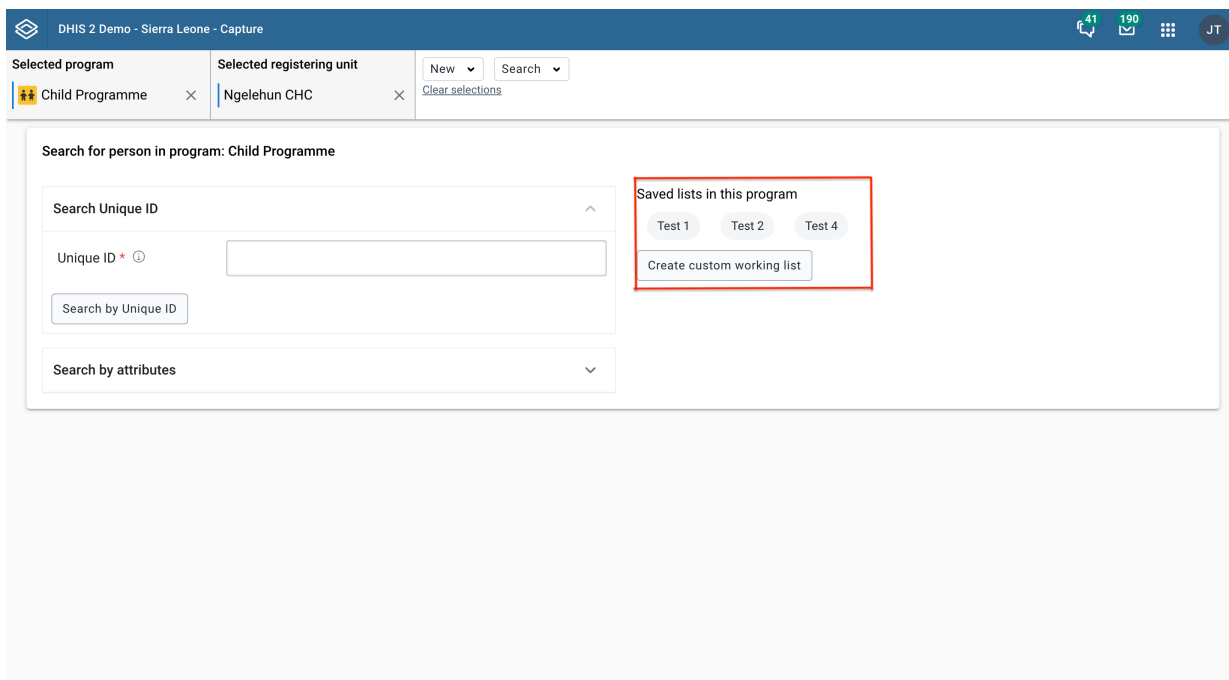
List tracked entity instances enrolled in program

1. Open the **Capture** app.
2. Select an organisation unit.

3. Select a tracker program with "Display front page list" set to true.
4. The program can have categories associated with it (implementing partner would be an example of such a category). If this is the case, fill them in.

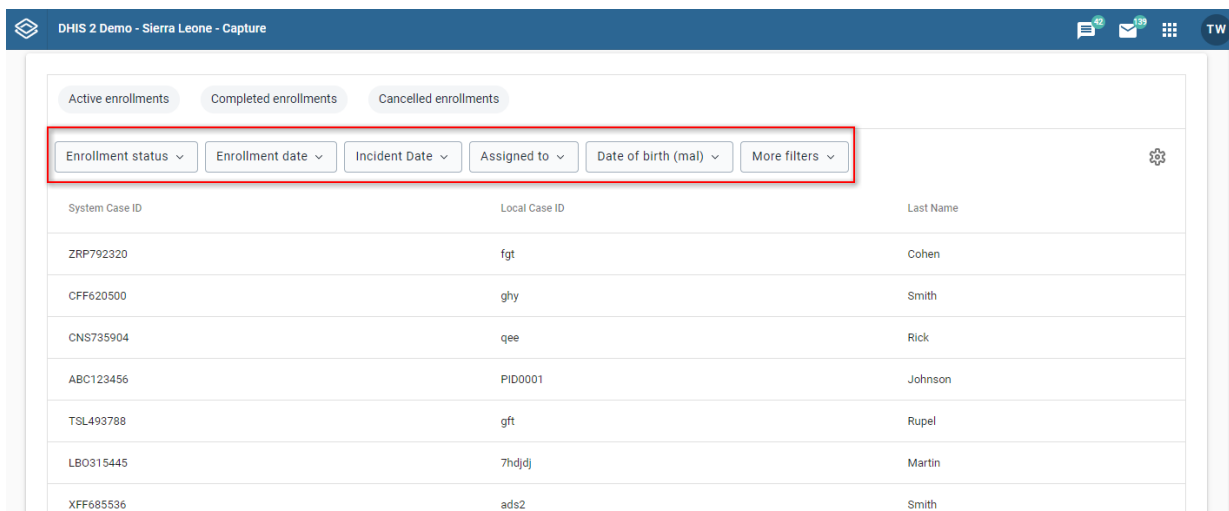
Custom TEI working list for programs with "Display front page list" set to false.

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select a tracker program with "Display front page list" set to false.
4. If the program has any custom working list you are able to click and load it.

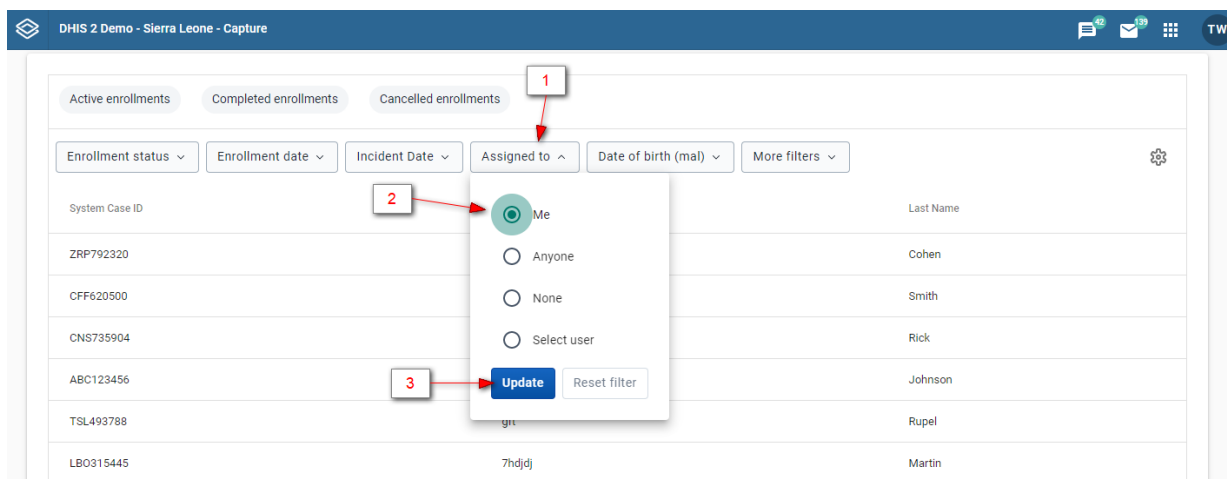


Filter the list

Use the buttons above the list itself to filter it.

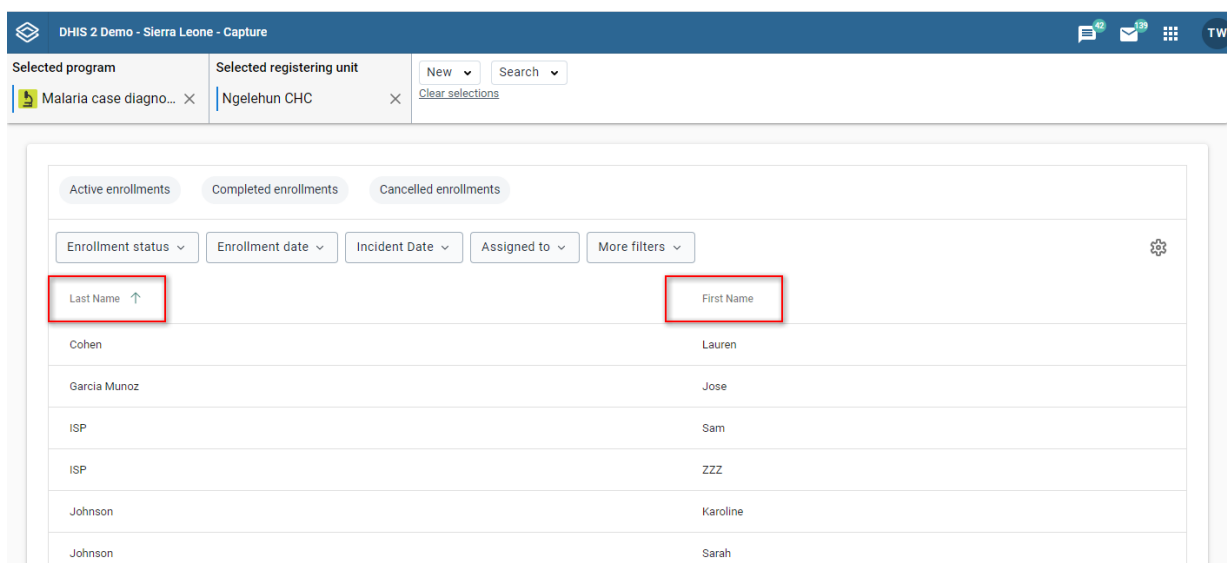


As an example, you could filter the list to show only tracked entity instances where you have been assigned an event: Click the "Assigned to" filter (1), select "Me" (2) and then "Apply" the changes (3).



Sort the list

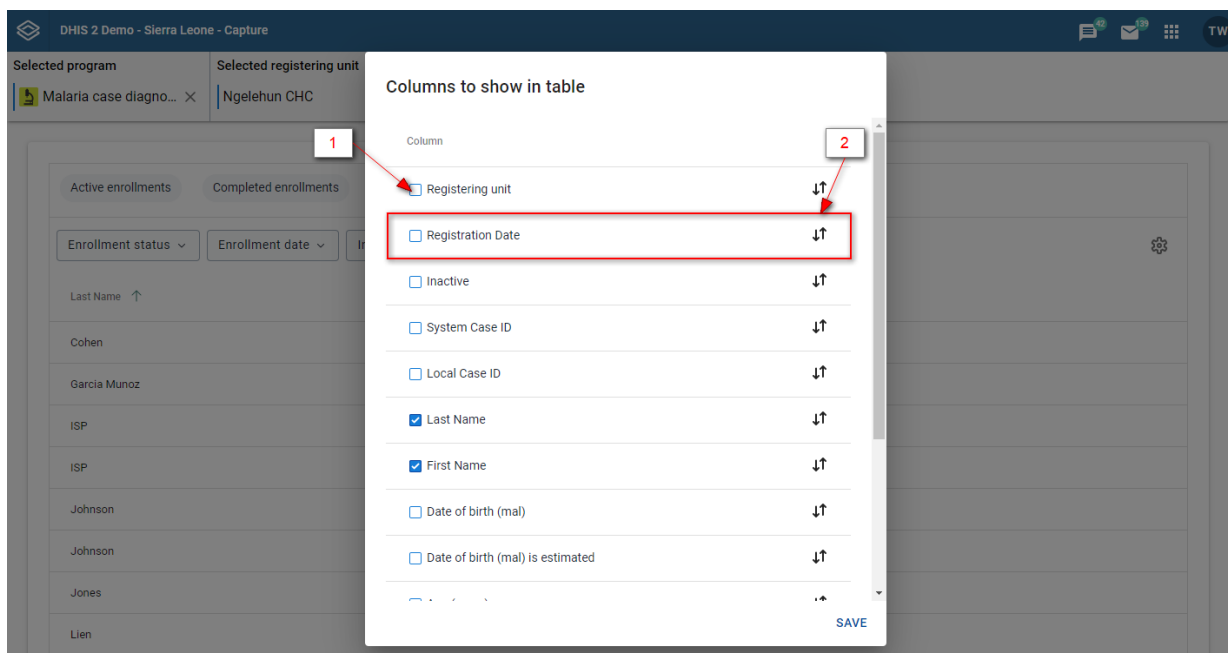
Click one of the column headers to sort the list by that column. A small arrow is displayed next to the column header to indicate the current sort order. Click again to change between ascending and descending order.



Modify the list layout

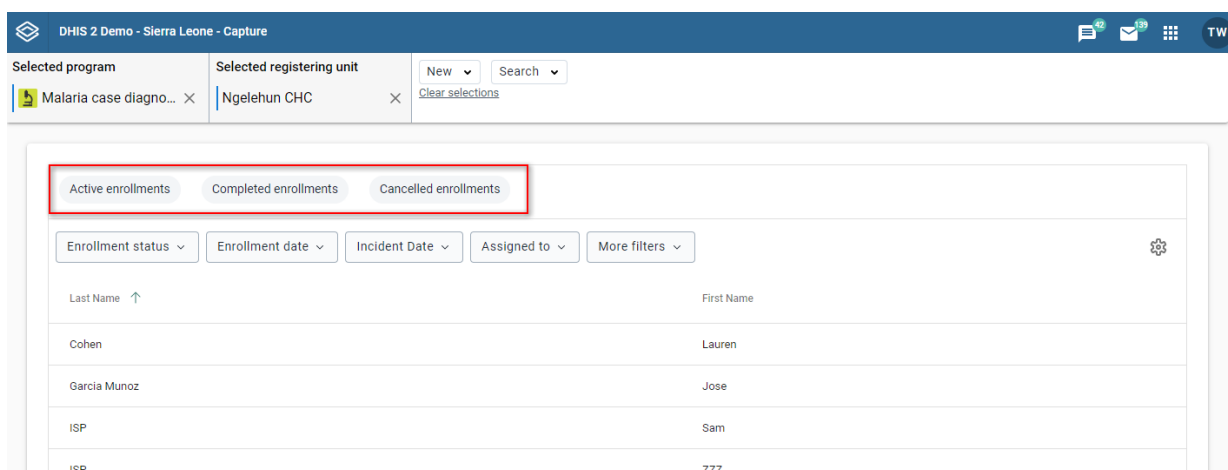
You can select which columns to show in the list and also reorganize the order of the columns.

Click the **gear** icon in the top right corner of the list. Tick the checkboxes for the the columns you would like to display (1) and reorganize the columns by dragging and dropping (2).



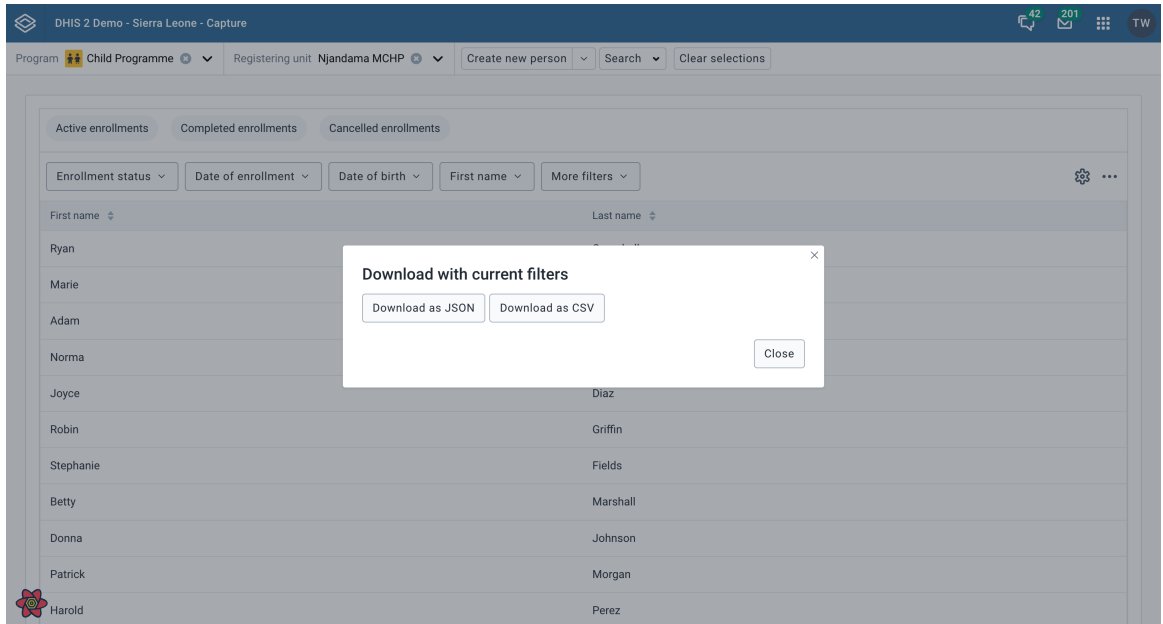
Loading a predefined list view

You will find the predefined list views above the filters for the list. Click to load a view.



Download the tracked entities list

1. Open the **Capture** app.
2. Select an organisation unit.
3. Select a tracker program with "Display front page list" set to true.
4. Click the **three dots** icon on the top right of the tracked entities list.
5. Click **Download data**.
6. Select the format you want to download.

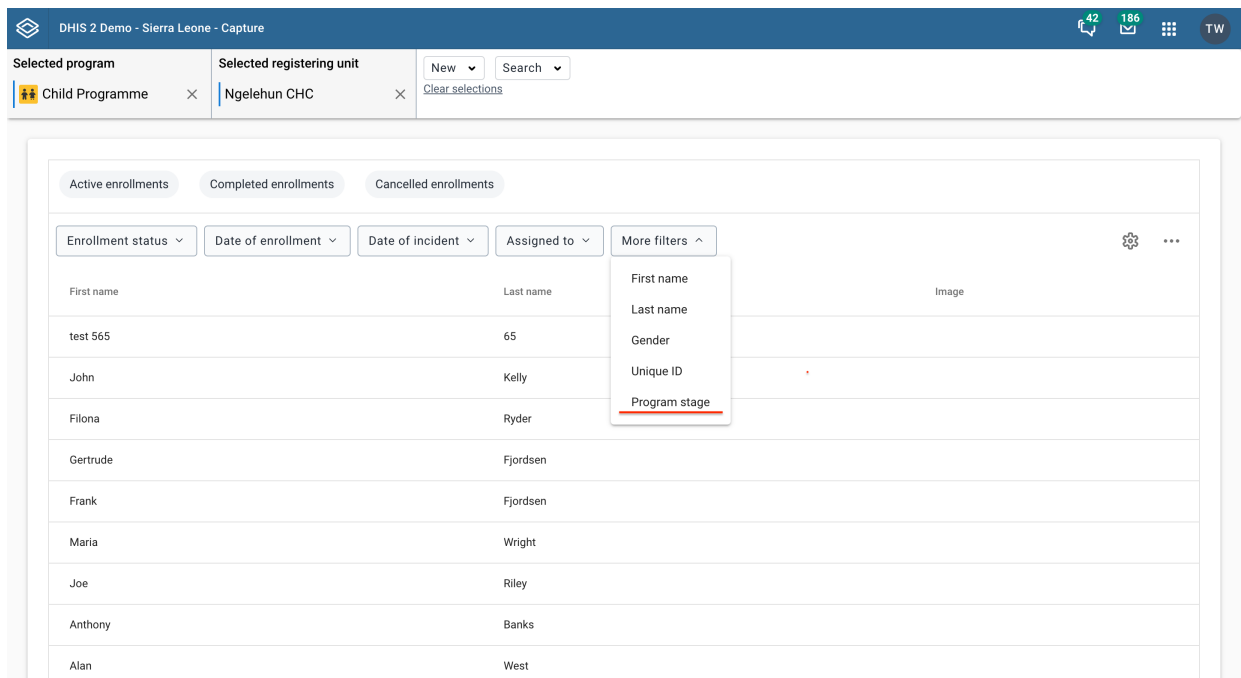


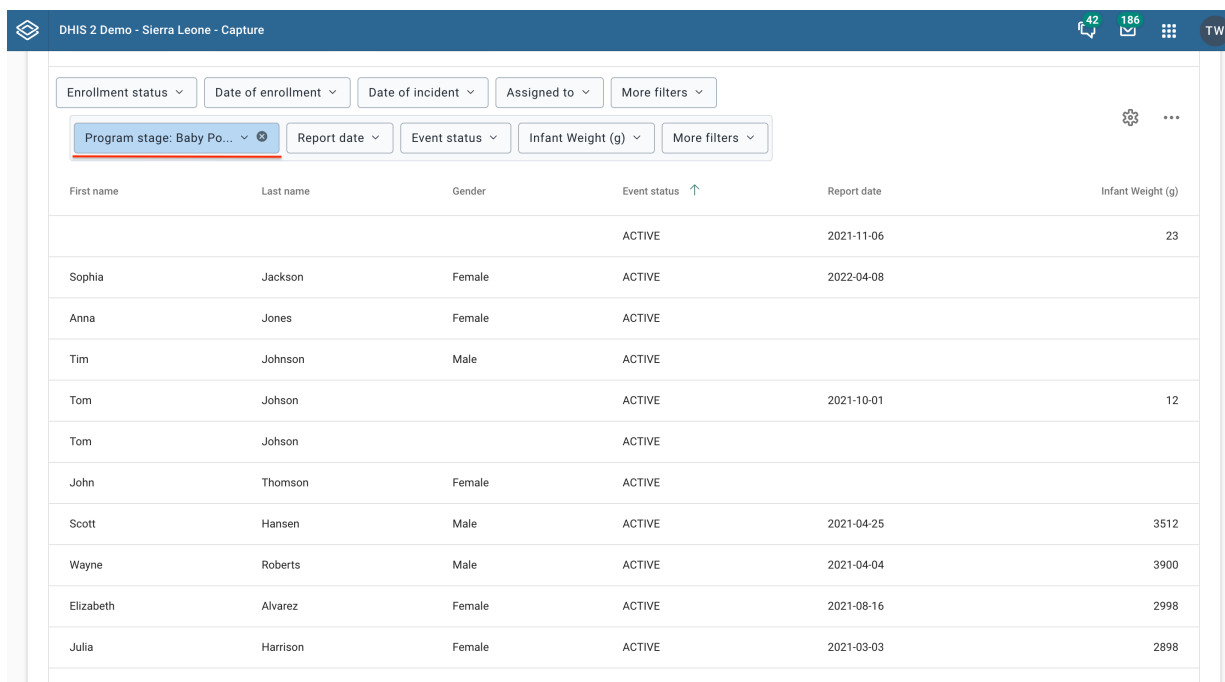
download tracked entities list

Note You can download the tracked entities list in JSON or CSV formats.

Tracker program stage working list

You can show data elements from a single stage in a working list. Select the "Program stage" option from the "More filters" dropdown, then choose a program stage.





First name	Last name	Gender	Event status	Report date	Infant Weight (g)
			ACTIVE	2021-11-06	23
Sophia	Jackson	Female	ACTIVE	2022-04-08	
Anna	Jones	Female	ACTIVE		
Tim	Johnson	Male	ACTIVE		
Tom	Johson		ACTIVE	2021-10-01	12
Tom	Johson		ACTIVE		
John	Thomson	Female	ACTIVE		
Scott	Hansen	Male	ACTIVE	2021-04-25	3512
Wayne	Roberts	Male	ACTIVE	2021-04-04	3900
Elizabeth	Alvarez	Female	ACTIVE	2021-08-16	2998
Julia	Harrison	Female	ACTIVE	2021-03-03	2898

The tracker program stage list can be [filtered](#), [sorted](#), [modified](#), [saved](#), [updated](#), [deleted](#) and [shared](#) in the same way as other working lists. Additionally, the program stage list can be [filtered by assignee](#), just like an event program list.

Implementer / administrator info

Metadata caching

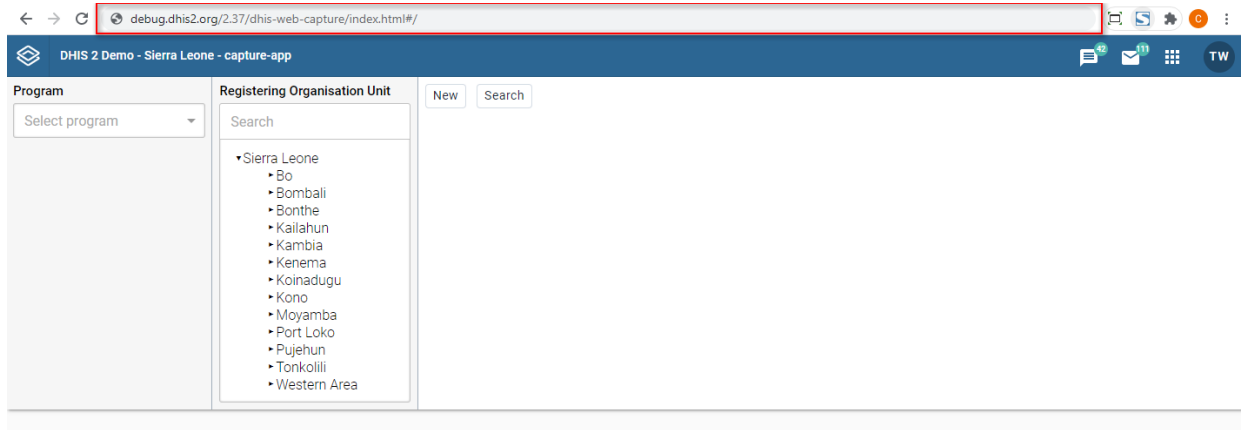
For performance reasons the Capture app caches metadata in the client browser. When metadata is updated on the server the changes need to be propagated to the clients that have already cached the metadata. Depending on the change, this is done in one of three ways:

1. If the change is bound to a program you will need to increase the program version for that particular program. For example, if you change the data elements in a program or a program rule, the version for the bound program needs to be increased.
2. If the change is NOT bound to a program you will need to increase ANY program version for the change to be propagated to the clients. Examples here are changes to constants, organisation unit levels or organisation unit groups.
3. The exception to the two rules above is option sets. Option sets have their own version property, i.e. increasing the option set version should ensure the option set metadata are propagated to the clients.

Enrollment dashboard

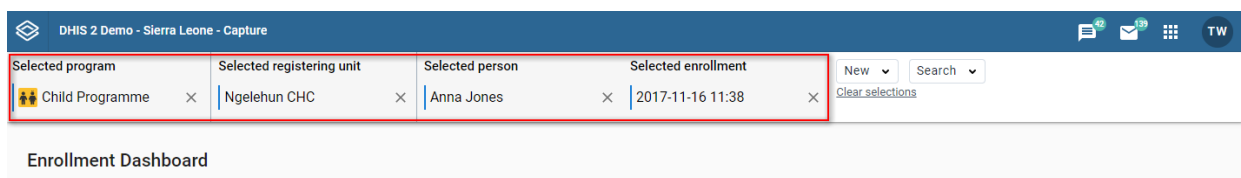
Reaching the enrollment dashboard via url

You reach the enrollment dashboard either by typing in the address bar of your browser or using the user interface of the capture app. In this section we are focusing on the first use-case, where you type or paste the url you want to access in the Address bar.

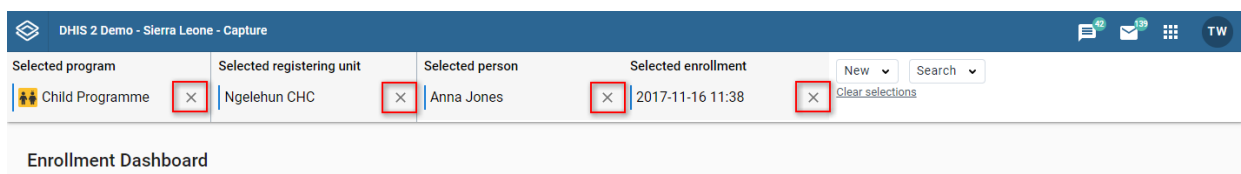


One way to reach the enrollment dashboard and view a specific tracked entity instance's enrollment is by using *only* the enrollment id. For example the link `.../dhis-web-capture/#/enrollment?enrollmentId=wBU0RAsYjKE` will take you the dashboard for the enrollment with id `wBU0RAsYjKE`.

The top of the dashboard defines your context. For example in the image below the context is as follows, the selected program is "Child Programme", the organisation unit is "Ngelehun CHC", the selected person is "Anna Jones" and the selected enrollment is "2017-11-16 11:38".

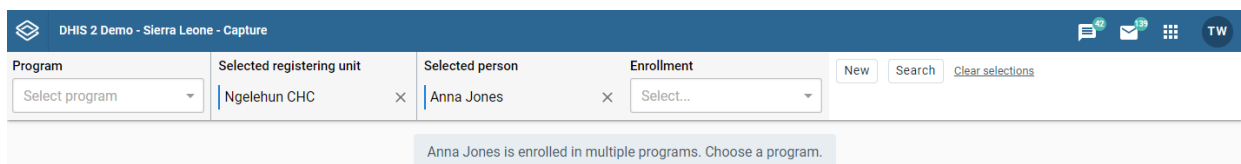


You can change your context by clicking the "x" button.



Deselecting the program

When you deselect the program you see the following



Selecting a program with enrollments

When program *and* enrollment selections are empty, you first have to select a program. If the tracked entity instance (in this case "Anna Jones") has enrollments under the program you select you will see the following message.

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture app interface. The top navigation bar includes a home icon, the title 'DHIS 2 Demo - Sierra Leone - Capture', and user information 'TW'. Below the navigation bar, there are four main sections: 'Selected program' (Child Programme), 'Selected registering unit' (Ngelehun CHC), 'Selected person' (Anna Jones), and 'Enrollment' (Select...). To the right of the 'Enrollment' section, there are 'New' and 'Search' dropdown menus and a 'Clear selections' link. A message box below the sections states: 'There are multiple enrollments for this program. Choose an enrollment to view the dashboard.'

Selecting a program with zero enrollments

If the tracked entity instance (in this case "Anna Jenkins") does not have enrollments under the program you select you will see a message explaining that there are no enrollments for that program. You will also be given the option to enroll "Anna Jenkins" in that program.

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture app interface. The top navigation bar includes a home icon, the title 'DHIS 2 Demo - Sierra Leone - Capture', and user information 'TW'. Below the navigation bar, there are four main sections: 'Selected program' (MNCH / PNC (Adult ...)), 'Selected registering unit' (Ngelehun CHC), 'Selected person' (Anna Jones), and 'Enrollment' (Select...). To the right of the 'Enrollment' section, there are 'New' and 'Search' dropdown menus and a 'Clear selections' link. A message box below the sections states: 'Anna Jones is not enrolled in this program. [Enroll Anna Jones in this program.](#)

Selecting an event program

When you select an event program you will see the following. (Remember event programs do not have enrollments in the system, only tracker programs do).

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture app interface. The top navigation bar includes a home icon, the title 'DHIS 2 Demo - Sierra Leone - Capture', and user information 'TW'. Below the navigation bar, there are four main sections: 'Selected program' (Antenatal care visit), 'Selected registering unit' (Ngelehun CHC), 'Selected person' (Anna Jones), and 'Enrollment' (Select...). To the right of the 'Enrollment' section, there are 'New' and 'Search' dropdown menus and a 'Clear selections' link. A message box below the sections states: 'Antenatal care visit is an event program and does not have enrollments. [Create a new event in this program.](#) [View working list in this program.](#)

You will also be given the option to either create a new event for the selected program or view the working lists for the selected program.

Selecting a program with a different tracked entity type

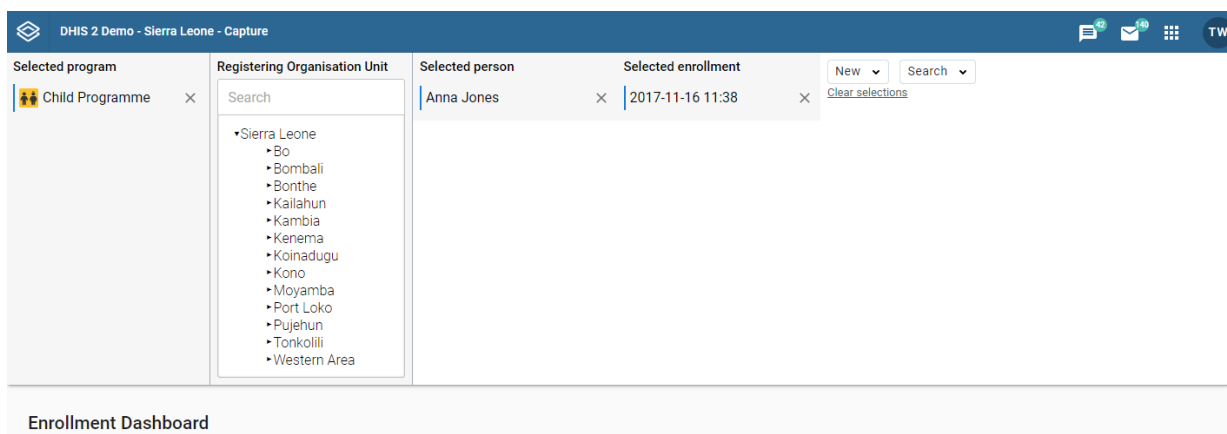
When your selected tracked entity type is a person, as in our example with Anna Jenkins, and you select a program that is not of type person but for example of a type Malaria case you will see the following.

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture app interface. The top navigation bar includes a home icon, the title 'DHIS 2 Demo - Sierra Leone - Capture', and user information 'TW'. Below the navigation bar, there are four main sections: 'Selected program' (Malaria case diagno...), 'Selected registering unit' (Ngelehun CHC), 'Selected person' (Anna Jones), and 'Enrollment' (Select...). To the right of the 'Enrollment' section, there are 'New' and 'Search' dropdown menus and a 'Clear selections' link. A message box below the sections states: 'Anna Jones is a person and cannot be enrolled in the Malaria case diagnosis, treatment and investigation. Choose another program that allows person enrollment. [Enroll a new malaria entity in this program.](#)

You are also given the option to enroll a tracked entity instance in the program you selected.

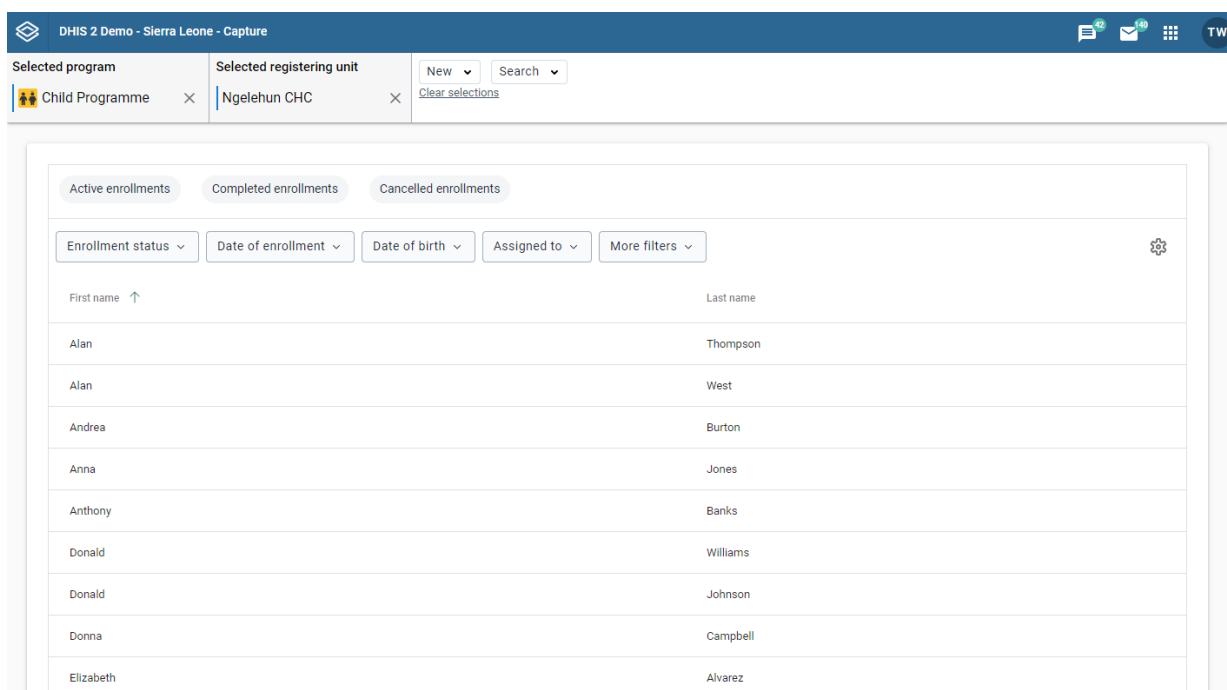
Deselecting the organisation unit

When you deselect the organisation unit you see the following



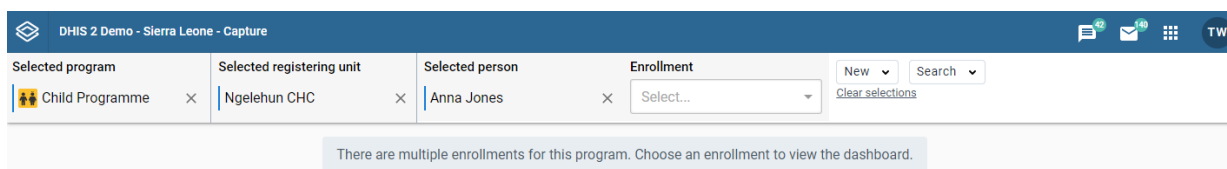
Deselecting the tracked entity instance

When you deselect the tracked entity instance, in this case "Anna Jones" you are taken to the working lists in that Tracker program.



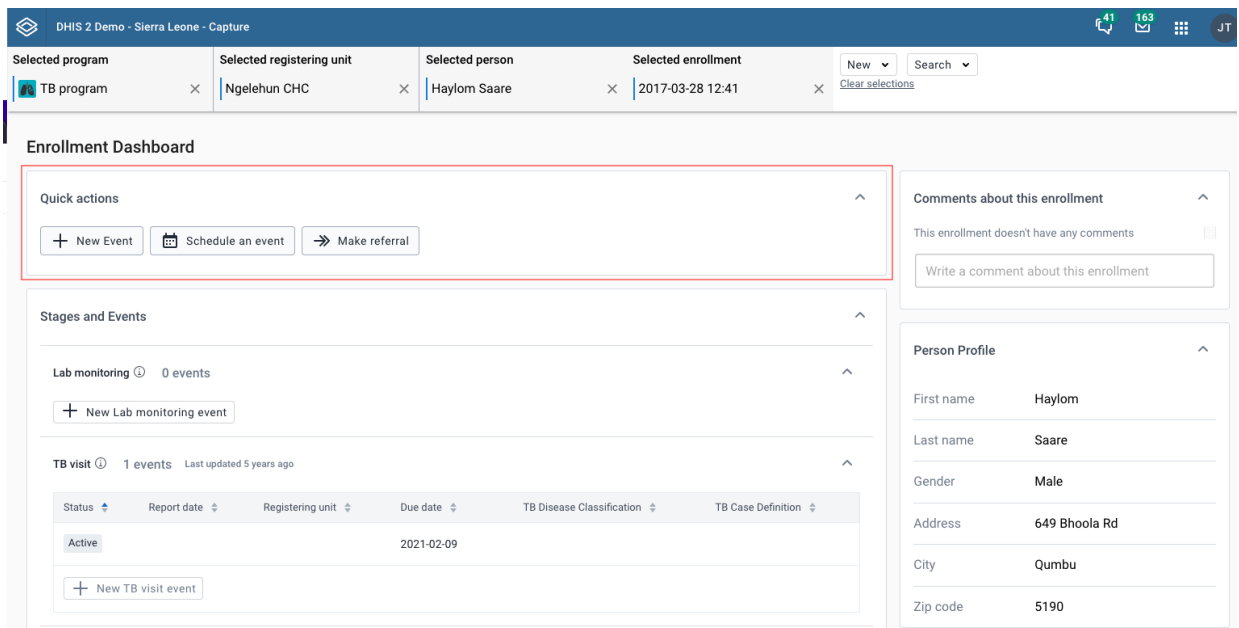
Deselecting the enrollment

When you deselect the enrollment you see the following



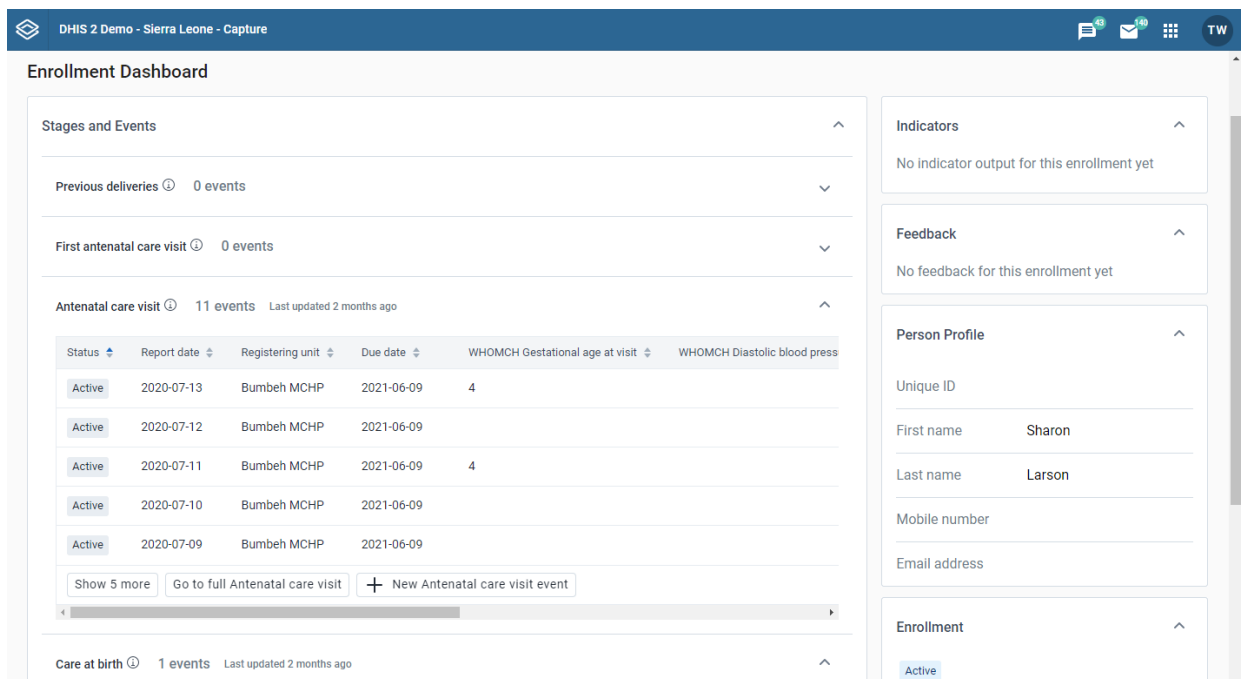
Quick actions

The quick actions widget offers shortcuts for frequently used actions for the current enrollment.

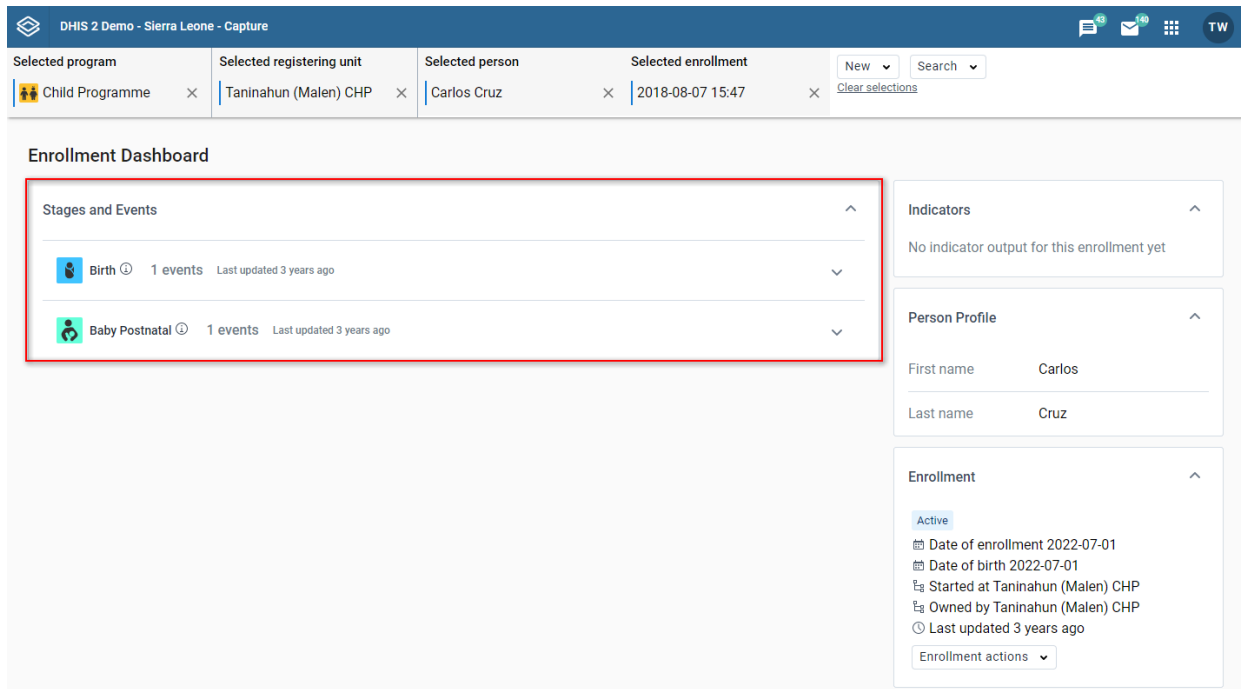


Program stage list

Stages can be collapsed or expanded to reveal the events inside.

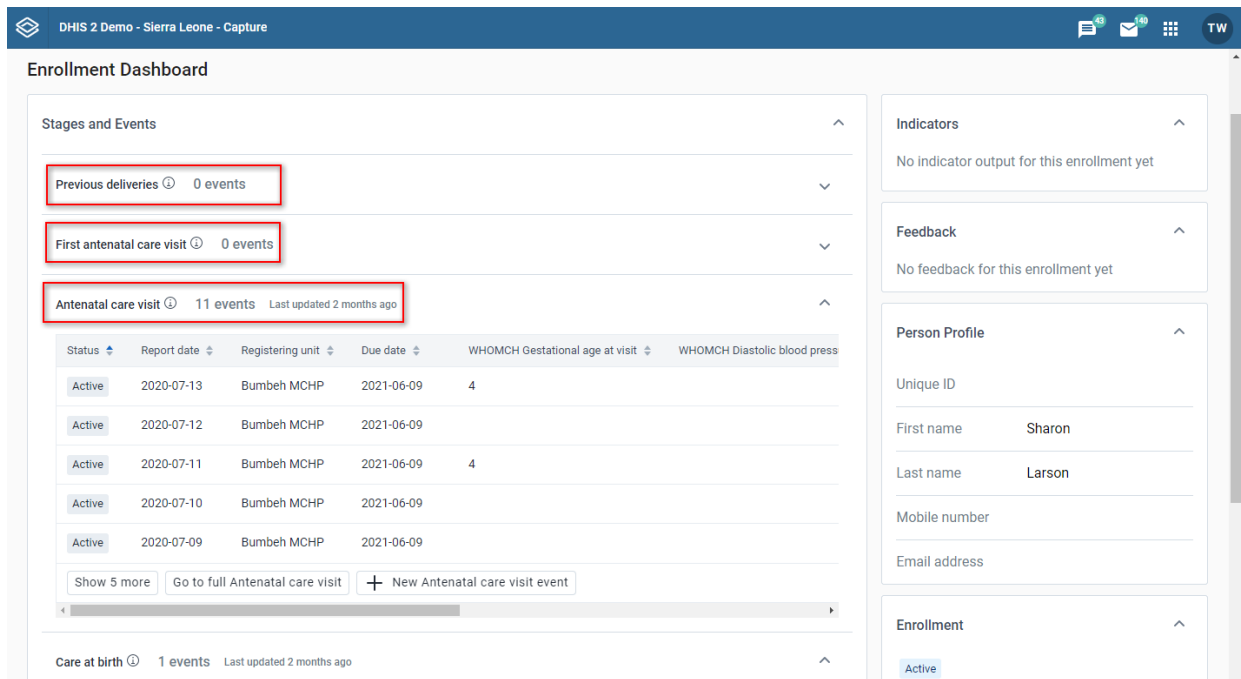


Collapsed stages



In the collapsed state, you can view the summary information about this stage including: - Icon - Program stage name - Program stage description (on hovering the information icon) - Total number of events - Last updated date Depending on the status of events, there can be additional information regarding: total number of overdue events or total number of scheduled events.

Expanded stages



When you expand the list, you will see the table contains the data of events in the stage. This includes mandatory columns: Status, Report date and Organization unit, the following columns depend on the data elements that have been selected as Display in list of event.

Events are sorted with most recent on top and other columns are also sortable.

Enrollment Dashboard

Stages and Events

Previous deliveries 0 events

First antenatal care visit 0 events

Antenatal care visit 11 events Last updated 2 months ago

Status	Report date	Registering unit	Due date	WHOMCH Gestational age at visit	WHOMCH Diastolic blood press
Active	2020-07-13	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-12	Bumbeh MCHP	2021-06-09		
Active	2020-07-11	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-10	Bumbeh MCHP	2021-06-09		
Active	2020-07-09	Bumbeh MCHP	2021-06-09		

Show 5 more Go to full Antenatal care visit + New Antenatal care visit event

Care at birth 1 events Last updated 2 months ago

Indicators: No indicator output for this enrollment yet

Feedback: No feedback for this enrollment yet

Person Profile: Unique ID, First name: Sharon, Last name: Larson, Mobile number, Email address

Enrollment: Active

When clicking **New {stage event name}** button, you will be redirected to the **Add new event page** for this selected stage.

Enrollment Dashboard

Stages and Events

Previous deliveries 0 events

First antenatal care visit 0 events

Antenatal care visit 11 events Last updated 2 months ago

Status	Report date	Registering unit	Due date	WHOMCH Gestational age at visit	WHOMCH Diastolic blood press
Active	2020-07-13	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-12	Bumbeh MCHP	2021-06-09		
Active	2020-07-11	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-10	Bumbeh MCHP	2021-06-09		
Active	2020-07-09	Bumbeh MCHP	2021-06-09		

Show 5 more Go to full Antenatal care visit + New Antenatal care visit event

Care at birth 1 events Last updated 2 months ago

Indicators: No indicator output for this enrollment yet

Feedback: No feedback for this enrollment yet

Person Profile: Unique ID, First name: Sharon, Last name: Larson, Mobile number, Email address

Enrollment: Active

When clicking **Go to full {stage event name}** button, you will be redirected to the **Program stage list page** for this selected stage.

Enrollment Dashboard

Stages and Events

Previous deliveries 0 events

First antenatal care visit 0 events

Antenatal care visit 11 events Last updated 2 months ago

Status	Report date	Registering unit	Due date	WHOMCH Gestational age at visit	WHOMCH Diastolic blood press
Active	2020-07-13	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-12	Bumbeh MCHP	2021-06-09		
Active	2020-07-11	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-10	Bumbeh MCHP	2021-06-09		
Active	2020-07-09	Bumbeh MCHP	2021-06-09		

Show 5 more Go to full Antenatal care visit + New Antenatal care visit event

Care at birth 1 events Last updated 2 months ago

Indicators: No indicator output for this enrollment yet

Feedback: No feedback for this enrollment yet

Person Profile: Unique ID, First name: Sharon, Last name: Larson, Mobile number, Email address

Enrollment: Active

Expanded stages with more than 5 events

In case there are more than 5 events in the list, only the first 5 are shown. You will be able to view the rest by clicking **Show more**.

Enrollment Dashboard

Stages and Events

Previous deliveries 0 events

First antenatal care visit 0 events

Antenatal care visit 11 events Last updated 2 months ago

Status	Report date	Registering unit	Due date	WHOMCH Gestational age at visit	WHOMCH Diastolic blood press
Active	2020-07-13	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-12	Bumbeh MCHP	2021-06-09		
Active	2020-07-11	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-10	Bumbeh MCHP	2021-06-09		
Active	2020-07-09	Bumbeh MCHP	2021-06-09		

Show 5 more Go to full Antenatal care visit + New Antenatal care visit event

Care at birth 1 events Last updated 2 months ago

Indicators: No indicator output for this enrollment yet

Feedback: No feedback for this enrollment yet

Person Profile: Unique ID, First name: Sharon, Last name: Larson, Mobile number, Email address

Enrollment: Active

If you want to collapse events, you can use **Reset list** button which will return the table back to the default sorting and initial 5 events.

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture interface. The main content area displays a table of Antenatal care visits. The table has columns for Status, Report date, Registering unit, Due date, WHOMCH Gestational age at visit, and WHOMCH Diastolic blood press. The 'Reset list' button is highlighted with a red box. To the right, the Person Profile widget shows details for Sharon Larson, including Unique ID, First name, Last name, Mobile number, and Email address. Below the profile, the Enrollment widget shows the status as Active, Date of first visit 2021-02-19, Started at Bumbeh MCHP, Owned by Bumbeh MCHP, and Last updated 4 years ago.

Status	Report date	Registering unit	Due date	WHOMCH Gestational age at visit	WHOMCH Diastolic blood press
Active	2020-07-13	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-12	Bumbeh MCHP	2021-06-09		
Active	2020-07-11	Bumbeh MCHP	2021-06-09	4	
Active	2020-07-10	Bumbeh MCHP	2021-06-09		
Active	2020-07-09	Bumbeh MCHP	2021-06-09		
Active	2020-07-08	Bumbeh MCHP	2021-06-09		
Active	2020-07-06	Bumbeh MCHP	2021-06-22	3	
Active	2020-05-19	Bumbeh MCHP	2020-05-19		
Active	2020-05-17	Bumbeh MCHP	2020-05-17		
Active	2020-04-13	Bumbeh MCHP	2020-04-13		

Enrollment widget

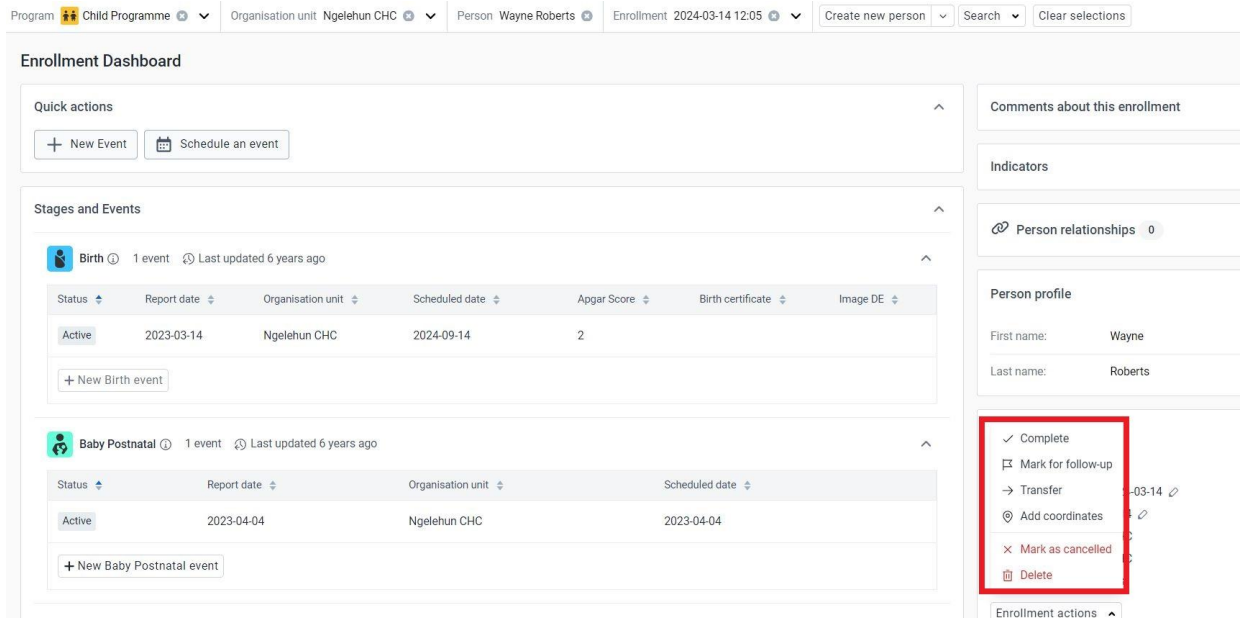
On the enrollment page you can see the enrollment widget

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture interface. The top navigation bar displays the selected program (Child Programme), selected registering unit (Ngelehun CHC), selected person (Wayne Roberts), and selected enrollment (2018-08-06 21:20). The main content area is the Enrollment Dashboard, which includes a Stages and Events section with Birth and Baby Postnatal events, an Indicators section, a Person Profile section for Wayne Roberts, and an Enrollment widget. The Enrollment widget is highlighted with a red box and shows the status as Complete, Date of enrollment 2021-03-14, Date of birth 2021-03-14, Started at Ngelehun CHC, Owned by Ngelehun CHC, and Last updated 2 hours ago.

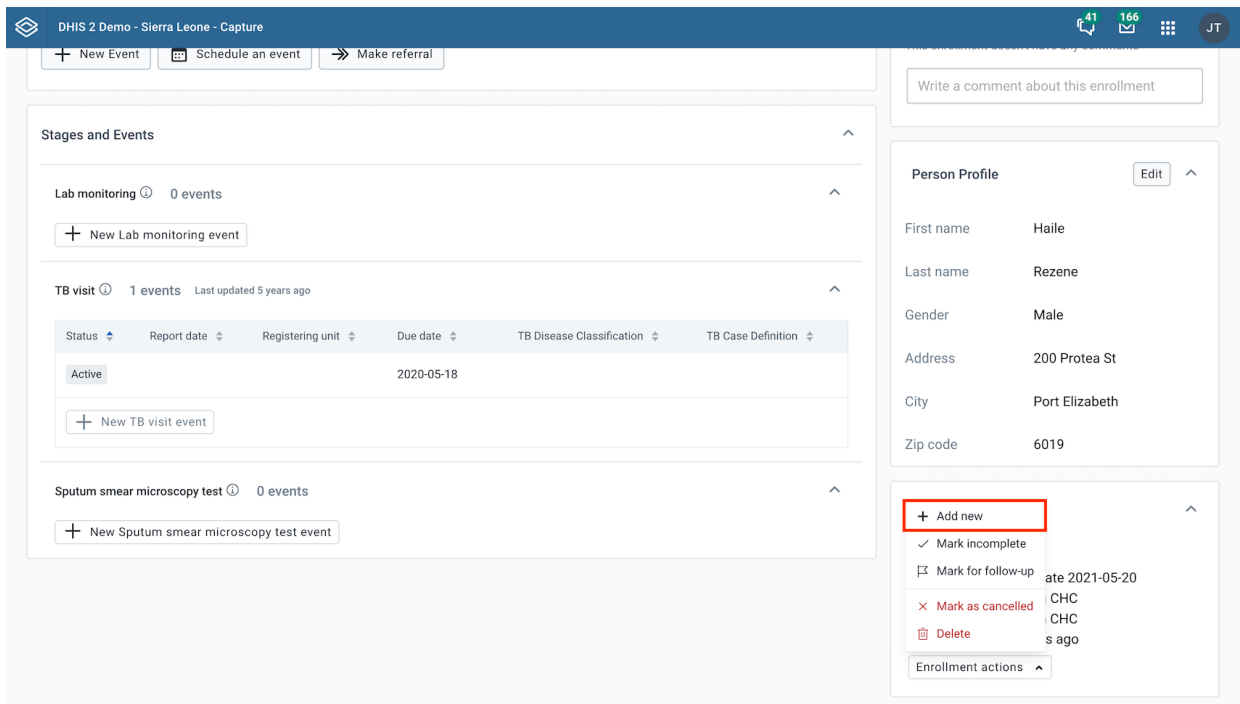
Enrollment actions

When you click on the enrollment actions button, a menu with all the available actions will open. You can:

- Change the enrollment status to Active, Canceled or Completed using the buttons in the menu.
- Mark or remove the enrollment for a follow-up.
- Transfer the enrollment to another organisation unit
- Delete the enrollment
- Add coordinates to the enrollment

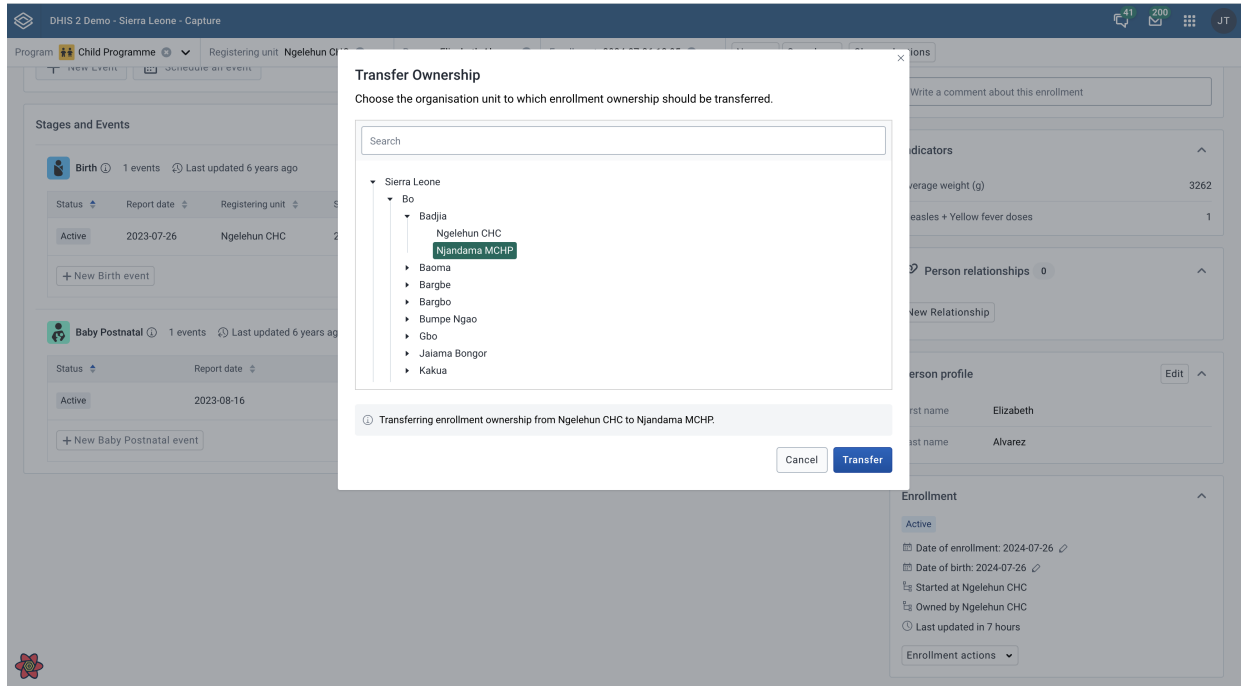


There can only be one active enrollment at a time. If there are no active enrollments, there will be a button **Add new** to enroll the tracked entity instance in the program again. If the program only allows one enrollment per tracked entity instance, the **Add new** button will be disabled with a tooltip saying Only one enrollment per {TET} is allowed in this program.



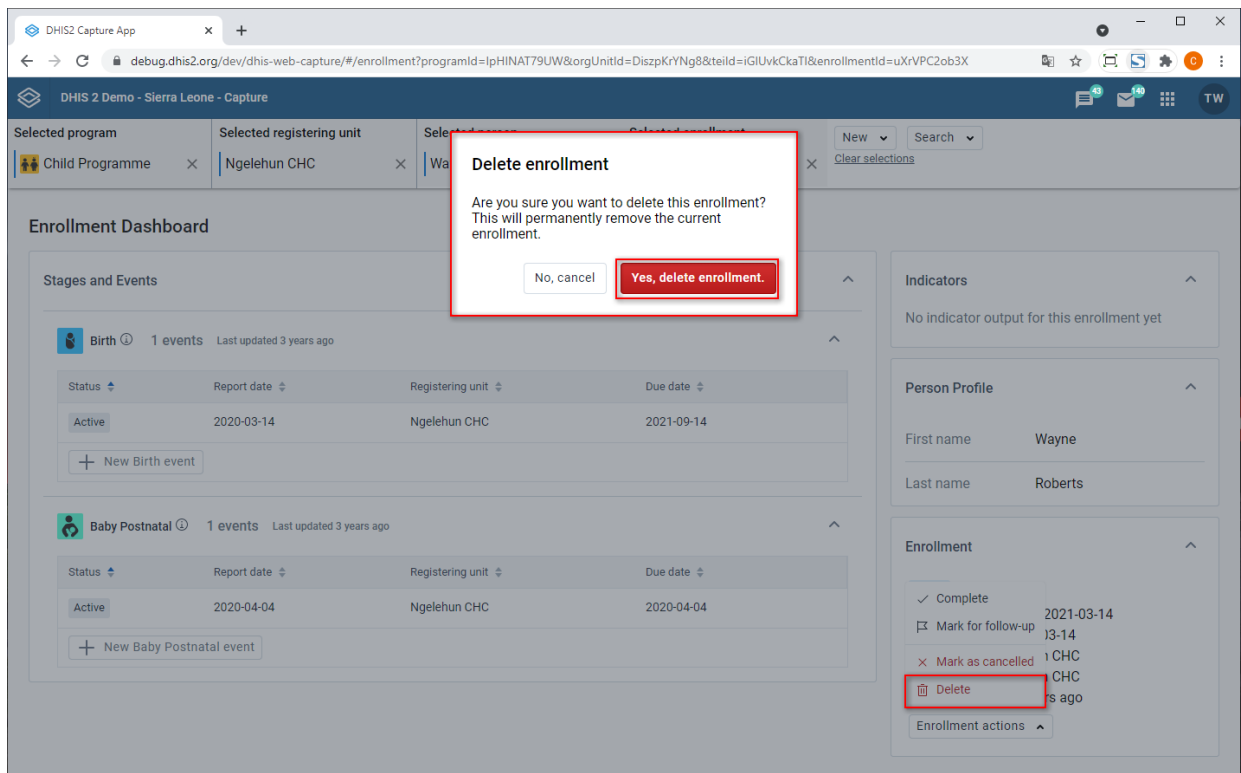
Transfer the enrollment to another organisation unit

In the enrollment actions, you could also choose to transfer the enrollment to another organisation unit. Click the transfer button and select the organisation unit you want to transfer the enrollment to.



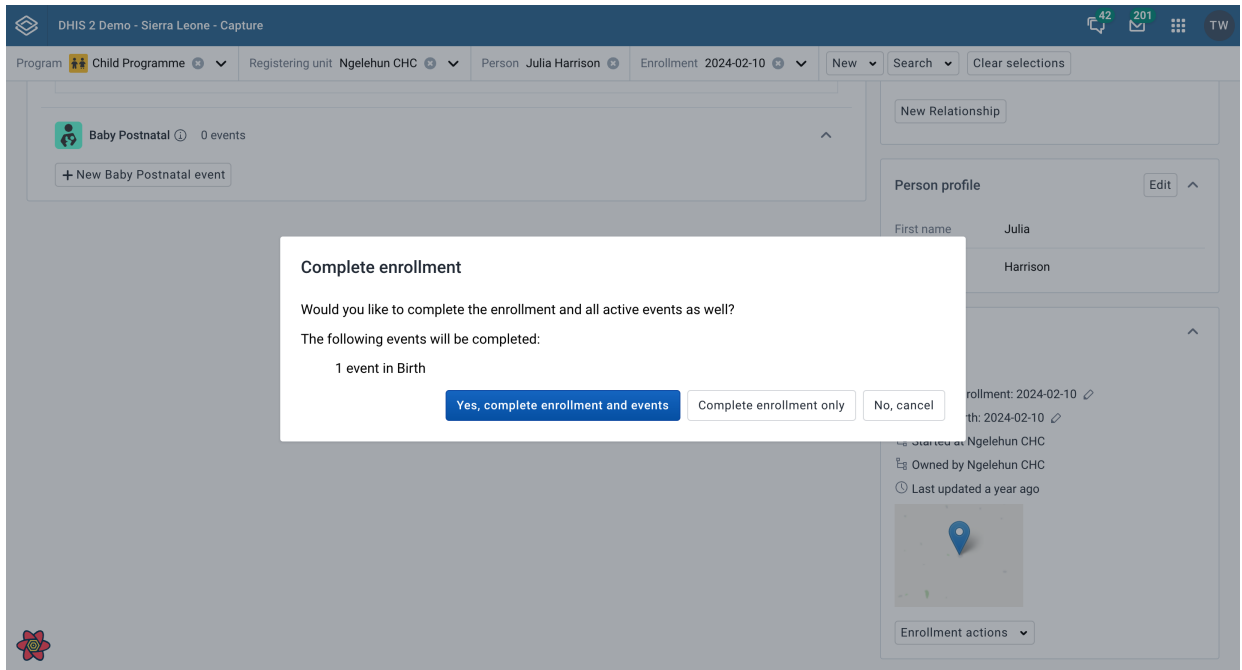
Delete the enrollment

You can delete the enrollment by clicking the delete button and confirming the action in the modal.



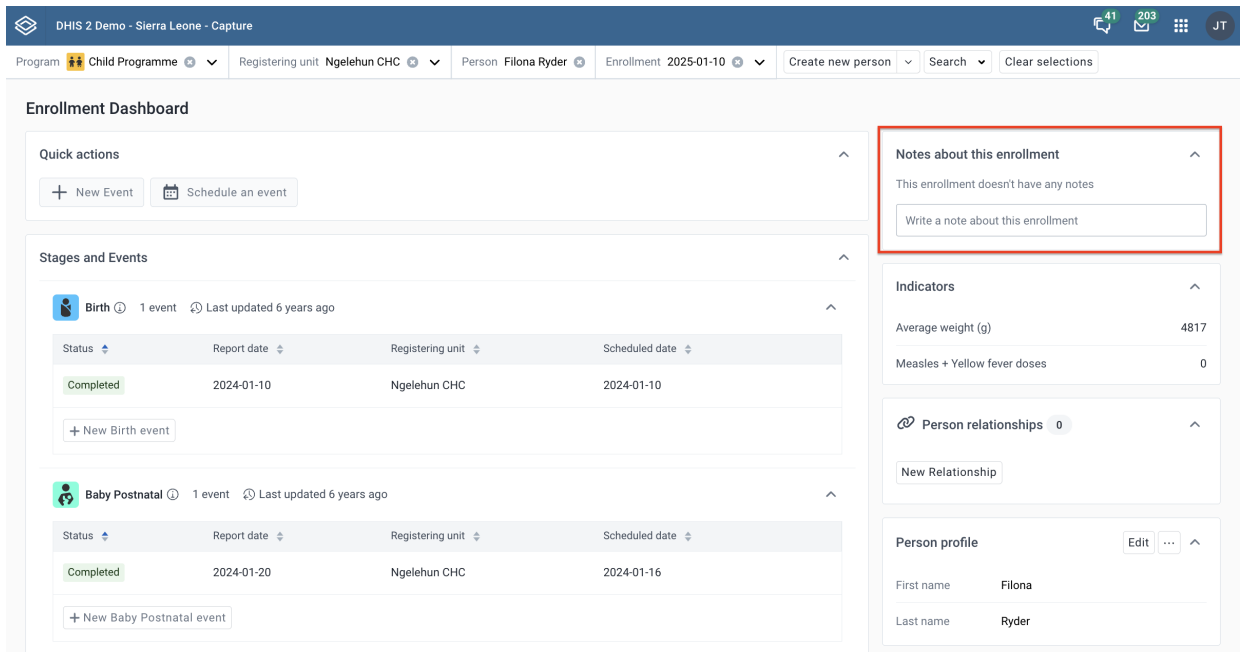
Complete the enrollment

You can complete the enrollment by clicking the complete button. When there are active events, you can choose to complete the enrollment along with the events from the confirmation modal.



Enrollment note widget

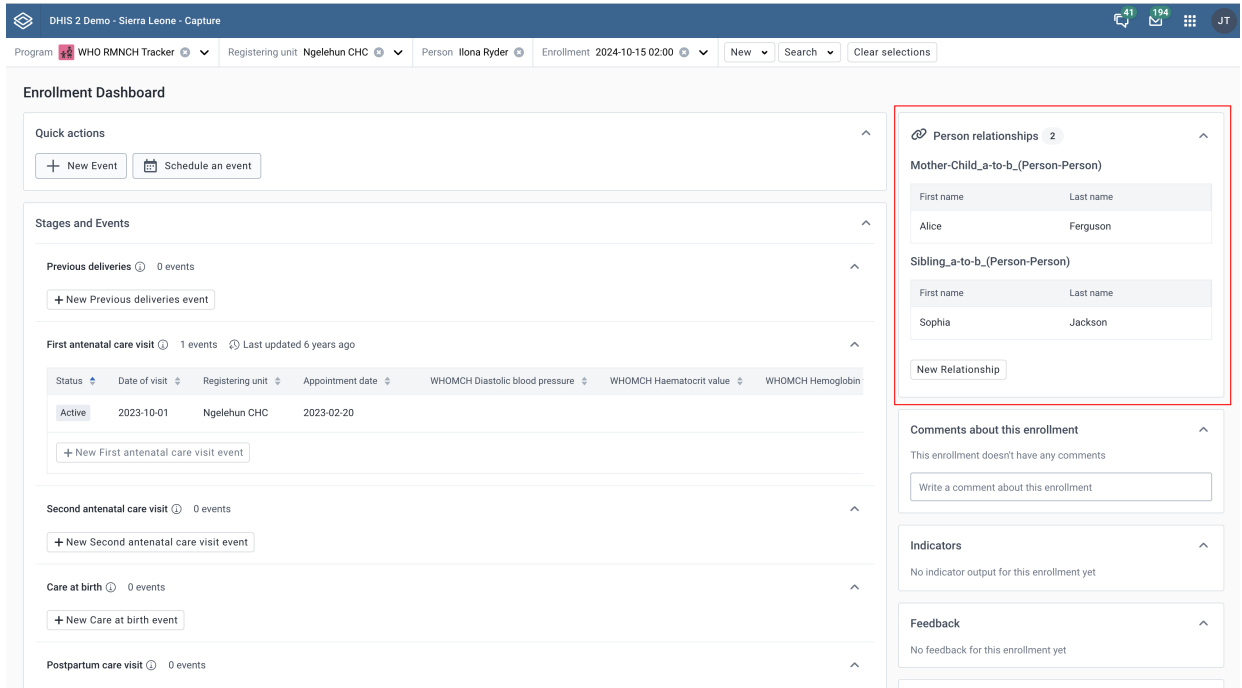
The enrollment note widget displays notes and allows addition of notes, associated with the current enrollment.



By clicking in the text field, you will be able to enter new text and see action buttons **Save note** and **Cancel**. Be aware that Enrollment notes are attributed to a user and cannot be deleted.

Relationship widget

The Relationships widget on the enrollment dashboard is used for viewing the record's linked relationships to other records. The number next to the title signifies the total number of relationships

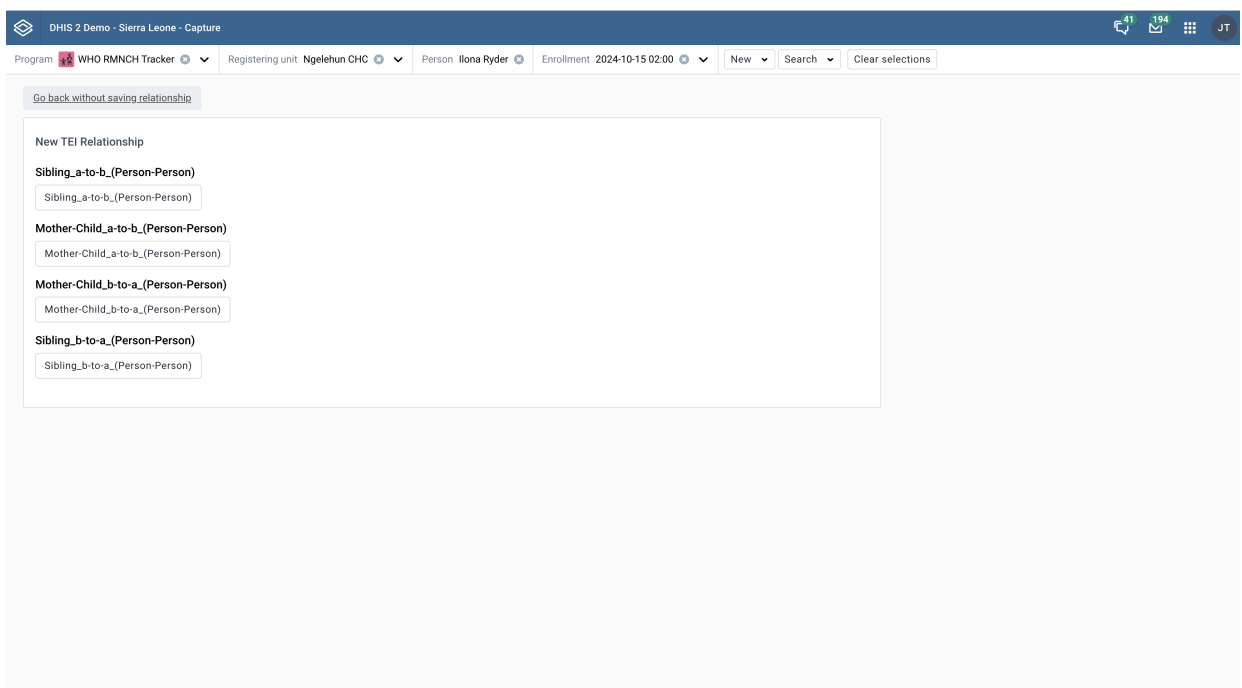


For tracked entity instance relationships, the key attributes shown in the widget are the attributes that have been selected to be displayed on the relationship type page in Maintenance.

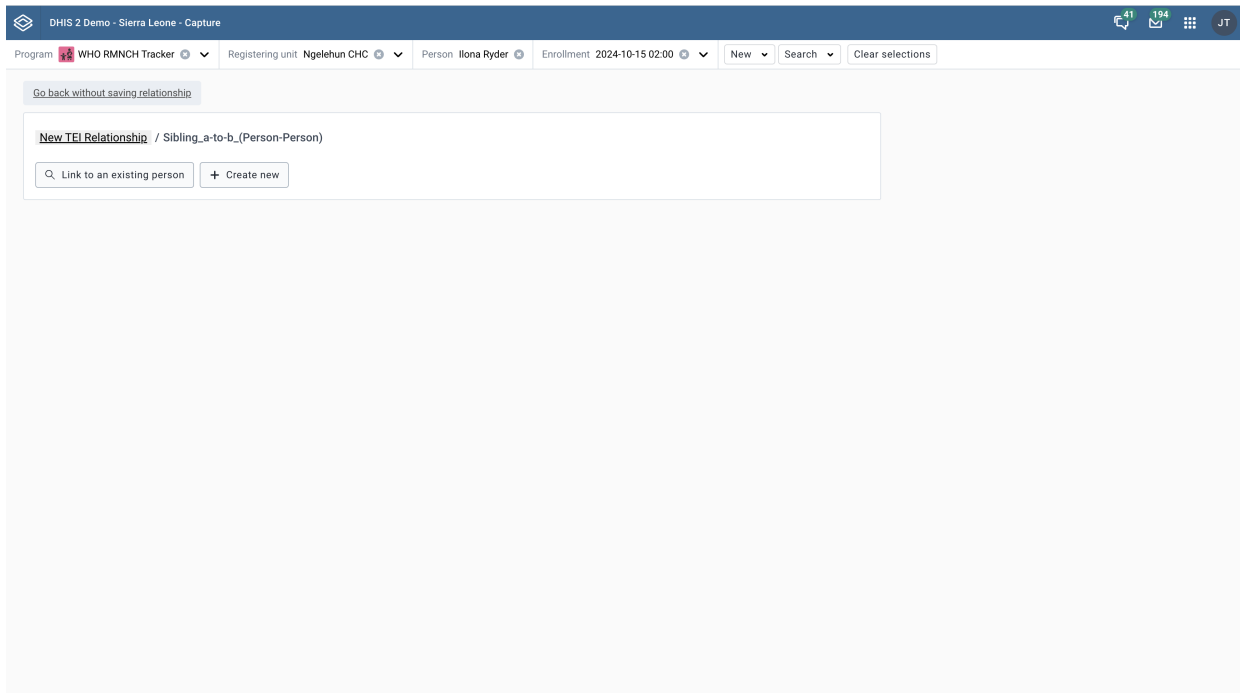
If no attributes are selected, it will just show a row per record with tracked entity type name and relationship creation date.

When clicking a tracked entity instance you should be taken to the Enrollment Dashboard. If the relationship type includes a program, you should be taken to the latest enrollment for that program. If no program is specified, you should still be sent to the enrollment dashboard, but without a program.

Click the **Add new** button to add a new relationship. Adding a new relationship opens a dialog where you can select the applicable relationship type.

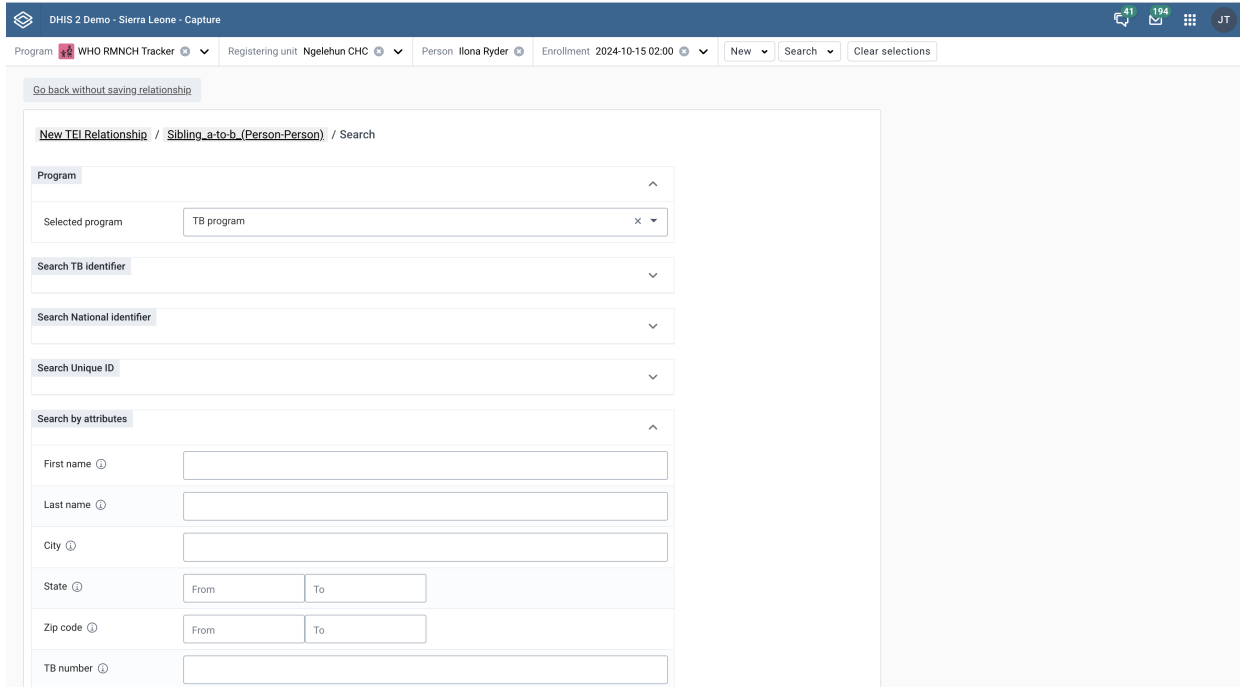


Choose between linking to an existing tracked entity instance or creating a new one.



Existing tracked entity instance

Use the search form to find any existing record to link to.



New tracked entity instance

Use the form to create a new record and link.

The screenshot shows the 'New TFI Relationship / Sibling_a-to-b_(Person-Person) / Register' form. It is divided into several sections:

- Registration:** Organisation Unit (Ngelehun CHC), Program (TB program).
- Enrollment:** Start of treatment date (2023-10-03).
- Profile:** Fields for First name, Last name, Gender, TB identifier (0736877399), Age (with sub-fields for Years, Months, Days), Address, and City.

Tracked entity instance profile widget

On the enrollment dashboard, you can view the tracked entity instance profile widget. Inside the profile widget you can view the key attributes values.

The screenshot shows the enrollment dashboard with a table of 'Second antenatal care visit' events. The 'Person Profile' widget is highlighted with a red box, showing the following details:

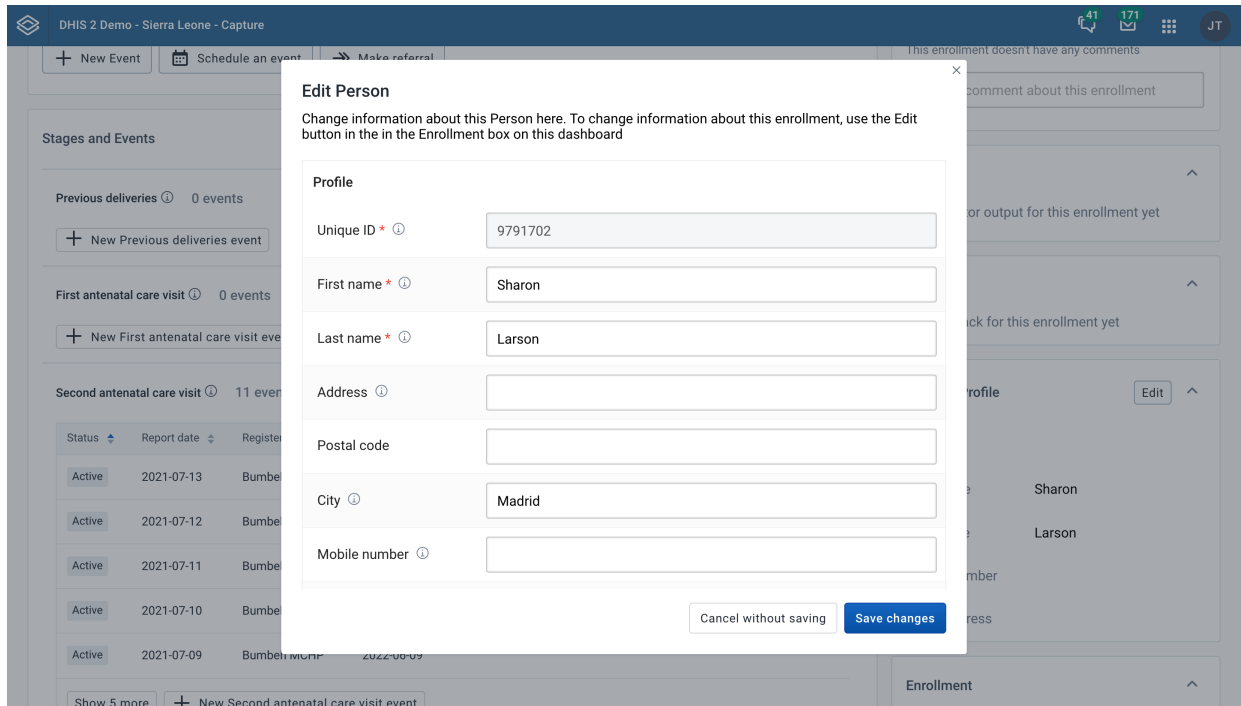
Status	Report date	Registering unit	Due date	WHOMCH Gestational age at visit	WHOMCH Diastolic blood pressure
Active	2021-07-13	Bumbeh MCHP	2022-06-09	4	
Active	2021-07-12	Bumbeh MCHP	2022-06-09		
Active	2021-07-11	Bumbeh MCHP	2022-06-09	4	
Active	2021-07-10	Bumbeh MCHP	2022-06-09		
Active	2021-07-09	Bumbeh MCHP	2022-06-09		

The 'Person Profile' widget shows:

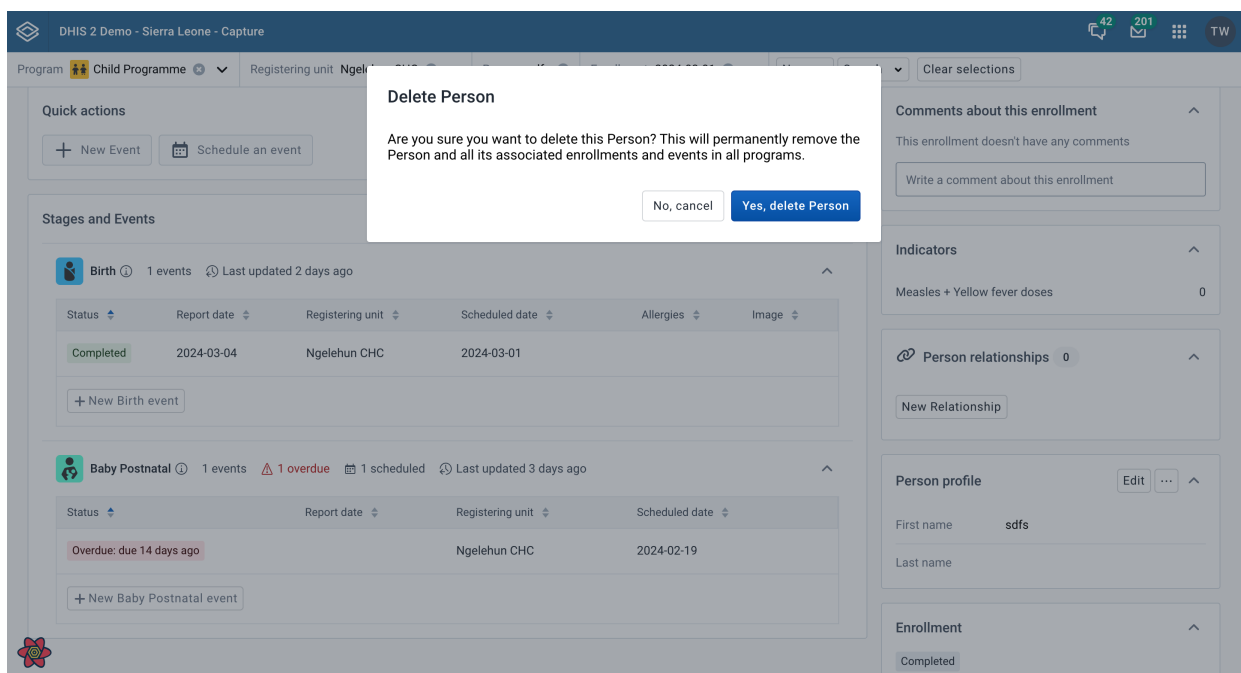
- Unique ID
- First name: Sharon
- Last name: Larson
- Mobile number
- Email address

 An 'Edit' button is visible in the top right corner of the profile widget.

Click the **Edit** button to make changes to the tracked entity instance profile. Editing the profile opens a dialog where the profile attributes can be changed.



Click the **Delete** $\{tracked\ entity\ type\}$ button to delete the tracked entity. You can confirm the action from the dialog. Once confirmed, tracked entity and all its associated enrollment and events across all programs will be deleted. To delete a tracked entity that has any enrollments, the user needs the authority **Delete tracked entity instance and associated enrollments and events**.



Feedback widget

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture interface. At the top, there are tabs for 'Selected program' (Child Programme), 'Selected registering unit' (Ngelehun CHC), 'Selected person' (Anna Jones), and 'Selected enrollment' (2017-11-16 11:38). Below this is the 'Enrollment Dashboard' with several widgets:

- Stages and Events:**
 - Birth: 1 events, Last updated 4 years ago
 - Baby Postnatal: 2 events, 1 overdue, 1 scheduled, Last updated 4 years ago
- Indicators:** Measles + Yellow fever doses
- Feedback (highlighted in red):**
 - More than 3 previous enrollments in this program. Confirm that this enrollment is active.
 - Person has been enrolled in RMNCH program in the last 2 years.
- Person Profile:**
 - First name: Anna
 - Last name: Jones
- Enrollment:** (partially visible)

On the enrollment dashboard, the feedback widget displays text and values that are triggered by certain conditions. If the current dashboard triggers some rules set up in the program, the text or values will be automatically displayed.

Empty state

If there isn't any feedback for the current dashboard, the widget shows a short *empty* message. If there aren't any program rules that could show feedback for the current dashboard then the widget is hidden.

Indicator widget

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture interface, similar to the previous one. The 'Enrollment Dashboard' widgets are:

- Stages and Events:**
 - Birth: 1 events, Last updated 4 days ago
 - Baby Postnatal: 2 events, Last updated 4 days ago
- Indicators (highlighted in red):** Measles + Yellow fever doses
- Person Profile:**
 - First name: Anna
 - Last name: Jones
- Enrollment:**
 - Active
 - Date of enrollment: 2021-08-01
 - Date of birth: 2021-08-01
 - Started at: Ngelehun CHC
 - Owned by: Ngelehun CHC
 - Last updated: 4 years ago
 - Enrollment actions: [dropdown]

On the enrollment dashboard, the indicator widget displays indicator text and values output related to the current dashboard. The indicators will be sorted alphabetically.

Empty state

If there aren't any related indicators or indicator output for the current dashboard, the widget shows a short *empty* message. If the current dashboard can't show any indicator output (because it has no related indicators) then the widget is hidden.

Legends

Some indicator values show a colored circle next to the value. The colored circle shows the related legend color for that indicator value. Colored legend circles are only shown for indicator values that have them set up.

Warning widget

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture application interface. The top navigation bar includes the application name and user initials (TW). Below the navigation bar, there are filters for 'Selected program' (Child Programme), 'Selected registering unit' (Ngelehun CHC), 'Selected person' (Anna Jones), and 'Selected enrollment' (2017-11-16 11:38). The main content area is titled 'Enrollment Dashboard' and contains several widgets:

- Stages and Events:** A list of events including 'Birth' (1 event) and 'Baby Postnatal' (2 events, 1 overdue, 1 scheduled).
- Warning:** A yellow warning box with a red border containing the following text:
 - Warning
 - It is suggested that an explanation is provided when the Apgar score is below 4
 - Positive smear result recorded. Review the reported "Site of disease".
- Indicators:** A section showing 'Measles + Yellow fever doses'.
- Person Profile:** A section showing the person's details: First name: Anna, Last name: Jones.
- Enrollment:** A section for enrollment details.

On the enrollment dashboard, the warning widget displays warnings related to the current dashboard. The widget shows warnings that are not associated with any specific data item. If there aren't any warnings to show for the current dashboard then the widget is hidden.

Error Widget

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture application interface. At the top, there is a navigation bar with the title "DHIS 2 Demo - Sierra Leone - Capture" and several utility icons. Below the navigation bar, there is a selection bar with the following information: Selected program: Child Programme, Selected registering unit: Ngelehun CHC, Selected person: Anna Jones, and Selected enrollment: 2017-11-16 11:38. There are also "New" and "Search" dropdown menus and a "Clear selections" link.

The main content area is titled "Enrollment Dashboard". It features a "Stages and Events" section with two items: "Birth" (1 events, last updated 4 days ago) and "Baby Postnatal" (2 events, last updated 4 days ago). To the right of the dashboard, there is an "Error" widget highlighted with a red border. The error message reads: "Error! This event has reported critical values. Review latest data values". Below the error widget, there are sections for "Indicators" (Measles + Yellow fever doses), "Person Profile" (First name: Anna, Last name: Jones), and "Enrollment".

On the enrollment dashboard, the errors widget displays errors related to the current dashboard. The widget shows errors that are not associated with any specific data item. If there aren't any errors to show for the current dashboard then the widget is hidden.

Enrollment event view and edit page

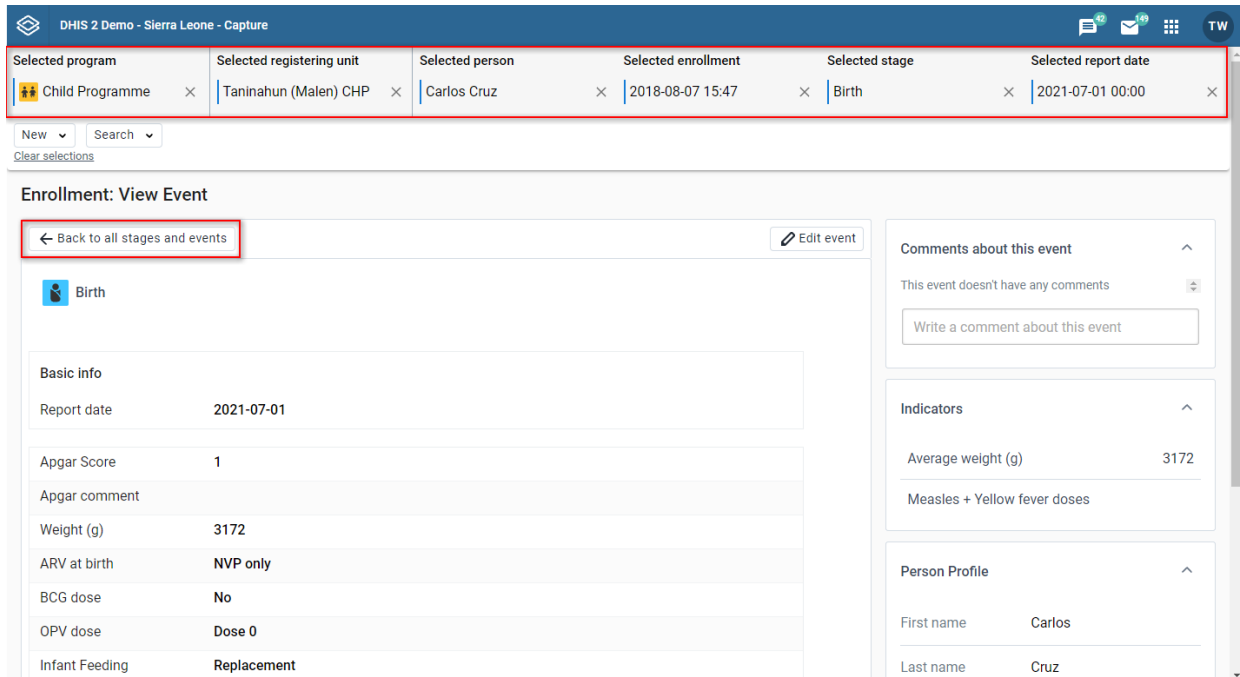
Navigation

You can reach the enrollment event edit page by clicking any event in the Program stage list from the Enrollment Overview page.

Top bar context

At the top of the page you can see various information related to the current context. You can see the program, the organization unit, the tracked entity, the enrollment date, the stage and the enrollment event date.

To go to Enrollment Overview page you can: - click the "Back to all stages and events" button. - deselect the stage from the top bar. - deselect the event from the top bar.

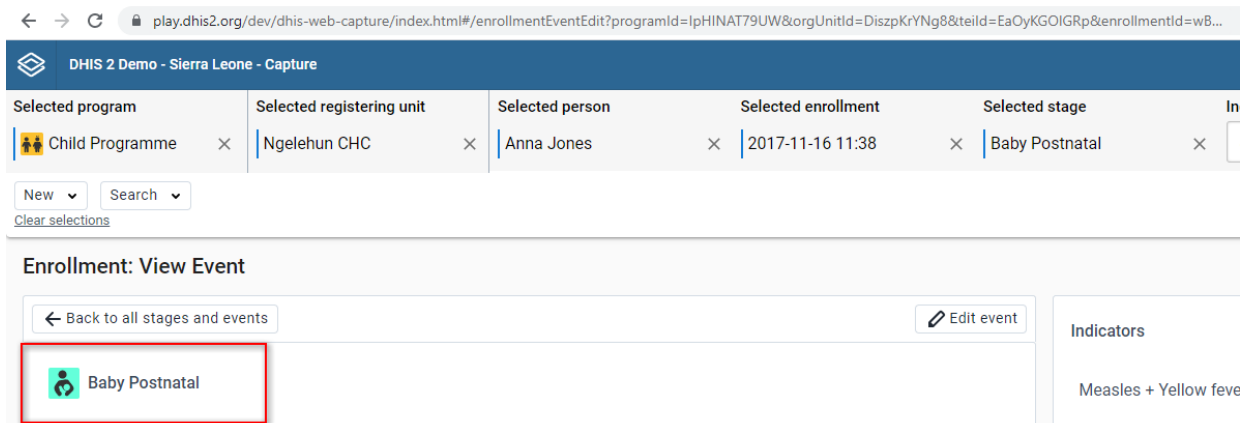


View/Edit event form

This is the form where you can see and edit the enrollment event details.

Form header

In the view/edit event form you can see the stage name and icon.



Top bar context

At the top of the page you can see different informations related with the current context. You can see the program, the organization unit, the tracked entity, the enrollment date, the stage.

To go to Enrollment Overview page you can: - deselect the stage from the top bar. - deselect the event from the top bar.

Scheduled date in edit event form

If an event has the status Scheduled or Overdue, you will be able to see the **Report** and **Schedule** tab.

In the **Report** tab, the scheduled date field will still be shown, but will be greyed out, and there will be an icon next to it with a tooltip saying “Go to **Schedule** tab to reschedule this event”.

In the **Schedule** tab, the similar information about scheduling an event as in New event workspace will be shown. You will be able to edit the schedule date and save the change by clicking **Schedule** button.

If an active event has a scheduled date before becoming active or a completed event has scheduled date, this date should still be shown in the workspace. It'll be locked with an icon next to it and a tooltip saying "Scheduled date cannot be changed for active/completed events".

Scheduled date with Hide due date enabled

If the flag "Hide due date" in the Maintenance configuration is enabled, scheduled date will not be shown in the form.

However, you can still schedule an event, but it automatically chooses the date based on "Scheduled days from start" that has been configured in Maintenance, and this can not be changed. In the **Schedule** tab, there will be "Schedule info" saying "Scheduled automatically for xx/xx/xx", and the user can click **Schedule** button.

Ask user to complete program when stage is complete

If this flag has been enabled for the stage in Stage details in Maintenance, a modal will show up after the user checks the **Complete** event checkbox and clicks save.

The screenshot shows the DHIS 2 interface for a 'Birth' event. A modal dialog titled 'Birth completed' is displayed, asking the user if they want to complete the enrollment and all active events. The dialog lists the following events to be completed: 1 event in Baby Postnatal and 1 event in Birth. The user can choose to 'Yes, complete enrollment and events', 'Complete enrollment only', or 'No, cancel'. The background shows the event form with fields for ARV at birth, BCG dose, OPV dose, Infant Feeding, Birth certificate, Allergies, Image, and Status.

View mode

When the form is in the view mode the title of the page will appear as: Enrollment: View Event. You can see in the page all the information related to the event. Click the Edit event button to switch to the edit mode. This mode is bypassed for events that are scheduled.

The screenshot shows the 'Enrollment: View Event' page. The title 'Enrollment: View Event' is highlighted with a red box. The page contains a 'Back to all stages and events' button and an 'Edit event' button, also highlighted with a red box. The main content area is divided into sections: 'Case investigation & classification', 'Basic info' (Date of investigation: 2020-08-05, Coordinate), and 'Status' (Event completed: No). On the right side, there are sections for 'Comments about this event', 'Indicators', and 'Person Profile' (System Case ID: ABC123456, Local Case ID: PID0001).

Edit mode

When the form is in the edit mode the title of the page will appear as: Enrollment: Edit Event. You can modify the event and click the Save button. Click the Cancel button to switch to the view mode without saving the changes. Scheduled events are the exception and they are opened in edit mode directly, without the user having to click Edit event. Click the Cancel button to go back to the enrollment dashboard page without saving the changes.

Enrollment: Edit Event

← Back to all stages and events Edit event

Case investigation & classification

Basic info

Date of investigation * 2020-08-05

Coordinate Latitude Longitude ×

Status

Complete event Yes

Save Cancel

Comments about this event

This event doesn't have any comments

Write a comment about this event

Indicators

There are no indicators for this event

Person Profile

System Case ID ABC123456

Local Case ID PID0001

Last Name Johnson

In this form you can also delete the event by clicking Delete button, a modal will appear to confirm if you want to delete this event. You will then be navigated back to Enrollment dashboard page.

Enrollment: Edit Event

Infant HIV Test Result

HIV Test Type

Child ARVs

Seprtrin Given

Results given to caretaker

Visit comment (optional)

Status

Complete event Yes

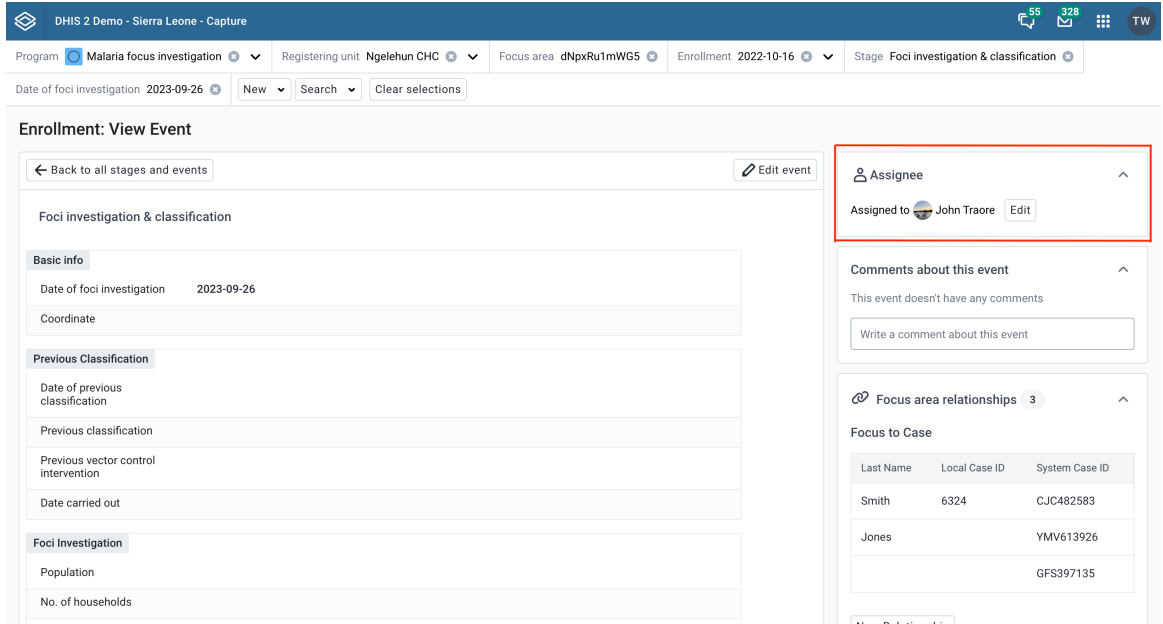
Save Cancel Delete

Widgets in View/Edit event page

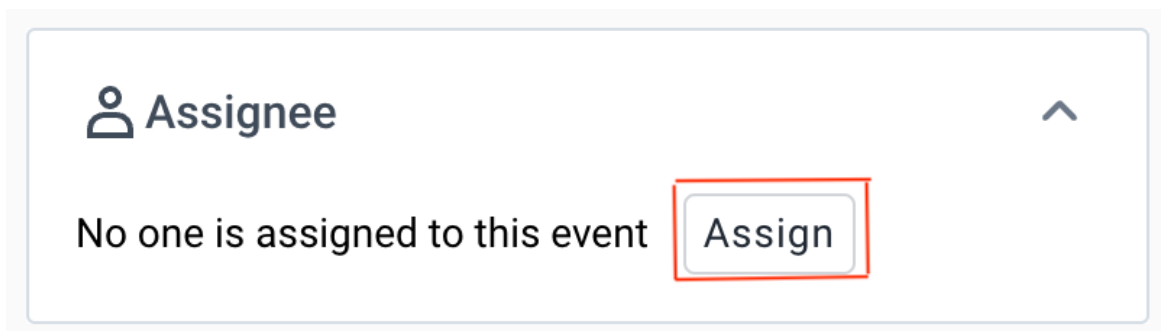
The widgets seen in the right-hand column will display and function the same way as mentioned in the [enrollment dashboard](#).

Widget assignee

1. In View/Edit enrollment event page
2. In the right column you will find the assignee widget.



3. Click the **Edit** button, or the **Assign** button if the event is not currently assigned to anyone.



4. Search for and select the user you would like to reassign the event to. Click the **Save** button.

Enrollment event new page

You can reach this page add event page by clicking in the **New {stage event name}** button in the overview page. In this page you can switch between different tabs: **Report** to add new event, **Schedule** to schedule an event and **Refer** to refer event. If you have unsaved changes in one tab and switch to another tab, there will be a warning displayed.

New event widget form

This is the form where you can modify the event details before saving. In the header you can see the stage name and icon.

New event page without a stage

If you enter the new event page with no stage selected, a list of available stages will be displayed. Select the stage you want to add a new event in by clicking the associated button. To navigate back to the enrollment overview, click the **Cancel without saving**-button

Enrollment: New Event

Choose a stage for a new event

🏠 Lab monitoring

👤 TB visit

🧪 Sputum smear microscopy test

Cancel without saving

Ask user to complete program when stage is complete

If this flag has been enabled for the stage in Stage details in Maintenance, a modal will show up after the user clicks the **Complete** button.

The screenshot shows the DHIS 2 Demo - Sierra Leone - Capture app interface. The main form is for 'Enrollment: Birth' with various fields like 'ARV at birth', 'BCG dose', 'OPV dose', 'Infant Feeding', 'Birth certificate', 'Allergies', and 'Image'. A modal dialog titled 'Birth completed' is overlaid on the form. The modal text reads: 'Would you like to complete the enrollment and all active events as well? The following events will be completed: 1 event in Baby Postnatal'. There are three buttons in the modal: 'Yes, complete enrollment and events' (highlighted in blue), 'Complete enrollment only', and 'No, cancel'. The background form has a 'Complete' button at the bottom left, which is also highlighted in blue.

Ask user to create new event when stage is complete

If this flag has been enabled for the stage in Stage details in Maintenance, a modal will show up after the user clicks the **Complete** button or checks the **Complete** event checkbox and clicks save. The user can choose the button **Yes, create new event** to navigate to the New Event page or **No, cancel** to navigate back to the enrollment dashboard. If there is only one possible stage available, the user will be taken directly to the New event workspace for that stage.

Assigning user to new events

When reporting or scheduling an event, you can assign a user to it. This feature must be enabled per program stage in a tracker program by clicking the "Allow user assignment of events" check box.

You will find the assignee section near the bottom of the data entry page. Search for and select the user you would like to assign the event to. The assignee will be preserved when you save the event.

Enrollment: New Event

Birth

Report | Schedule

Basic info

Report date *

Weight (g)

ARV at birth

OPV dose

Infant Feeding

Assignee

Assigned user

Indicators

Measles + Yellow fever doses 0

Person profile

First name test 1

Last name test 1

Enrollment

Active

Date of enrollment: 2023-10-12

Date of birth: 2023-10-03

Started at

Owned by Ngelehun CHC

Last updated 18 days ago

Enrollment actions

Complete Save without completing Cancel

Saving to Birth for Child Programme in Ngelehun CHC

Enrollment: New Event

Birth

Report | Schedule

Schedule info

Schedule date / Due date

Schedule date info

The scheduled date matches the suggested date, but can be changed if needed. There are 0 scheduled event in Ngelehun CHC on this day.

Event comments

Write a comment about this scheduled event

Assignee

Assignee

Indicators

Measles + Yellow fever doses 0

Person profile

First name test 1

Last name test 1

Enrollment

Active

Date of enrollment: 2023-10-12

Date of birth: 2023-10-03

Started at

Owned by Ngelehun CHC

Last updated 18 days ago

Enrollment actions

Schedule Cancel

Scheduling an event in Birth for Child Programme in Ngelehun CHC

Schedule event widget form

Instead of reporting an event the user can select to schedule an event for later. The form will open with a suggested scheduled date. This date is determined by a set of rules as explained below.

The suggested date for the first event of a program stage in an enrollment is always based on the enrollment date or the incident date (depending on the program configuration). The program stage configuration setting "scheduled days from start" will be added to the base date to compute the suggested date.

1. Default next scheduled date

If a program stage has a default next scheduled date configured, the suggested date is the most recent next scheduled date. Below is an example of how this can work.

1. A data element with value type date needs to be created and assigned to the particular program stage with access to future dates. The name of the data element could for example be: Next suggested follow up date. The program stage is configured to use the data element as default when scheduling a new event by assigning the data element to default next scheduled date.

The screenshot shows the 'Stage Details' configuration form for a program stage named 'Baby Postnatal'. The form includes the following fields and options:

- Name (*):** Baby Postnatal
- Color:** #64FFDA (with an UNSET COLOR button)
- Icon:** (with CHANGE ICON and REMOVE ICON buttons)
- Description:** Baby Postnatal
- Scheduled days from start (*):** 2
- Repeatable:**
- Period type:** (dropdown menu)
- Display generate event box when completed:**
- Standard interval days:** 4
- Default next scheduled date:** Next suggested follow up date (highlighted with a red box)

1. A program rule based on the data entered in the program stage, will determine how many days until the next suggested follow up will be. For example: A program rule with the following condition: `#{penta_dose} == '1'` (The program rule will trigger when the TEI has received Penta Dose 1), Assign value to the data element: next suggested follow up date with expression: `d2:addDays(V{event_date}, '30')` **The number suggest how many days from event date the next scheduled event should be.**
2. Open the Capture app and create a TEI. As long as Penta Dose has value Dose 1, the suggested next scheduled event is 30 days forward from event date. When scheduling a new event, the system will pick up from the data element as long it has value.

DHIS 2 Demo - Sierra Leone - Capture

Program **Child Programme** | Registering unit **Bumban MCHP** | Person **Jean Fowler** | Enrollment **2025-04-11 12:05** | Stage **Baby Postnatal** | Report date -

Create new person | Search | Clear selections

Enrollment: New Event

Baby Postnatal

Report | Schedule

Basic info

Report date *

Infant Weight (g)

Infant Feeding

Measles dose Yes No

Penta dose

Person relationships 0

New Relationship

Indicators

Average weight (g) 3940

Measles + Yellow fever doses 0

Person profile

First name **Jean**

Last name **Fowler**

DHIS 2 Demo - Sierra Leone - Capture

41 203 JT

Penta dose

Results given to caretaker

Septrin Given

Visit comment (optional)

Vit A Yes No

Yellow fever dose Yes No

Section 2

Next suggested follow up date

The screenshot displays the 'Enrollment: New Event' form in the DHIS 2 Demo - Sierra Leone - Capture app. The form is for a 'Baby Postnatal' enrollment at the 'Bumban MCHP' unit, for a person named 'Jean Fowler'. The 'Schedule date / Due date' is set to '2025-04-17'. A red box highlights the 'Schedule info' section, which includes a message: 'The scheduled date matches the suggested date, but can be changed if needed. There are 0 scheduled events in Bumban MCHP on this day.' Below this, there is an 'Event notes' section with a text input field. At the bottom, there are 'Schedule' and 'Cancel' buttons. The right sidebar shows 'Person relationships' (0), 'Indicators' (Average weight (g) 3940, Measles + Yellow fever doses 0), 'Person profile' (First name: Jean, Last name: Fowler), and 'Enrollment' (Active, Date of enrollment: 2025-04-11).

User can also find more information about how many events that scheduled on the same selected date or the interval of selected date and the suggested date from the information box.

Below the schedule date entry, user can choose to add a note to the scheduled event.

After clicking **Schedule** button, user will be navigated back to enrollment overview page.

2. Standard interval days

1. If the program stage has standard interval days configured, the suggested date is calculated by the most recent event date plus the standard interval days value.

The screenshot shows the 'Stage Details' configuration page. Key elements include:

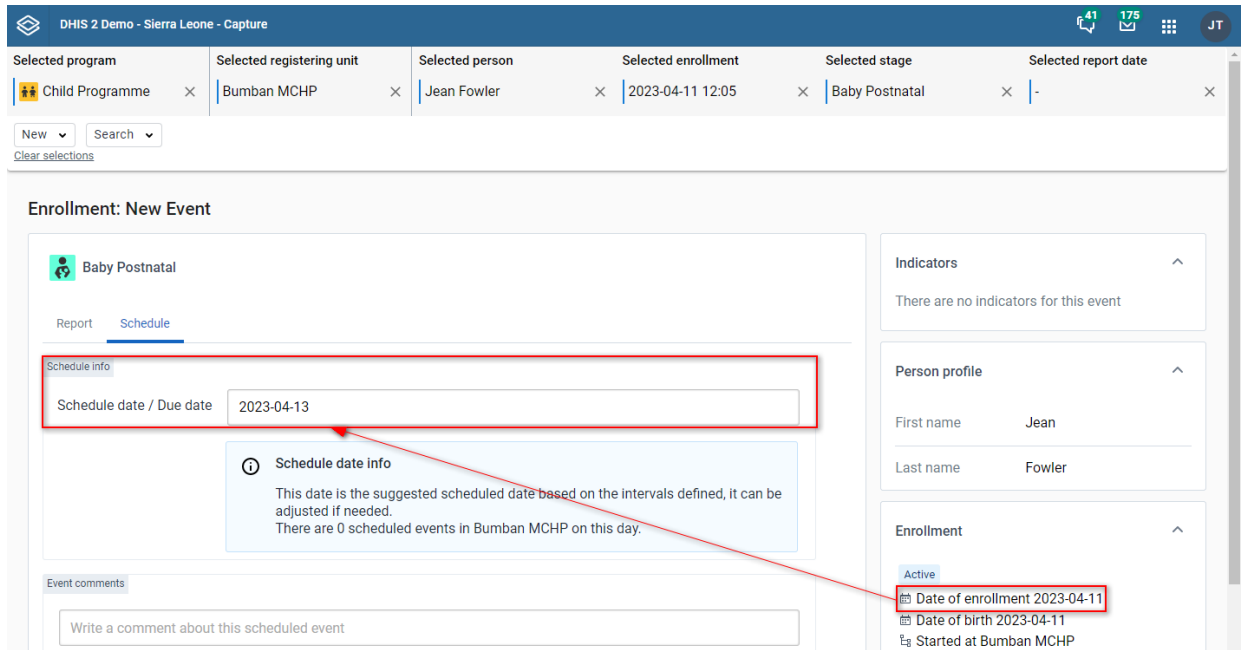
- Name (*):** Baby Postnatal
- Color:** #64FFDA (with UNSET COLOR button)
- Icon:** (with CHANGE ICON and REMOVE ICON buttons)
- Description:** Baby Postnatal
- Scheduled days from start (*):** 2
- Repeatable:**
- Period type:** (dropdown menu)
- Display generate event box when completed:**
- Standard interval days:** 4 (highlighted with a red box)
- Default next scheduled date:** (dropdown menu)
- Next suggested follow up date:** (dropdown menu)

1. If the program stage do not have a default next scheduled date configured, the system will use the standard interval days to calculate the next scheduled event date.

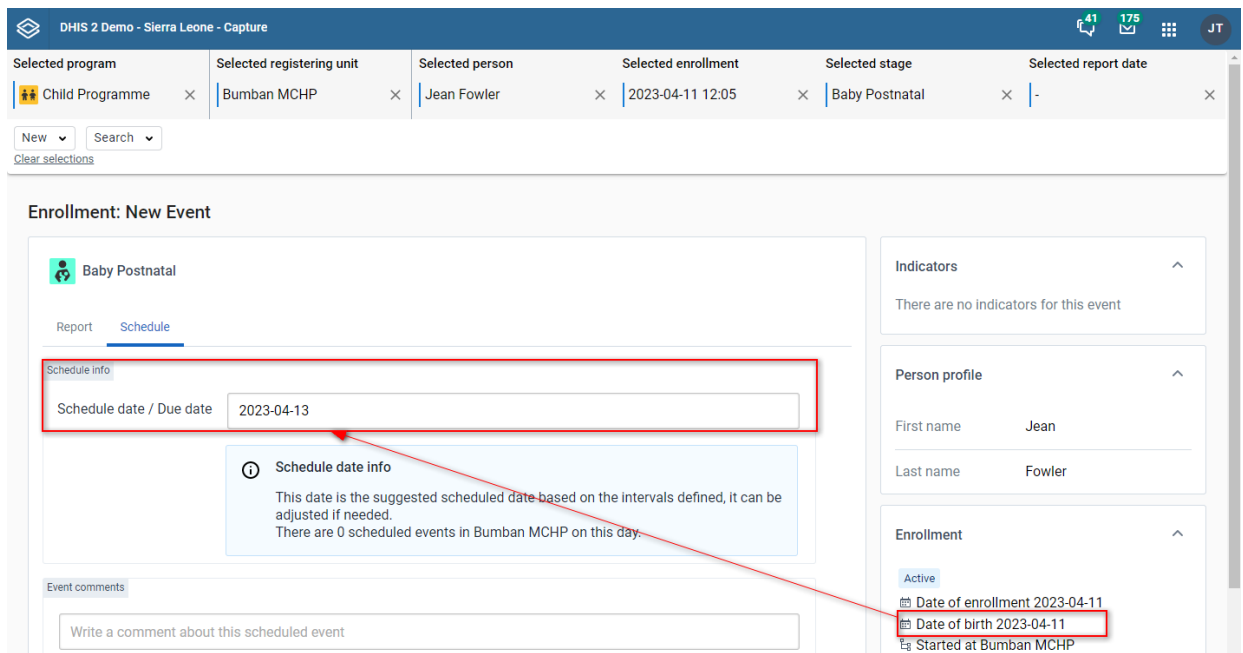
The screenshot shows the 'Enrollment: New Event' form. The 'Selected enrollment' field is highlighted with a red box and contains the value '2023-04-11 12:05'. A red arrow points from this field to the 'Schedule date / Due date' field in the 'Schedule info' section, which contains the value '2023-04-15'. A tooltip below the date field explains that this date is 4 days after the suggested date. The form also shows the 'Person profile' section with the name 'Jean Fowler'.

3. If no value is found on either, the suggested date will be defined by enrollment date and incident date.

1. In case the option **Generate events based on enrollment date** is checked in the Maintenance app, the next suggested event date is calculated by the enrollment date plus the value of scheduled days from start.



1. In case the option **Show incident date** is checked, the next suggested event date is calculated by the incident date plus the value of scheduled days from start.



Program stage event list

You can reach the program stage event list by clicking **Go to full {stage event name}** button in the overview page.

Stage Event list

In this view you can see all events in a stage

Stage Event list header

In the header, you can see the stage name and icon

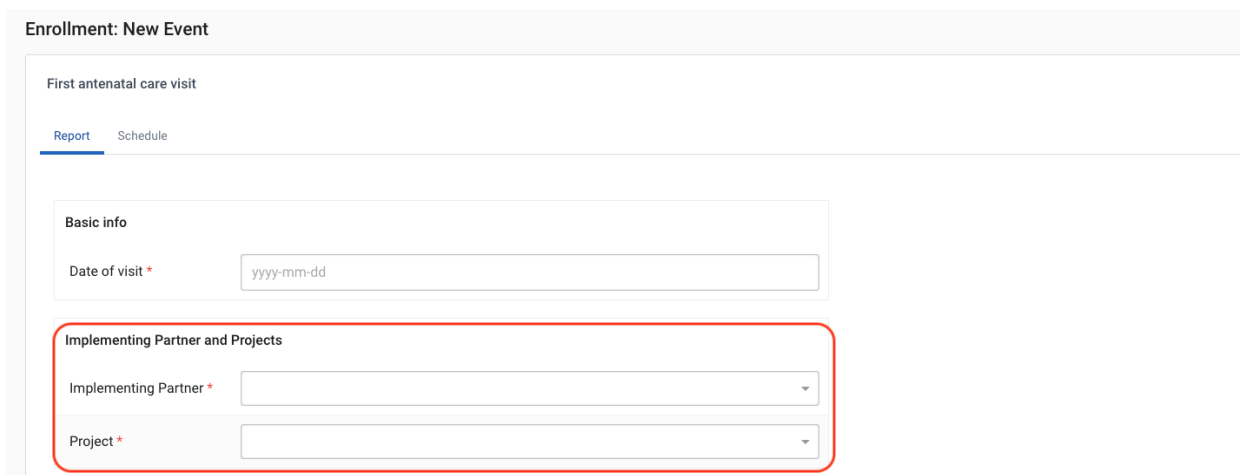


Attribute option combo for Tracker

You can add segregation to your Tracker event data using attribute option combos. To get started, add a category combination to your Tracker program configuration.

The attribute option combo selector will be displayed when you are adding or changing/viewing Tracker events. Additionally, the selector will be displayed when enrolling if events are being auto-generated as part of the enrollment process.

Example from new Tracker event:



Using the Event Capture app

About the Event Capture app

The screenshot displays the DHIS2 Event Capture app interface. On the left, a sidebar shows a tree view of organisation units under Sierra Leone, with 'Nandama MCHP' selected. The main area is titled 'Event capture' and contains a form with 'Registering unit' set to 'Nandama MCHP' and 'Program' set to 'Inpatient morbidity and mortality'. Below the form, a table shows 'Registered events (Total: 94)'. The table has columns for Incident date, Age (Years), Mode of Discharge, Diagnosis (ICD-10), and Comment. The table lists several events, including those with diagnoses like 'F601 Schizoid personality disorder', 'A380 Pharyngeal diphtheria', and 'Q28 Other congenital malformations of circulatory system'. At the bottom, there are pagination controls showing 'No. of pages: 10', 'No. of rows per page: 10', and 'Jump to page: 1'.

In the **Event Capture** app you register events that occurred at a particular time and place. An event can happen at any given point in time. This stands in contrast to routine data, which can be captured for predefined, regular intervals. Events are sometimes called cases or records. In DHIS2, events are linked to a program. The **Event Capture** app lets you select the organisation unit and program and specify a date when an event happened, before entering information for the event.

The **Event Capture** app works online and offline. If the Internet connectivity drops, you can continue to capture events. The events will be stored locally in your web browser (client). When connectivity has returned, the system will ask you to upload the locally stored data. The system then sends the data to the server where the data is stored.

Note

If you close the web browser while in offline mode, it is not possible to reopen a new web browser window and continue the working session. However, the data will still be saved locally and can be uploaded to the server the next time the machine is online and you have logged into the server.

- You only see programs associated with the organisation unit you've selected and programs you've access to view through your user role.
- Both skip-logic and validation error/warning messages are supported during registration.
- When you close an organisation unit, you can't register or edit events to this organisation unit in the **Event Capture** app. You can still view and filter the event list and view the details of an event.
- On-the-fly indicator expression evaluation is supported. If a program has indicators defined for it and the moment all values related to the indicator expression are filled, the system will calculate indicator and display the result.

Event capture

Registering unit	Ngelehun CHC
Program	Inpatient morbidity and mortality
Section	Patient details

Register event Print form

New Event

Incident date*	yyyy-MM-dd
Latitude	
Longitude	

Patient details

Data element	Value
Gender	Select or search from the list
Age (Years)	105
Height in cm	150
Weight in kg	46

Comments

Add your comment here

Save and add new Save and go back Cancel

Indicators	
BMI	20.44

Validation Warnings	
Are you sure you have the correct age?	

- **Sorting:** this can be done by clicking the sorting icon of each column header. A red sorting icon implies the current sorting column. However, the sorting functionality works only within the page displayed. Currently, it is not possible to do sorting from serverside.
- **Filtering:** this is done by clicking the small search icon shown to the right of each column header. Clicking them provides an input field to type a filtering criteria. The system starts applying the filter the moment a user starts to type. During filtering it is possible to define start and end dates for date type data elements and lower and upper limits for number types. Server side filtering is not-support at the moment.

Register an event

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

You'll only see programs associated with the selected organisation unit and programs you've access to through your user role.

4. Click **Register event**.
5. Select a date.
6. Fill in the required information.

If the program's program stage is configured to capture GPS coordinate, you can enter the coordinates in two ways:

- Enter values directly in corresponding fields.
- Choose a location in a map. The map option also displays polygons and points that are defined for organisation units.

7. Click **Save and add new** or **Save and go back**.

Note: Some data elements in an event might be mandatory (marked with a red star next to the data element label). What this means is that all

mandatory data elements must be filled in before the user is allowed to save the event. The exception to this is if the user has the authority called "**Ignore validation of required fields in Tracker and Event Capture**". If the user has this authority, the mandatory data elements will not be required to be filled in before saving and the red star will not be displayed next to the data element label. Note that super user that have the "**ALL**" authority automatically have this authority.

Edit an event

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

4. Click the event you want to modify and select **Edit**.
5. Modify the event details and click **Update**.

Edit events in grid

The **Edit in grid** function allows you to edit a selected event within the table but only those columns (data elements) visible in the grid. If you need more columns, use **Show/hide columns** to specify which columns should be displayed in the list.

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

4. Click the event you want to modify and select **Edit in grid**.
5. Modify the event details.
6. Click on another event to close the edit mode.

Share events in edit mode

You can share an event in edit mode via its web address.

1. Open the **Event Capture** app.
2. Open the event you want to share in edit mode.
3. Copy the URL.

Make sure that the URL contains "event" and "ou" (organisation unit) parameters.

4. Paste the URL in the sharing method of your choice, for example an e-mail or a message within DHIS2.

If you're not logged in to DHIS2 when you click the link, you'll be asked to do so and then taken to the dashboard.

View an event audit history

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

4. Click an event and select **Audit history**.

Delete an event

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

4. Click an event and select **Remove**.
5. Click **Remove** to confirm the deletion.

Modify an event list's layout

You can select which columns to show or hide in an event list. This can be useful for example when you have a long list of data elements assigned to a program stage. Once you've modified the layout, it's saved on your user profile. You can have different layouts for different programs.

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

4. Click the **Show/hide columns** icon.
5. Select the columns you want to display and click **Close**.

Print an event list

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

4. Click **Print list**.

Download an event list

1. Open the **Event Capture** app.
2. Select an organisation unit.
3. Select a program.

All events registered to the selected program show up in a list.

4. Click the **Downlad** icon and select a format.

You can download an event list in XML, JSON or CSV formats.

Using the Tracker Capture app

About the Tracker Capture app

The screenshot shows the DHIS2 Tracker Capture app interface. The top navigation bar includes the DHIS2 logo, the text 'DHIS 2 Demo - Sierra Leone', and a user profile for 'John Traore'. The left sidebar shows a navigation tree for 'Sierra Leone' with various regions listed, including Bo, Badjia, Baoma, Bargbe, Bargbo, Bumpo Ngao, Gbo, Jalama Bongor, Kakua, Komboya, Lugbu, Niawa Lenga, Selenga, Tikonko, Valunia, Wonde, Bombali, Bonthe, Kailahun, Kambia, Kenema, Koinadugu, Kono, Moyamba, and Port Loko. The main content area is titled 'Tracker capture' and features a search bar with 'TB program' selected, a filter dropdown set to 'mark', and a 'Register' button. Below the search bar, there are icons for list, table, and grid views, and a 'Total: 2797' indicator. The main data is presented in a table with the following columns: Registering unit, First name, Last name, and Gender.

Registering unit	First name	Last name	Gender
Weima CHC	Ermias	Yusef	Male
Kamaranka CHC	Haben	Saare	Female
Moyowa MCHP	Helen	Abriha	Female
Deima MCHP	Alem	Kinfe	Male
Dankawalie MCHP	Sebhat	Awet	Male
Mamboma (Peje Bongre) CHP	Michael	Nasih	Male
Kamagbewu MCHP	Hyiab	Futsum	Female
Needy CHC	Elisa	Gebre	Female
Mogbuama MCHP	Furuta	Kifle	Female
Thompson Bay MCHP	Ghenet	Alem	Female
Kiampkakolo MCHP	Huriyyah	Alem	Female
Bapuya MCHP	Sayid	Girma	Male

The **Tracker Capture** app is an advanced version of the **Event Capture** app.

- **Event Capture:** handles single events *without* registration
- **Tracker Capture:** handles multiple events (including single event) *with* registration.
- You capture event data for a registered tracked entity instance (TEI).
- You only see programs associated with the organisation unit you've selected and programs you've access to view through your user role.
- The options you see in the search and register functions depend on the program you've selected. The program attributes control these options. The attributes also decide the columns names in the TEI list.

If you don't select a program, the system picks default attributes.

- Both skip-logic and validation error/warning messages are supported during registration.
- When you close an organisation unit, you can't register or edit events to this organisation unit in the **Tracker Capture** app. You can still search for TEIs and filter the search results. You can also view the dashboard of a particular TEI.

About tracked entity instance (TEI) dashboards

The screenshot displays the DHIS2 interface for a TEI dashboard. The top navigation bar includes 'dhis2', 'DHIS 2 Demo - Sierra Leone', and user options. The main content area is organized into several panels:

- Enrollment:** Shows 'Enrolling organit' as Ngelehun CHC, 'Date of enrollment' as 2014-08-31, and 'LMP Date' as 2014-08-31. It includes 'Complete', 'Terminate', and a warning icon.
- Indicators:** A yellow box indicates 'No indicator to show'.
- Data Entry:** A table with columns for 'ANC 1st visit', 'ANC Visit (2-4+)', 'Delivery', and 'PNC Visit'. Each cell contains a date and a 'Click for more' link.
- Report:** Displays 'MNCH / PNC (Adult Woman)'.
- Notes:** A text area with the placeholder 'Add new note here'.
- Profile | Edit:** A form with fields for 'First name*' (Sarah), 'Last name*' (Thompson), 'Email' (sarah@gmail.com), 'Date of birth' (2001-01-01), 'Address' (Main street 1), 'Weight in kg' (56), 'Height in cm' (167), and 'Service provider' (dU2P0v8JDco).
- Active programs:** A yellow box indicates 'No active program other than selected'.
- Relationships | Add child | Add:** A table with columns for 'Relationship', 'National identifier', 'First name', and 'Last name'. It lists a 'Child' with first name 'Alan' and last name 'Thompson'.

You manage a TEI from the TEI's dashboard in the **Tracker Capture** app.

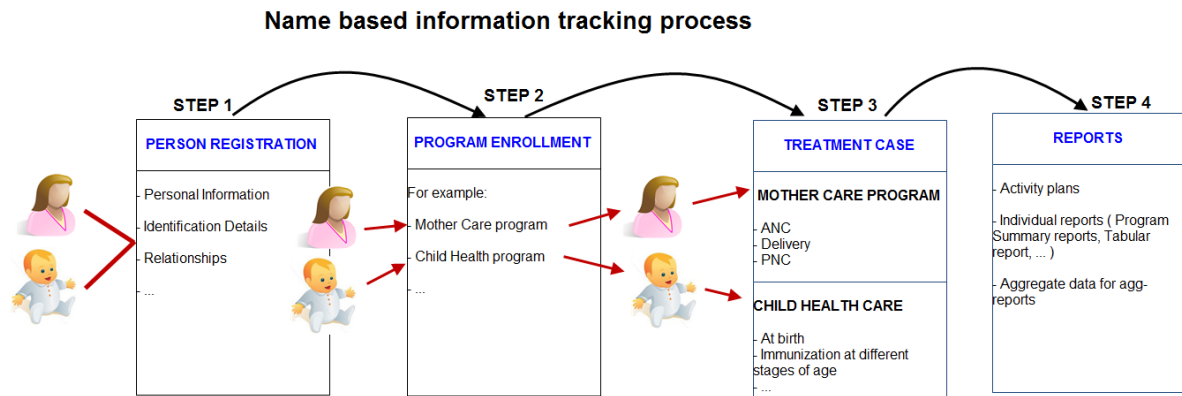
- The dashboard consist of widgets. Drag and drop the widgets to place them in the order and in the position you want.
- Click the pin icon to stick the right column of widgets to a fix position. This is useful especially during data entry.

If you have many data elements or big form to fill in, stick the right widget column. Then all the widgets you've placed in the right column remain visible while you scroll in the data entry part.

- Any indicator defined for the program you've selected will have its value calculated and displayed in the **Indicators** widget.
- Navigation:
 - **Back:** takes you back to the search and registration page
 - Previous and next buttons: takes you to the previous or next TEI dashboard in the TEI search results list
 - **Other programs** field: if the TEI is enrolled in other programs, they're listed here. Click a program to change the program for which you enter data for the selected TEI. When you change programs, the content in the widgets change too.

Workflow

Working process of Mother and child health program



1. Create new or find existing TEI.

You can search on defined attributes, for example name or address.

2. Enroll TEI in a program.

3. Based on the services of the program by the time, the app creates an activity plan for the TEI.

4. The TEI is provided with various services depending on the program. All services are recorded.

5. Use information about the individual cases to create reports.

Linking to the Tracker Capture App

Link to a specific program on the "home screen"

You can share a program selection on the "home screen."

1. Open the **Tracker Capture** app.

2. Select the program you want to link to.

3. Copy the URL.

- Make sure that the URL contains the "program" parameter.

4. Paste the URL in the sharing method of your choice, for example an e-mail or a message within DHIS2.

Note: If the program does not exist in the selected organisation unit (that is stored in the local cache) the system will instead select the first available program for that organisation unit. If the local cache is empty/clean and the root organisation unit of the current user does not have the specified program, the system will also here select the first available program for the root organisation unit.

Linking to TEI dashboard

You can share a TEI dashboard via its web address.

1. Open the **Tracker Capture** app.

2. Open the dashboard you want to share.

3. Copy the URL.

Make sure that the URL contains "tei", "program" and "ou" (organisation unit) parameters.

4. Paste the URL in the sharing method of your choice, for example an e-mail or a message within DHIS2.

If you're not logged in to DHIS2 when you click the link, you'll be asked to do so and then taken to the dashboard.

Create a TEI and enroll it in a program

You can create a TEI and enroll that TEI to a program in one operation:

1. Open the **Tracker Capture** app.
2. In the organisation unit tree in the left hand pane, select an organisation unit.
3. Select a program.
4. Click **Register**.
5. Fill in the required information.

Both tracked entity type and program can be configured to use a feature type. This makes it possible to capture geometry for either the TEI or the enrollment. Supported feature type is Point and Polygon. Please see **How to use geometry**.

6. If the selected program is configured to display first stage during registration, all mandatory fields in the stage will have to be filled in. At the end of the stage you will also be asked if you want to complete the stage that you have entered data for. If you select **Yes**, the stage will have the status completed once saved. If you select **No**, the stage will have the status active.
7. If searching for program is configured, a background search will be performed on searchable fields to help you prevent registering duplicates. If there is any matching TEIs, a blue box will be displayed on the right side of the form with the possibility to view these matching TEIs.

WHO RMNCH Tracker
✕
▼

Lists
Search
Register

Enrollment

Enrolling organisation unit

Ngelehun CHC

Date of first visit

2018-03-05

Profile

Unique ID *

First name *

Linda

Last name *

Address

Postal code

City

Mobile number

Email address

Birth date *

yyyy-MM-dd

Civil status

Select or search from the list ▼

Continue

Print form

Cancel

Possible duplicates found. ✕

View 48 candidates

If there is any matching TEIs, click **Continue** to review possible duplicates before registering a new one.

If there is no matching TEIs, click **Save and continue** or **Save and add new**

- **Save and continue:** completes the registration and opens the registered TEI's dashboard
- **Save and add new:** completes the registration but stays on the same page. Use this option when you want to register and enroll one TEI after another without enter data.

Note: All mandatory attributes have to be filled in to be able to save. Mandatory attributes are marked with a red star next to the attribute label. If the user has the authority called "**Ignore validation of required fields in Tracker and Event Capture**" you will not be required to fill in the mandatory attributes and will not see the red star next to the attribute label. Note that super user that have the "**ALL**" authority automatically have this authority.

Open an existing TEI dashboard

There are multiple ways to find a TEI: Using the "Lists" which is predefined lists in the current selection, or "Search" for global lookup.

Lists

Lists is used to find and display TEIs in the selected organisation unit and program.

1. Open Tracked Capture app
2. In the organisation unit tree in the left hand pane, select an organisation unit
3. Select a program
4. Click the "Lists" button if not already selected

If not configured, a set of predefined lists will be available:

1. Any TEI with any enrollment status
2. TEIs with an active enrollment of the current program
3. TEIs with a completed enrollment of the current program
4. TEIs with a cancelled enrollment of the current program

First name	Last name
Filona	Ryder
Gertrude	Fjordsen
Frank	Fjordsen
Maria	Wright
Joe	Riley
Anthony	Banks
Alan	West
Heather	Greene
Andrea	Burton
Donald	Johnson
Frances	Rodriguez

You can select which columns to show or hide in the lists for each program. This will be saved in your user settings.

1. Click the **grid** icon button
2. Check the columns you want to include
3. Click **Save**

There is also an option to create a custom working list with own filters. This can be used to create custom lists on the fly.

The screenshot shows the DHIS 2 Demo - Sierra Leone interface. On the left is a navigation menu with 'Registration and Data Entry' and 'Reports'. Below it is a tree view of the organization structure, including 'Sierra Leone', 'Bo', 'Badjia', 'Ngelehun CHC', 'Njandama MCHP', and various other locations. The main area displays a 'Child Programme' with a 'Lists' button and 'Search' and 'Register' options. A 'Custom working list' is shown with a total of 36 records. The list includes names like Filona, Gertrude, Frank, Maria, Joe, Anthony, Alan, Heather, Andrea, Donald, Frances, Julia, Elizabeth, Donald, Wayne, and Johnny. A modal window is open over the list, showing filter options: 'Organisation unit scope' (Selected, Immediate children, All children), 'Enrollment status' (All, Completed, Active, Cancelled), 'Date of enrollment' (2018-02-01, 2018-03-05), 'Date of birth' (Start date, End date), 'First name', 'Last name', and 'Gender' ([Please select]).

Lists can also be downloaded or printed.



Custom predefined lists

If the program has any custom tracked entity filters associated with it, these will take the place of the four predefined lists mentioned above. The predefined lists will when well configured be an effective way to find or work with the data relevant for the user in that program.

Working lists can be defined with a wide variety of options, here are some examples:

- Display all TEIs with at least one event in a given program stage that has a due date on the current date.
- Display all TEIs that has at least one event that is assigned to the logged in user.
- Display all TEIs that is active, but is not assigned to any user.

The screenshot shows the DHIS 2 Tracker Capture app interface. At the top, there is a header with the DHIS 2 logo, 'DHIS 2 Demo - Sierra Leone', a search bar, and a user profile icon labeled 'TU'. Below the header, there is a navigation menu with 'Registration and Data Entry' and 'Reports'. The main content area displays a search filter 'Malaria focus investigation' and a 'Lists' button. Below this, there are tabs for 'Events assigned to me', 'Cases not yet assigned', 'Ongoing foci responses', and 'Custom working list'. A table shows the search results with columns for 'System Focus ID', 'Local Focus ID', and 'Focus Name'. The table contains one row with values: IRW243266, 573854, and Focus Village D. Below the table, there are pagination controls: 'Number of pages: 1', 'Number of rows per page: 50', and 'Jump to page: 1'. The table is currently displaying page 1 of 1.

System Focus ID	Local Focus ID	Focus Name
IRW243266	573854	Focus Village D

Predefined working lists in tracker capture

See the API documentation for a full list of functionality supported for these predefined tracked entity instance filters.

Search

Search is used to search for TEIs in the organisation units the user has search access to. This can be used if you want to find a TEI, but you don't know which organisation unit or program the TEI was enrolled in. There are two ways of doing this: With and without a program context. Searchable fields needs to be configured. For configuring searching with program context, this is done individually for each program in the program maintenance app. For configuring searching without a program context, this is done individually for each tracked entity type in the tracked entity type maintenance app.

Searching without a program context:

1. Open **Tracker Capture app**
2. Click the **Search** button
3. Searchable fields will be displayed in groups. Unique attributes is only individually searchable. Non-unique attributes can be combined.
4. Fill in search criteria and click the **search** icon button.

Searching with a program context:

1. Open **Tracker Capture app**
2. Select an organisation unit which has the program you wish to search in
3. Select the program
4. Click the **Search** button
5. Searchable fields will be displayed in groups. Unique attributes is only individually searchable. Non-unique attributes can be combined.
6. Fill in search criteria and click the **search** icon button

✕ ▼ Lists Search Register

Search for person

Provider ID

First name

Last name

More options ▼

Fill in at least 1 attribute to search

After the search has been done, you will be presented with the search result. What's displayed depends on the outcome of the search.

For unique attribute search:

- If no matching TEI found, you will get the possibility to open the registration form.
- If the TEI was found in the selected organisation unit, the TEI dashboard will automatically open.
- If the TEI was found in outside the selected organisation unit, you will get the possibility to open the TEI.

For non-unique attributes search:

- If no matching TEI's found, you will get the possibility to open the registration form.
- If matching TEI's found, you can either click on any TEI in the result list, or open the registration form.
- If a too large number of matches was found, you will be prompted to refine your search criteria

Person search results

Registering unit	Registration date	Inactive	First name	Last name	
Vaama MCHP	2015-08-07		Mark	Robinson	Possible duplicate Unflag
Sandialu MCHP	2015-08-06		Mark	Robinson	Flag possible duplicate

Number of pages: 1 Number of rows per page: Jump to page:

« « » »

If none of the matches above is the person you are searching for, choose 'Go to registration'.

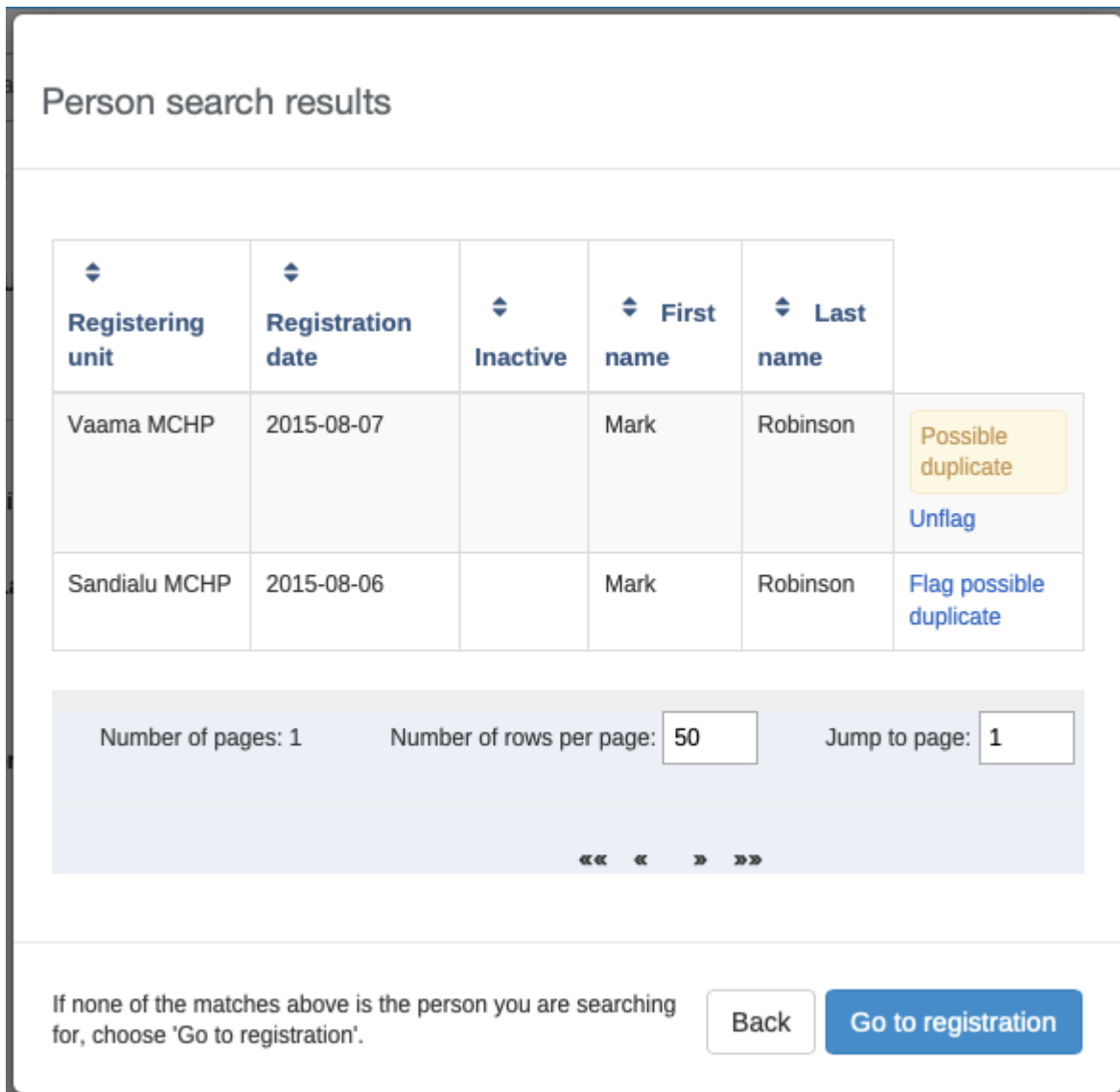
The search results have functionality for flagging tracked entity instances as possible duplicates, see next chapter.

When choosing to open the registration form, the search values will automatically be filled into the registration form.

Flagging tracked entity instance as potential duplicate

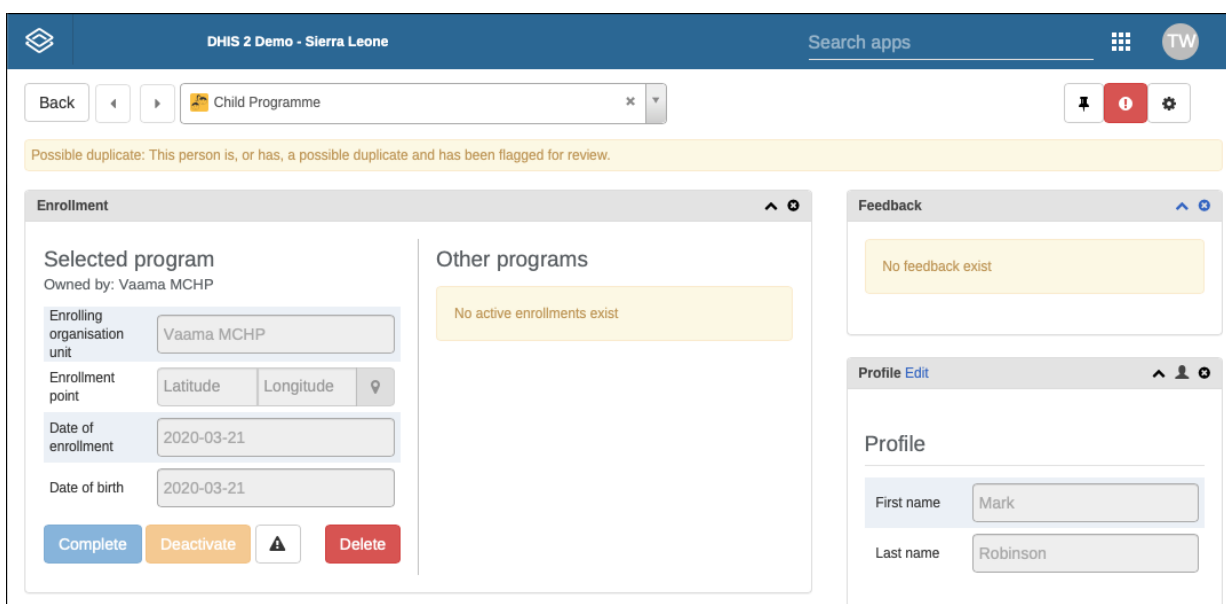
When searching for tracked entity instances in the tracker capture app, the user will sometimes suspect that one or more of the search hits are duplicates of other tracked entity instances. The user has the option of clicking on the **flag possible duplicate** link in the rightmost column of the search result grid.

Tracked entity instances flagged in this way will be marked as "possible duplicate" in the DHIS2 database. The flag indicates that the tracked entity instance is/has a duplicate. The presence of such a flag is visible to the user in two places. One is the result list itself (in this example Mark Robinson is already flagged as a potential duplicate):



Tracker capture search results

The other place is within the tracked entity instance dashboard:



Tracked entity instance flagged as duplicate

In addition to informing users about the tracked entity instance potentially being a duplicate, the flag will be used by the underlying system for finding and merging duplicates in coming versions of DHIS2.

Breaking the glass

If the program is configured with access level **protected**, and the user searches and finds tracked entity instances that is owned by organisation unit that the user does not have data capture authority for, the user is presented with the option of breaking the glass. The user will give a reason for breaking the glass, then gain temporary ownership of the tracked entity instance.

Enroll an existing TEI in a program

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. Select a program.
4. In the **Enrollment** widget, click **Add new**.
5. Fill in the required information and click **Enroll**.

Enter event data for a TEI**Widgets for data entry**

In a TEI dashboard, you enter event data in the **Timeline Data entry** or **Tabular data entry** widgets.

Data entry widgets in the Tracker Capture app

Widget name	Description
Timeline Data entry	<p>For data entry using either default or custom forms.</p> <p>Depending on program definition, in particular program stages, events will be displayed in a timely fashion. Clicking on any of them displays the corresponding data entry. If a stage needs new event, a plus icon is displayed for new event creation. To proceed with data entry, it is mandatory to have event date. Once an event date is specified it is not possible to change due date. The assumption is that by specifying event date, the event has already taken place. If the event hasn't occurred yet, it is possible to change due date - this is effectively doing nothing but rescheduling. The buttons at the bottom help to change the status of a selected event.</p> <p>Another key feature from this widget is addition of multiple notes for an event. Normally data recording is through data elements, however there are cases where it is necessary to record additional information or comments. This is where the notes section comes handy. However it is not possible to delete a note. The idea is notes are more like log books. Both skip-logic and validation error/warning messages are supported during data entry.</p>

Widget name	Description
	Also included in the Timeline Data entry is the option to compare your data entry to previous entries. This can be enabled by clicking the "Switch to compare form" button (Two sheets of paper) in the top right corner of the Timeline Data entry widget.
Tabular data entry	For tabular-style data entry. The widget displays the list of program stages as left-hand side labels. Events will be listed in table for repeatable program stage, and allows for in-line edits of event data values.

Creating an event

You can create an event for a TEI by:

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. In the **Timeline Data entry** or **Tabular data entry** widget, click the **+**-button.
4. Select a **Program stage** and set a **Report date**.

Program stages can be configured to use a feature type. This makes it possible to capture geometry for an event. Supported feature type is Point and Polygon. Please see **How to use geometry**.

5. Click **Save**.

Schedule an event

You can schedule an event for a future date by:

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. In the **Timeline Data entry** or **Tabular data entry** widget, click the **Calendar** icon.
4. Select a **Program stage** and set a **Schedule date**.
5. Click **Save**.

Refer an event

Sometimes it might be necessary to refer a patient to a different **Organisation unit**. To refer a TEI:

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. In the **Timeline Data entry** or **Tabular data entry** widget, click the **Arrow** icon.
4. Select a **Program stage**, **Organisation unit** and set a ****Report date****.

- Click either **One-time referral** which will only refer TEI for one single event or **Move permanently** which will move TEI ownership to the selected **Organisation Unit**. Further access to the TEI will be based on the ownership organisation unit.

Mandatory data elements in events

Some data elements in an event might be mandatory (marked with a red star next to the data element label). What this means is that all mandatory data elements must be filled in before the user is allowed to complete the event. The exception to this is if the user has the authority called "**Ignore validation of required fields in Tracker and Event Capture**". If the user has this authority, the mandatory data elements will not be required to be filled in before saving and the red star will not be displayed next to the data element label. Note that super user that have the "**ALL**" authority automatically have this authority.

How to use geometry

Tracked entity type, program and program stage can be configured to use a feature type. This makes it possible to capture geometry for a TEI, program or event. Supported feature types are Point and Polygon.

Capture coordinate

Option 1: Fill in the latitude and longitude into the field.

Option 2: 1. Click on the **map icon** 2. Find the location you want by either searching or locating it on the map 3. Right-click on the location you want, and choose **Set coordinate** 4. Click **Capture** at the bottom

Capture Polygon

- Click on the **map icon**
- Find the location you want by either searching or locating it on the map
- At the top left of the map, click the **polygon icon**
- Draw a polygon on the map. To finish, connect the last point with the first point
- Click **Capture** at the bottom



Polygons can also be deleted 1. Click the **map icon** 2. Click the **trash can icon** at the left side of the map, and select **Clear all**

How to assign a user to an event

In the Maintenance App a program stage can be configured to allow user assignment. If user assignment is enabled, you will be able to assign a user to an event.

1. Click the **Assigned user** field.
2. Scroll or search for a user.
3. Click the user.

Manage a TEI's enrollments

The Enrollment widget gives access to information and functionality for the enrollment in the selected program.

Enrollments widget

TEI ownership

The current ownership of all enrollments in the selected program is displayed in the "Owned by" part of the enrollment widget. The ownership will always start out as the organisation unit that first enrolled the TEI into the given program.

Ownership can be different for a TEIS different programs, for example one clinic can follow up a patient in HIV, while another clinic follows up the same patient in MCH.

To update the ownership for a TEI/program combination, the user has to utilize the referral functionality and select the "Move permanently" option while referring.

A user that has capture access to the organisation unit that is the current owner of the TEI/Program will have write access to all enrollments for that TEI/Program combination. A user that has search access to the organisation unit that is the current owner will have access to search and find the TEI/Program combination.

Deactivate a TEI's enrollment

If you deactivate a TEI dashboard, the TEI becomes 'read-only'. You can't enter data, enroll the TEI or edit the TEI's profile.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.

3. In the **Enrollment** widget, click **Deactivate**.

4. Click **Yes** to confirm.

Activate a TEI's enrollment

1. Open the **Tracker Capture** app.

2. Open an existing TEI dashboard.

3. In the **Enrollment** widget, click **Activate**.

4. Click **Yes** to confirm.

Mark TEI's enrollment as complete

1. Open the **Tracker Capture** app.

2. Open an existing TEI dashboard.

3. In the **Enrollment** widget, click **Complete**.

4. Click **Yes** to confirm.

Reopen completed enrollment

1. Open the **Tracker Capture** app.

2. Open an existing TEI dashboard.

3. In the **Enrollment** widget, click **Reopen**.

4. Click **Yes** to confirm.

Display TEI's enrollment history

1. Open the **Tracker Capture** app.

2. Open an existing TEI dashboard.

3. In the **Profile** widget, click the **Audit history** icon.

Create a TEI enrollment note

An enrollment note is useful to record information about for example why an enrollment was cancelled.

1. Open the **Tracker Capture** app.

2. Open an existing TEI dashboard.

3. In the **Notes** widget, type your note and click **Add**.

Send a message to a TEI

1. Open the **Tracker Capture** app.

2. Open an existing TEI dashboard.

3. In the **Messaging** widget and select **SMS** or **E-mail**.

4. Enter the required contact information.

If the TEI's profile contains an e-mail address or a phone number, these fields are filled in automatically.

5. Type a message.
6. Click **Send**.

Mark a TEI for follow-up

You can use mark a TEI's enrollment for follow-up and then use this status as a filter when you create **Upcoming events** and **Overdue events** reports. This can be useful for example to monitor high-risk cases during a pregnancy program.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. In the **Enrollment** widget, click the **Mark for follow-up** icon.

Edit a TEI's profile

You edit a TEI's profile or tracked entity attributes in the **Profile** widget.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. In the **Profile** widget, click **Edit**.
4. Modify the profile and click **Save**.

Add a relationship to a TEI

You can create a relationship from one TEI to another, for example linking a mother and a child together or a husband and a wife. Depending on how the relationship type is configured, the relative can inherit attributes.

Assume there are two programs: Antenatal care for the mother and Immunization for the child. If first name, last name and address attributes are required for both programs, it is possible to configure last name and address attributes as inheritable. Then during child registration, there is no need to enter these inheritable attributes. You can add them automatically based on the mother's value. If you want to have a different value for the child, you can override the automatically generated value.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. In the **Relationships** widget, and click **Add**.
4. Select a relationship type.
5. Search for the relative and select it. The search follows the same pattern as when searching for tracked entity instances from the tracker front page. Searches are by default covering the users search scope.
6. Select the tracked entity instance that matches the search criteria in the popup.
7. Click **Save**.

Note: If the relationship is a bi-directional relationship, the relationship will be displayed in the TEI that the relationship was created in and in the TEI that the relationship was linked to. Also, if the relationship is bi-directional, each end of the relationship will have a unique name that will be displayed in the relationship widget under the "Relationship" column.

Share a TEI dashboard

You can share a TEI dashboard via its web address.

1. Open the **Tracker Capture** app.
2. Open the dashboard you want to share.
3. Copy the URL.

Make sure that the URL contains "tei", "program" and "ou" (organisation unit) parameters.

4. Paste the URL in the sharing method of your choice, for example an e-mail or a message within DHIS2.


If you're not logged in to DHIS2 when you click the link, you'll be asked to do so and then taken to the dashboard.

Deactivate a TEI

If you deactivate a TEI, the TEI becomes 'read-only'. Data associated with the TEI is not deleted.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
- 3.



In the top right corner, click the  button > **Deactivate**.

4. Click **Yes** to confirm.

Activate a TEI

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
- 3.



In the upper top corner, click the  button > **Activate**.

4. Click **Yes** to confirm.

Delete a TEI

Warning

When you delete a TEI, you delete all data associated with the TEI.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
- 3.



In the top right corner, click the  button > **Delete**.

4. Click **Yes** to confirm.

Configure the TEI dashboard

Show or hide widgets

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. Click the **Settings** icon, and select **Show/hide widgets**.
4. Select the widgets you want to show or hide.
5. Click **Close**.

Save the dashboard's layout as default

You can save the dashboard's layout as default for a program.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. Click the **Settings** icon, and select **Save dashboard layout as default**.

Lock dashboard's layout

If you are the **administrator** you have the option of locking the layout of the dashboard for all users.

1. Open the **Tracker Capture** app.
2. Open an existing TEI dashboard.
3. Organize the widgets to the desired layout and save it as default (see section above).
4. Click the **Settings** icon, and select **Lock layout for all users**.

Users will still be able to reorganize the widgets temporarily, but the layout will be reset to the admin's saved layout after page refresh. The remove widget buttons will be hidden when the dashboard layout is locked.

Top bar

The top bar can be a helpful tool to see important data in a quick and easy way. To start using the top bar:

1. Open the **Tracker Capture** app.

2. Open an existing TEI dashboard.
3. Click the **Settings** icon, and select **Top bar settings**.
4. Click **Activate top bar** and click the data you would like to display in the top bar.

Change table display mode for Timeline Data Entry widget

The **Timeline Data Entry** widget has 5 different table display modes that can be selected. The different options are: - **Default form** - Shows all data elements vertically.

- **Compare form previous** - Shows the previous (repeatable) program stage next to the current selected program stage.
- **Compare form all** - Shows all previous (repeatable) program stages next to the current selected program stage.
- **Grid form** - Shows the data elements horizontally.
- **POP-over form** - The same as **Grid form**, but when clicked the data elements are displayed in a pop-up.

To change the current display mode, click the second icon in the widgets top bar (see image below):

Once an option is selected the selection is stored for that specific program stage. This means that you can have different table modes for the different program stages in a program.

Notes: 1. The **Compare form** options will function best if you have multiple repeatable events (of the same program stage) present. 2. The **Grid form** and **POP-over form** options are not selectable if the program stage has

more than 10 data elements. 3. The icon in the widgets bar will change depending on the option you have selected.

Create reports

1. Open the **Tracker Capture** app.
2. Click **Reports**.
3. Select a report type.

Report types in the Tracker Capture app

Report type	Description
Program summary	A summary report for a particular program, organisation unit and time frame. The report consist of a list of TEIs and their records organised based on program stages.
Program statistics	A statistics report for a particular program. The report provides for example an overview of drop-outs or completion rates in a given time frame at a particular organisation unit.
Upcoming events	A tabular report showing tracked entity instances and their upcoming events for a selected program and time. You can sort the columns and search the values. Show/hide operations are possible on the columns. You can also export the table to Microsoft Excel.
Overdue events	A list of events for a selected program. The report displays a list of TEIs and their events that are not completed on time. You can sort the columns and search the values You can also export the table to Microsoft Excel.

Registration and Data Entry

Reports

- Sierra Leone
 - Bo
 - Badjia
 - Ngelehun CHC**
 - Njandama MCHP
 - Baoma
 - Bargbe
 - Bargbo
 - Bumpe Ngao
 - Gbo
 - Jaiama Bongor
 - Kakua
 - Komboya
 - Lugbu
 - Niawia Lenga
 - Selenga
 - Tikonko
 - Valunia
 - Wonde
 - Bombali
 - Bonthe
 - Kailahun
 - Kambia
 - Kenema
 - Koinadugu
 - Kono
 - Moyamba
 - Port Loko
 - Pujehun
 - Tonkolili
 - Western Area

Program Summary Report

Organisation unit:

Organisation unit scope:

 Selected

 Immediate children

 All children

Program:

2013-04-10

Person	Event date	Organisation unit	mnch ANC Visit	mnch Weight (g)	mnch Blood Pressure	mnch HB	mnch Tetatus
First name: Evelyn Last name: Jackson	2015-01-01	Ngelehun CHC					
	2015-03-10	Ngelehun CHC	4				
	2015-04-08	Ngelehun CHC					
	2015-04-15	Ngelehun CHC	3				
First name: Woman2 Last name: Woman2	2015-03-25	Ngelehun CHC		10	40		
First name: Baby name Last name: Father name	2015-03-17	Ngelehun CHC					
	2015-04-16	Ngelehun CHC					

The summary report displays a list of TEIs and their records for "MNCH/PNC (Adult Woman)" program. The records are organized in the form of tabs where each tab is a program stage. The columns in the table are data elements which are configured to be displayed in reports under program stage definition.

Data approval overview

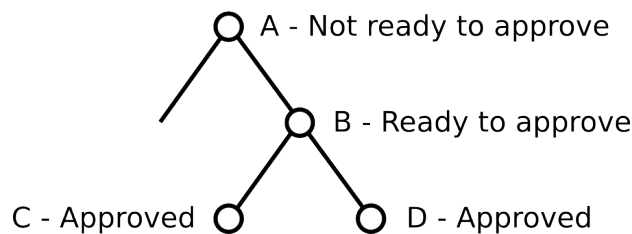
DHIS2 has an optional feature that allows authorized users to approve data that has been entered. It allows data to be reviewed and approved at selected levels in the organisation unit hierarchy, so the approval follows the structure of the hierarchy from lower levels to higher levels.

Data is approved for a combination of (a) period, (b) organisation unit and (c) workflow. Data may be approved for the organisation unit for which it is entered, as well as for higher-level organisation units to which the data is aggregated. As part of system settings, you can choose the organisation unit level(s) at which data is approved. It can be approved at higher levels only after it has been approved for all that organisation unit's descendants at lower levels for the same workflow and period. When you approve a workflow, it approves data for any data sets that have been assigned to that workflow.

After a period, organisation unit and workflow combination has been approved, data sets associated with that workflow will be locked for that period and organisation unit, and any further data entry or modification will be prohibited unless it is first un-approved.

For example, the following diagram illustrates that data has already been approved for organisation units C and D, for a given period and workflow. It may now be approved for organisation unit B for the same period and workflow. But it is not ready to be approved for organization unit A. Before it can be approved for organisation unit A, it must be approved for B, and for any other children of organisation unit A, for that period and workflow.

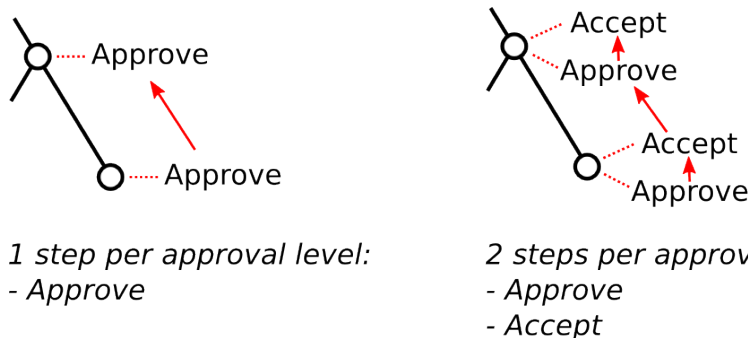
Organisation units



Approving at organisation units

Approving and accepting

DHIS2 supports two different types of approval processes: either a one-step process where the data is approved at each level, or a two-step process where data is first approved and then accepted at each level. This is illustrated in the following diagram:



Approving and accepting

In the one-step process, data is approved at one level, and then approved at the next higher level. Until it is approved at the next higher level, it may be unapproved at the first level. (For example, if the

data was approved my mistake, this allows the approver to undo their mistake.) Once the data is approved at the next higher level, it may not be unapproved at the lower level unless it is first unapproved at the higher level.

In the two-step process, data is approved at one level, and then the approval is accepted at the same level. This acceptance is done by a user who is authorized to approve data at the next higher level. Once the data is accepted, it may not be changed or unapproved unless it is first *unaccepted*.

The two-step process is not required by DHIS2. It is an optional step for a user reviewing data at the next higher level. It has the benefit of locking the acceptance from the level below, so reviewer does not have to worry that the data could be changing from below while it is being reviewed. It can also be used by the higher-level user to keep track of which lower-level data has already been reviewed.

Two-step process can be activated by checking **Acceptance required before approval** in SystemSettings app under General section.

Authorities for approving data

To approve data, you must be assigned a role containing one of these authorities:

- **Approve data** - You may approve data for the organisation unit(s) to which you are assigned. Note that this authority does not allow you to approve data for lower-levels below the organisation unit(s) to which you are assigned. This is useful to separate the users authorized to approve at one level from the users authorized to approve at levels below.
- **Approve data at lower levels** - Allows you to approve data for all lower levels below the organisation units assigned to you. This is useful if, for example, you are a district-level user whose role includes approving the data for all the facilities within that district, but not for the district itself. If you are assigned this as well as the *Approve data* authority, you may approve data at the level of the organisation unit(s) to which you have been assigned, and for any level below.
- **Accept data at lower levels** - Allows you to accept data for the level just below the organisation unit(s) assigned to you. This authority can be given to the same users as approve data. Or it may be given to different users, if you want to have some users who accept data from the level below, and a different set of users who approve data to go up to the next level above.

Configuring data approval

In the *Maintenance app* section under *Data approval level* you can specify the levels at which you want to approve data in the system. Click the Add new button on this page and select the organisation unit level at which you want approvals. It will be added to the list of approval settings. You may configure the system for approving data at every organisation unit level, or only at selected organisation unit levels.

Note that when you add a new approval level, you may optionally choose a Category option group set. This feature is discussed later in this chapter.

Also in maintenance under *Data approval workflow*, you can define the workflows that will be used for approving data. Each workflow can be associated with one or more approval levels. Any two workflows may operate at all the same approval levels as each other, some of the same and some different levels, or completely different levels.

If you want data for a data set to be approved according to a workflow, then assign the workflow to the data set when you add or edit the data set. If you do not want data for a data set to be subject to approval, then do not assign any workflow to that data set. For data sets that you want to approve at

the same time as each other, assign them to the same workflow. For data sets that you want to approve independently, assign each data set to its own workflow.

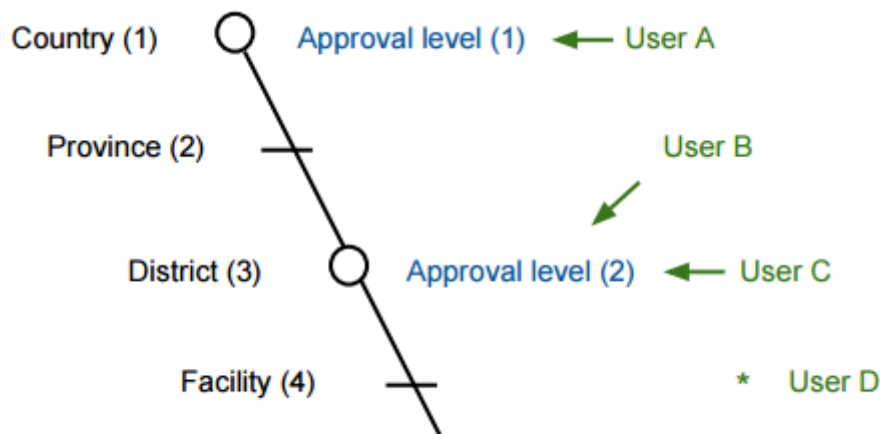
Under *System Settings* -> *Analytics*, you can control what unapproved data (if any) will appear in analytics. See the "Analytics settings" section of this user guide. Note that users who are assigned to organisation units where data is ready for approval can always view this data in analytics, as can users assigned to higher-level organisation units if they have the *Approve data at lower levels* authority or the *View unapproved data* authority.

Data visibility

If the option *Hide unapproved data in analytics* is enabled, data will be hidden from viewing by users associated with higher levels. When determining whether a data record should be hidden for a specific user, the system associates a user with a specific approval level and compares it to the level to which the data record has been approved up to. A user is associated with the approval level which matches the level of the organisation unit(s) she is linked to, or if no approval level exists at that level, the next approval level linked to an organisation unit level below herself. A user will be allowed to see data which has been approved up to the level immediately below her associated approval level. The rationale behind this is that a user must be able to view the data that has been approved below so that she can eventually view and approve it herself.

Note that if the user has been granted the *View unapproved data* or the *ALL* authority she will be able to view data irrespective of the approval status.

Lets consider the following example: There are four organisation unit levels, with approval levels associated with level 2 and 4. *User A* at country level (1) gets associated with approval level 1 since the approval level exists at the same level as the organisation unit level. *User B* gets associated with approval level 2 since there is no approval level directly linked to her organisation unit level and approval level 2 is the immediate level below. *User C* gets associated with approval level 2. *User D* is below all approval levels which implies that she can see all data entered at or below her organisation unit level.



Hiding of unapproved data

Using this example, lets consider some scenarios:

- Data is entered at facility level: Only *User D* can see the data, as the data has not yet been approved at all.
- Data is approved by *User D* at facility level: Data becomes visible to *User C* and *User B*, as the data is now approved at their level.

-
- Data is approved by *User C* at district level: Data becomes visible to *User A*, as data is now approved at the level immediately below herself.

Approving data

To approve data, go to *Reports* and choose *Data Approval*. When this report shows data that is configured for approval, it shows the approval status of the data in the report. The approval status will be one of the following:

- **Waiting for lower level org units to approve** - This data is not yet ready to be approved, because it first needs to be approved for all the child organisation units to this organisation unit, for the same workflow and period.
- **Ready for approval** - This data may now be approved by an authorized user.
- **Approved** - This data has already been approved.
- **Approved and accepted** - This data has already been approved, and also accepted.

If the data you are viewing is in an approval state that can be acted upon, and if you have sufficient authority, one or more of the following actions will be available to you on the *Data Approval* form:

- **Approve** - Approve data that has not yet been approved, or that was formerly approved and has been unapproved.
- **Unapprove** - Return to an unapproved state data that has been approved or accepted.
- **Accept** - Accept data that has been approved.
- **Unaccept** - Return to an unaccepted (but still approved) state data that has been accepted.

In order to unapprove data for a given organisation unit, you must have the authority to approve data for that organisation unit or to approve data for a higher-level organisation unit to which that data is aggregated. The reason for this is as follows: If you are reviewing data for approval at a higher organisation unit level, you should consider whether the data at lower organisation units are reasonable. If all lower-level data looks good, you can approve the data at the higher level. If some lower-level data looks suspect, you can unapprove the data at the lower level. This allows the data to be reviewed again at the lower level, corrected if necessary, and re-approved up through the organisation unit levels according to the hierarchy.

Approving by category option group set

When defining an approval level, you specify the organisation unit level at which data will be approved. You may also optionally specify a category option group set. This is useful if you are using category option groups to define additional dimensions of your data, and you want approvals to be based on these dimensions. The following examples illustrate how this can be done within a single category option group set, and by using multiple category option group sets.

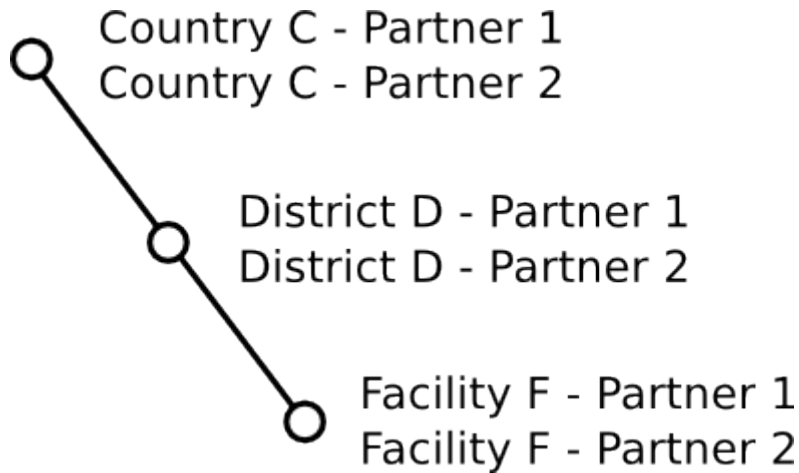
Approving by one category option group set

For example, suppose you define a category option group set to represent NGOs who serve as healthcare partners at one or more organisation units. Each category option group within this set represents a different partner. The category option group for Partner 1 may group together category options (such as funding account codes) that are used by that partner as a dimension of the data. So data entered by Partner 1 is attributed to a category option in Partner 1's category option group. Whereas data entered by partner 2 is attributed to a category option in Partner 2's category option group:

Example Category Option Groups

Category option group set	Category option group	Category options
Partner	Partner 1	Account 1A, Account 1B
Partner	Partner 2	Account 2A, Account 2B

Each partner could enter data for their accounts independently of the other, for the same or different workflows, at the same or different facilities. So for example, data can be entered and/or aggregated at the following levels for each partner, independently of each other:



Example category option groups

Tip

You can use the sharing feature on category options and category option groups to insure that a user can enter data (and/or see data) only for certain category options and groups. If you don't want users to see data that is aggregated beyond of their assigned category options and/or category option groups, you can assign *Selected dimension restrictions for data analysis*, when adding or updating a user.

You can optionally define approval levels for partner data within any or all of these organisation unit levels. For example, you could define any or all of the following approval levels:

Example Category Option Group Set approval levels

Approval level	Organisation unit level	Category option group set
1	Country	Partner
2	District	Partner
3	Facility	Partner

Approving by multiple category option group sets

You can also define approval levels for different category option group sets. To continue the example, suppose that you have various agencies that manage the funding to the different partners. For example, Agency A funds accounts 1A and 2A, while Agency B funds accounts 1B and 2B. You could set up category option groups for Agency A, and Agency B, and make them both part of a category option group set called Agency. So you would have:

Example Multiple Category Option Group Sets

Category option group set	Category option group	Category options
Partner	Partner 1	Account 1A, Account 1B
Partner	Partner 2	Account 2A, Account 2B
Agency	Agency A	Account 1A, Account 2A
Agency	Agency B	Account 1B, Account 2B

Now suppose that at the country level, you want each partner to approve the data entered by that partner. Once this approval is done, you want each agency to then approve the data from accounts that are managed by that agency. Finally, you want to approve data at the country level across all agencies. You could do this by defining the following approval levels:

Example Multiple Category Option Group Set approval levels

Approval level	Organisation unit level	Category option group set
1	Country	
2	Country	Agency
3	Country	Partner

Note that multiple approval levels can be defined for the same organisation unit level. In our example, Partner 1 would approve country-wide data at approval level 3 from category options Account 1A and Account 1B. Next, Agency A would approve country-wide data at approval level 2 from category options Account 1A (after approval by Partner 1) and Account 2A (after approval by Partner 2.) Finally, after approval from all agencies, country-wide data can be approved at approval level 1 across all category options. Note that approval level 1 does not specify a category option group set, meaning that it is for approving data across all category options.

This example is meant to be illustrative only. You may define as many category option groups as you need, and as many approval levels as you need at the same organisation unit level for different category option group sets.

If you have multiple approval levels for different category option group sets at the same organisation unit level, you may change the approval ordering in the *Settings* section, under *System Approval Settings*. Just click on the approval level you wish to move, and select *Move up* or *Move down*. If you have an approval level with no category option groups set, it must be the highest approval level for that organisation unit level.

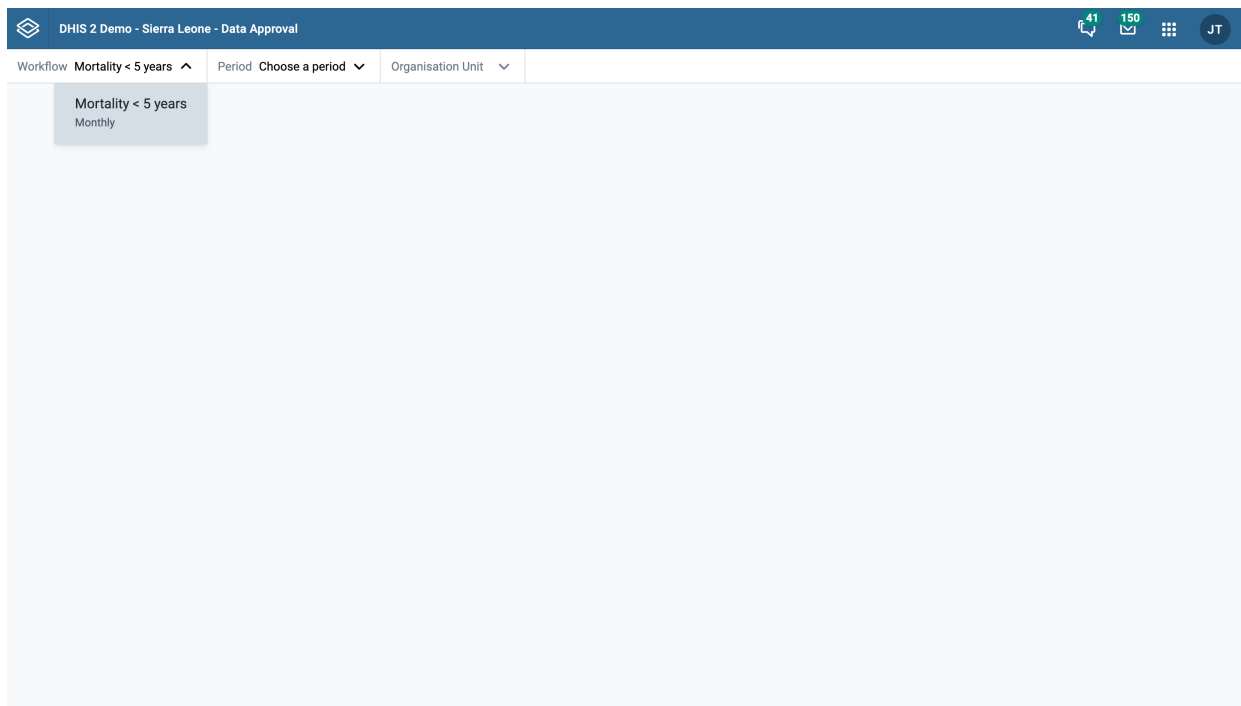
Data approval

The **Data Approval** app provides an intuitive interface to support the approval process in line with the configured approval workflows.

Selecting parameters

Select a workflow

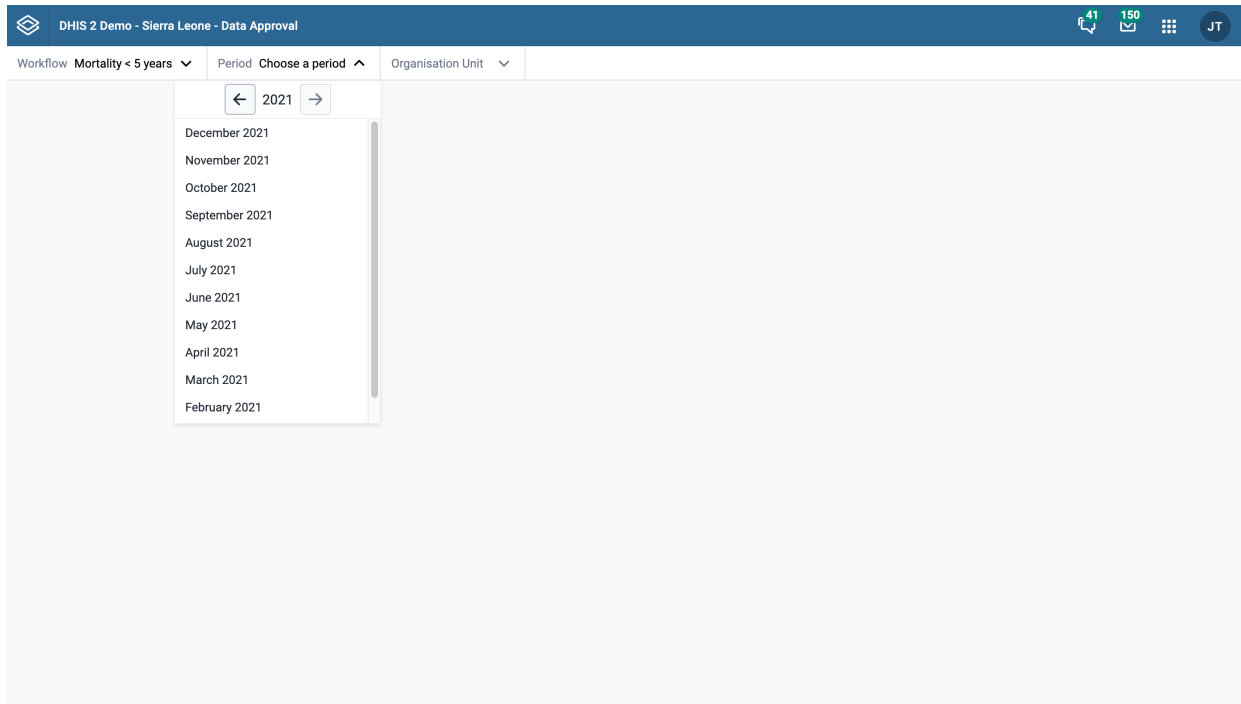
Start by selecting a workflow in the top left of the screen. If you only have access to a single workflow, it will be preselected for you.



Select a workflow

Select a period

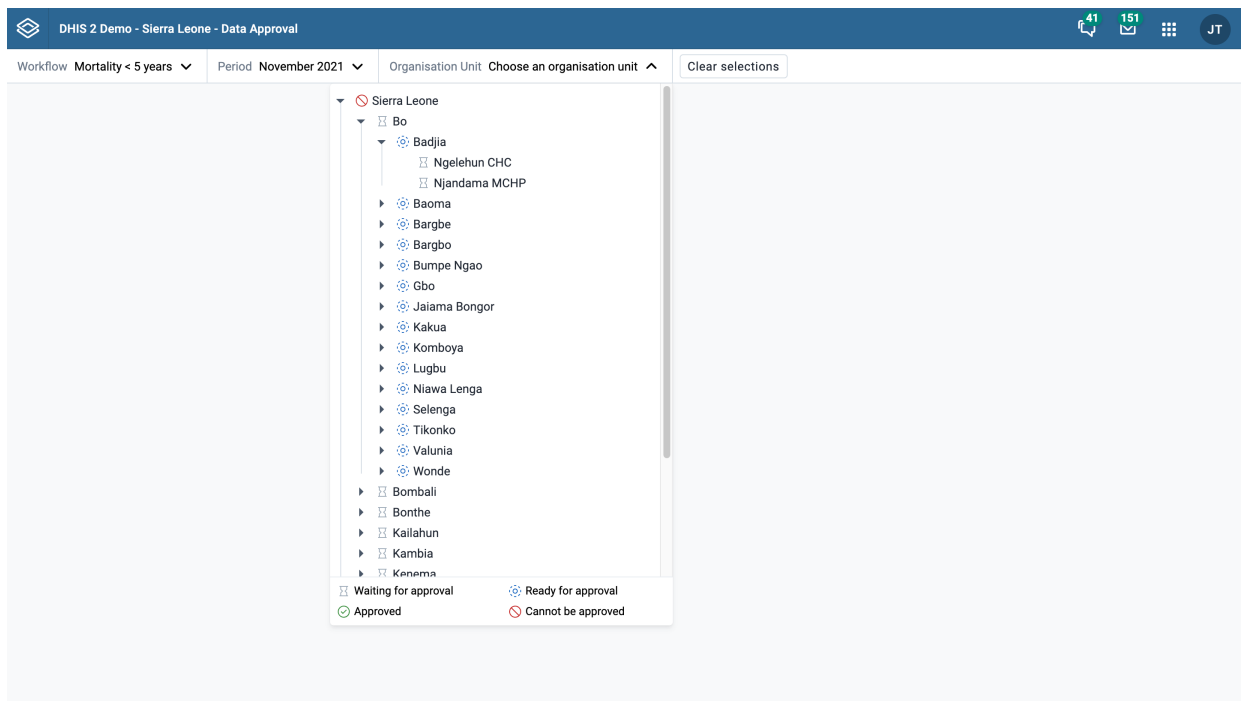
Proceed to select a period you would like to approve data for.



Select a period

Select an organisation unit

Finally, select an organisation unit you would like to approve data for. Each visible organisation unit in the tree is preceded with a status-icon. This icon serves as an indication of the actions available to your user profile for that organisation unit. In the screenshot below, "Badjia" is an organisation unit with status "ready for approval".



Select an organisation unit

Clear selection

Once a workflow, period, and organisation unit have been selected, a "Clear selections" button will appear. This button can be used to quickly clear all three fields and start a fresh selection.

Approving data

Review dataset reports

Once a workflow, period, and organisation unit have been selected, you can review the dataset reports for the datasets connected to the selected workflow. The data for each dataset is presented in a tab.

Datasets can have different period types than the workflow they are connected to. If this is the case, the approval app will show data for all the dataset-periods that end within the selected workflow period.

The screenshot shows the DHIS 2 Demo - Sierra Leone - Data Approval interface. At the top, there is a navigation bar with the title 'DHIS 2 Demo - Sierra Leone - Data Approval' and user information 'JT'. Below the navigation bar, there are dropdown menus for 'Workflow Mortality < 5 years', 'Period November 2021', and 'Organisation Unit Badjia', along with a 'Clear selections' button. The main content area displays a report for 'Mortality < 5 years' with a 'Ready for approval' status. The report is titled 'Mortality < 5 years default' and contains a table with the following data:

Data element	Value
Cholera (Deaths < 5 yrs)	
Tetanus Other (Deaths < 5 yrs)	
Meningitis (Deaths < 5 yrs)	
Tetanus Neonatal (Deaths < 5 yrs)	
Malaria (Deaths < 5 yrs)	
Animal Bites - Rabid (Deaths < 5 yrs)	
Plague (Deaths < 5 yrs)	
Accute Flaccid Paralysis (Deaths < 5 yrs)	1.0
Measles (Deaths < 5 yrs)	
Rabies (Deaths < 5 yrs)	
Dysentery (Deaths < 5 yrs)	

At the bottom of the report, there are two buttons: 'Ready for approval' and 'Approve'.

Review dataset reports

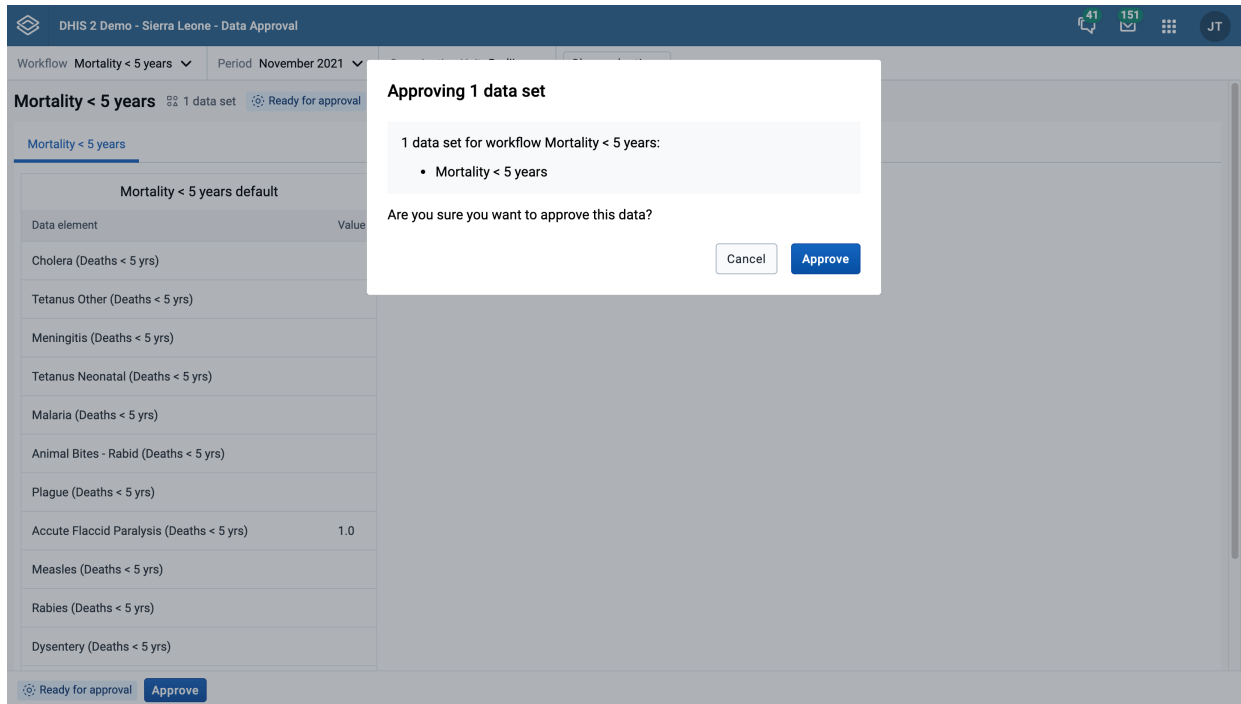
Take an approval action

Once you have reviewed the data in the datasets, you can proceed to take an approval action. The following actions are available:

- Approve
- Accept
- Unapprove
- Unaccept

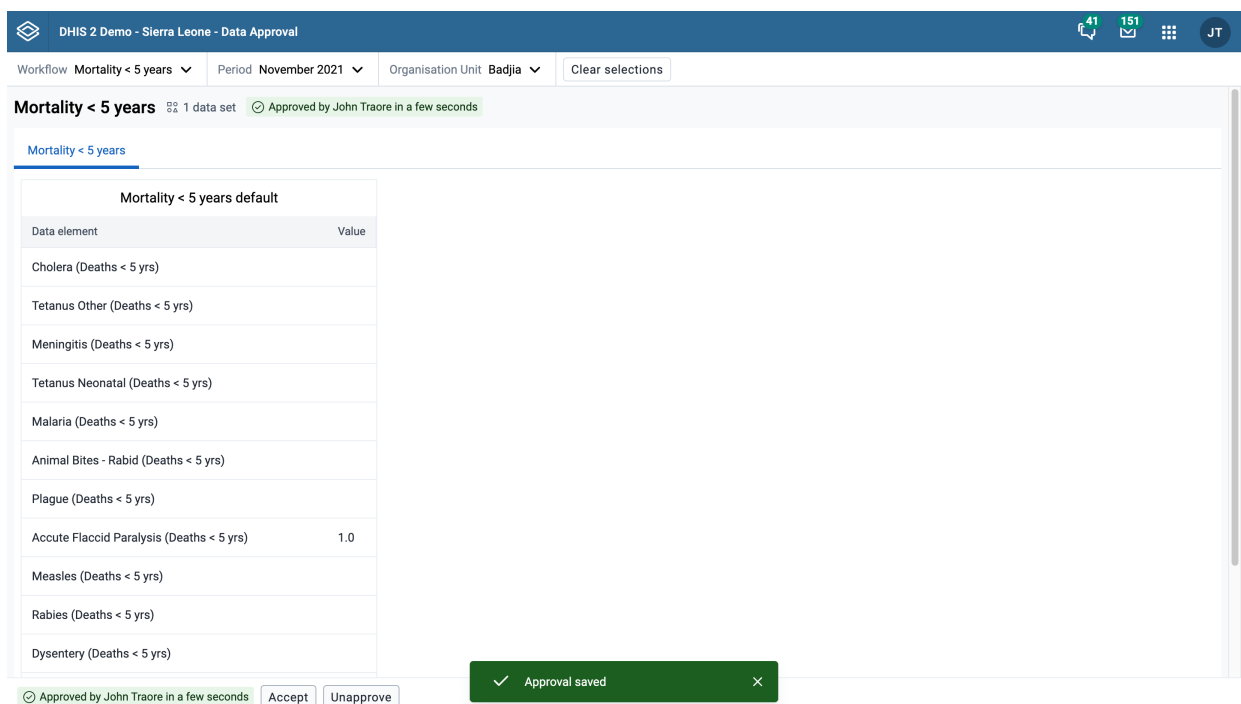
Which of these actions are available for a given workflow at a given moment in time depends on the type of actions which have been taken already at the current and other levels of the organisational hierarchy.

In the example above the "approve" action is available. When you choose the "Approve" action, you are presented with a confirmation dialog as displayed below which summarises the datasets you are approving. The workflow is not approved until you click "Approve" to confirm there. Other actions take effect immediately and do not have a confirmation step.



Take an approval action

After taking one of the approval actions, in this case after confirming the approval, the workflow is updated immediately and you see a the new approval status.



Updated approval status

Approval status tags

As shown in the image above, the approval status is displayed in two places:

1. Above the dataset tabs, after the workflow information
2. Before the buttons on the bottom bar

These status tags may not always display the same information, because they have a slightly different meaning:

1. The status tag above the dataset represents the approval status of the workflow for the selected period and selected organisation unit
2. The status tag in the bottom bar does the same, but also takes your user profile.

A workflow may be ready to be approved at a given organisation unit level, but you do not have the appropriate authority to do so.

Managing dashboards

About the Dashboards app

The Dashboards app makes it possible to present a high level overview of your data, including displaying analytical objects such as maps, charts, reports and tables, as well as displaying text-based information, resource links, and app widgets.

Features of the Dashboards app include:

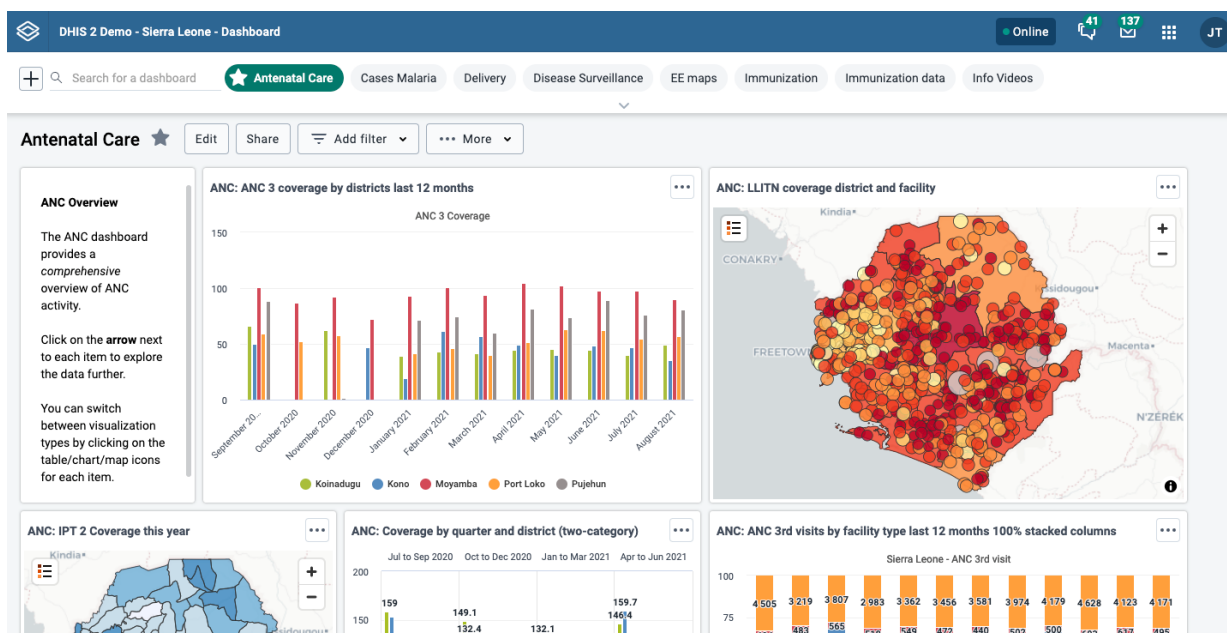
- View and print dashboards
- Create and edit dashboards
- Share dashboards with users and user groups
- Apply temporary filters while viewing dashboards
- Responsive view on mobile devices and small screens
- Access dashboards while offline

Dashboards app layout

Dashboards have a title, description, and any number of dashboard items. Above the dashboard is the dashboards bar, which shows all your available dashboards, a dashboard search field, and a + button for creating a new dashboard.

The Dashboards app 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 or browser, then the first starred dashboard will be displayed. If there are no starred dashboards, then the first dashboard (alphabetically) will be displayed. Starred dashboards always show first in the dashboard list.

Below is an example of a dashboard named "Antenatal Care", which has been populated with charts and maps:



Personalization

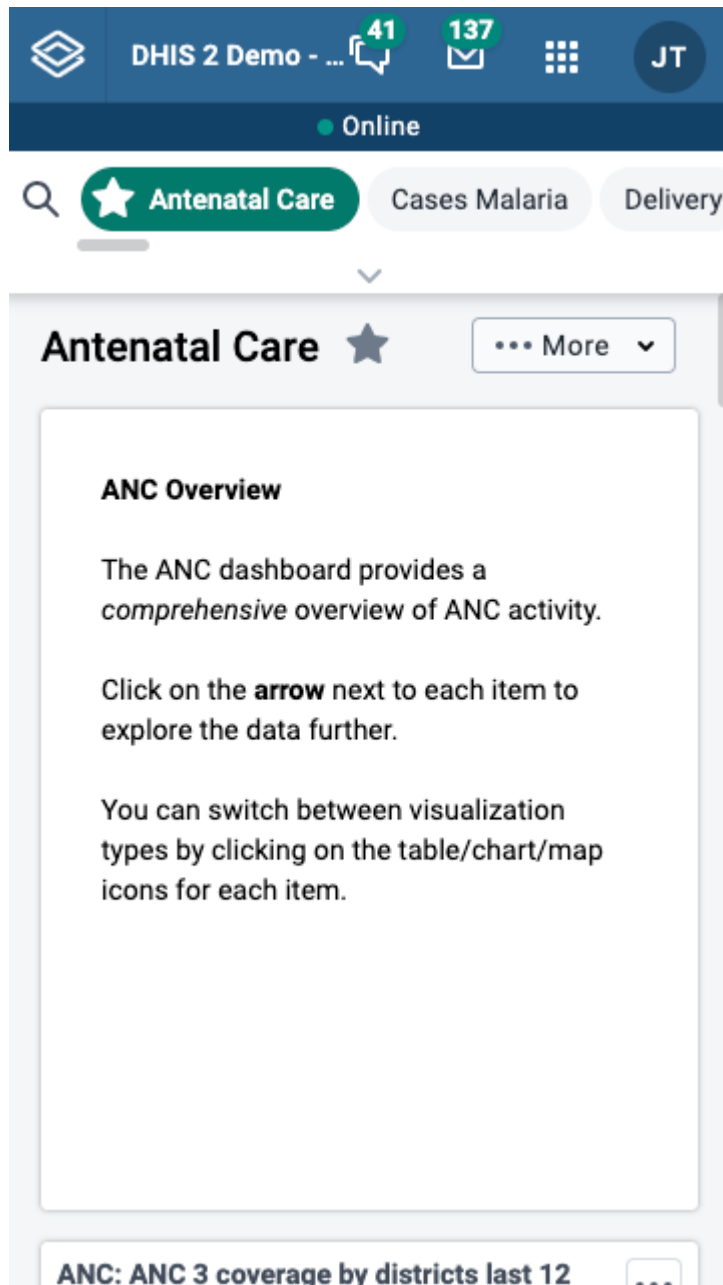
The Dashboards app can be personalized in the following ways:

- [Set the height of the dashboards bar](#)

- [Star dashboards for quick access to your favorite dashboards](#)
- [Show or hide dashboard description](#)

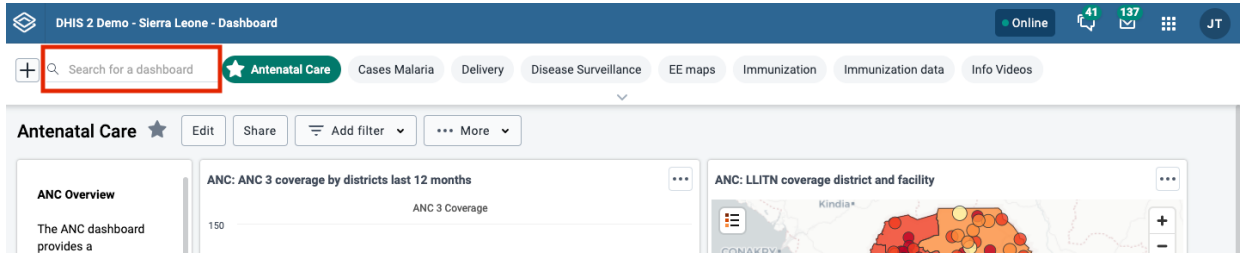
Responsive view on small screens

When viewing dashboards on small screens (for instance, portrait orientation on a mobile phone), the dashboard will adapt to the screen and show all items in a single column. Some options, including editing, filtering and sharing, will not be available.



Searching for a dashboard

You can search for a specific dashboard using the search field in the upper left of the dashboards bar entitled "Search for a dashboard". The search is case insensitive, and as you type, the list of dashboards will be narrowed down to those that match your search text.

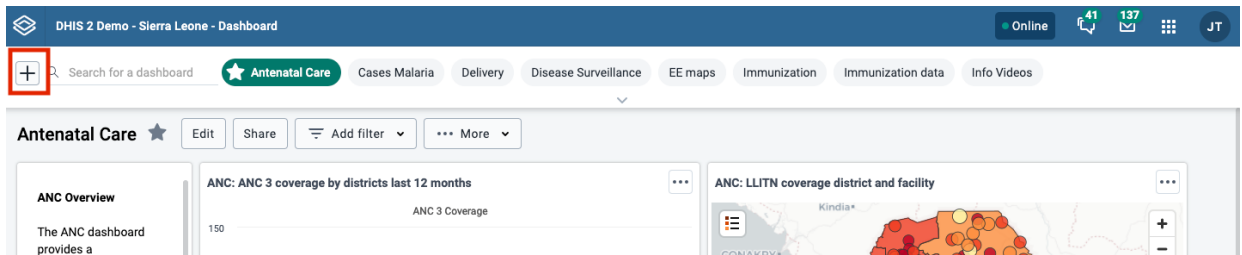


Personalizing the height of the dashboards bar

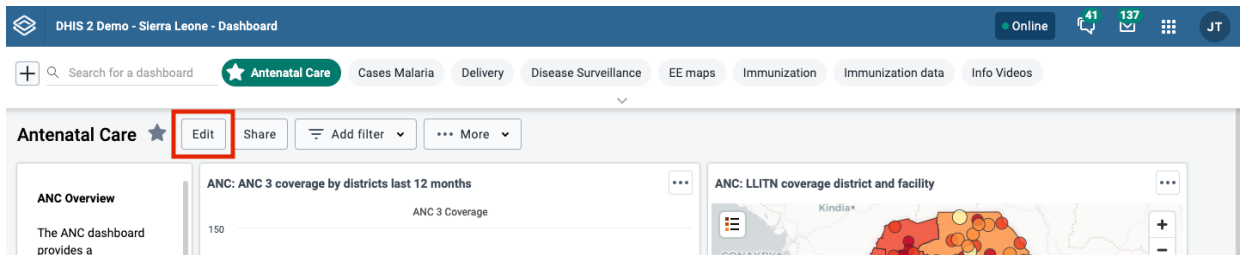
You can set a specific height for the dashboards bar by down-clicking and dragging the bottom edge of the bar. When you finish dragging, the new height will be set. Clicking on the down arrow at the bottom of the dashboards bar will expand the bar to its maximum height (10 "rows"). Clicking on the up arrow will reset the height to your personalized height.

Creating and editing a dashboard

To create a new dashboard, click the + button in the left corner of the dashboards bar to enter create/edit mode:



To edit an existing dashboard, click the **Edit** button next to the dashboard title (you must have edit access to see this button):



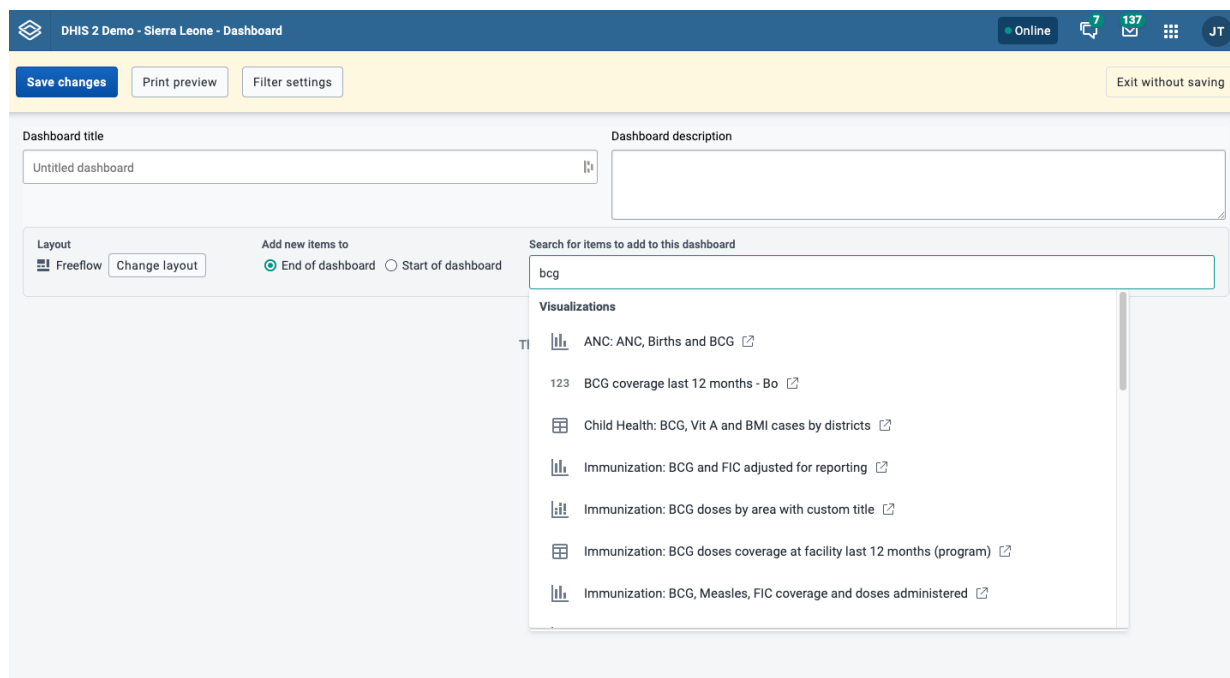
In create/edit mode, you can add or change the dashboard title, description and dashboard items. If you do not add a title, the dashboard will automatically be titled "Untitled dashboard".

The screenshot shows the DHIS 2 Demo - Sierra Leone - Dashboard configuration interface. At the top, there is a blue header with the DHIS 2 logo, the text "DHIS 2 Demo - Sierra Leone - Dashboard", and a status bar with "Online", a notification icon with "41", a mail icon with "137", and a user profile icon "JT". Below the header is a yellow bar with buttons for "Save changes", "Print preview", "Filter settings", and "Exit without saving". The main content area is divided into sections: "Dashboard title" with a text input field containing "Untitled dashboard"; "Dashboard description" with a large text area; "Layout" with a "Freeflow" button and a "Change layout" button; "Add new items to" with radio buttons for "End of dashboard" (selected) and "Start of dashboard"; and "Search for items to add to this dashboard" with a search input field containing the placeholder text "Search for visualizations, reports and more". The bottom of the main area displays the message "There are no items on this dashboard".

Adding items to the dashboard

Add items to the dashboard by searching for items using the **Search for items to add to this dashboard** drop down selector. Item types are:

- Visualizations (charts and tables)
- Maps
- Event reports
- Event charts
- Reports
- Resources
- Apps
- Messages
- Text boxes
- Spacers

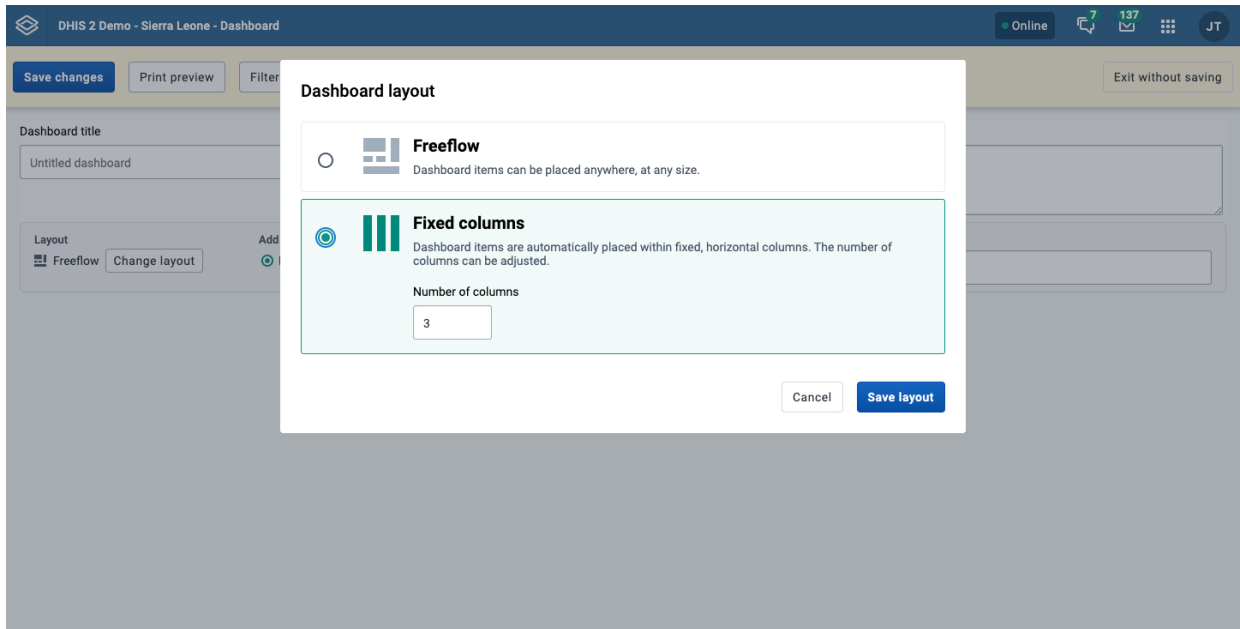


The list of items in the drop-down initially displays 10 visualizations (charts and tables), and 5 from each of the other categories, based on the search text you enter. Messages (Email), text boxes and spacer items are also found in the list. To view more items, click on **Show more**, and the list for that type will be extended to 25 items. If you still do not find the item you want, try typing a more specific search text.

Dashboard layout and placement of new items

When adding items to the dashboard you can choose an overall layout by clicking on **Change layout** button. You can change this layout setting at any time.

- With *Freeflow* layout, the added items can be moved using the mouse by down-clicking on the item and dragging it to the desired position. Items can also be resized with the mouse by down-clicking on the drag handle in the lower right corner of the item and dragging to the desired size.
- With *Fixed columns* layout, you can choose the number of columns to have on the dashboard, and the dashboard will automatically be layed out for you. Items cannot be moved or resized in *Fixed columns* layout.

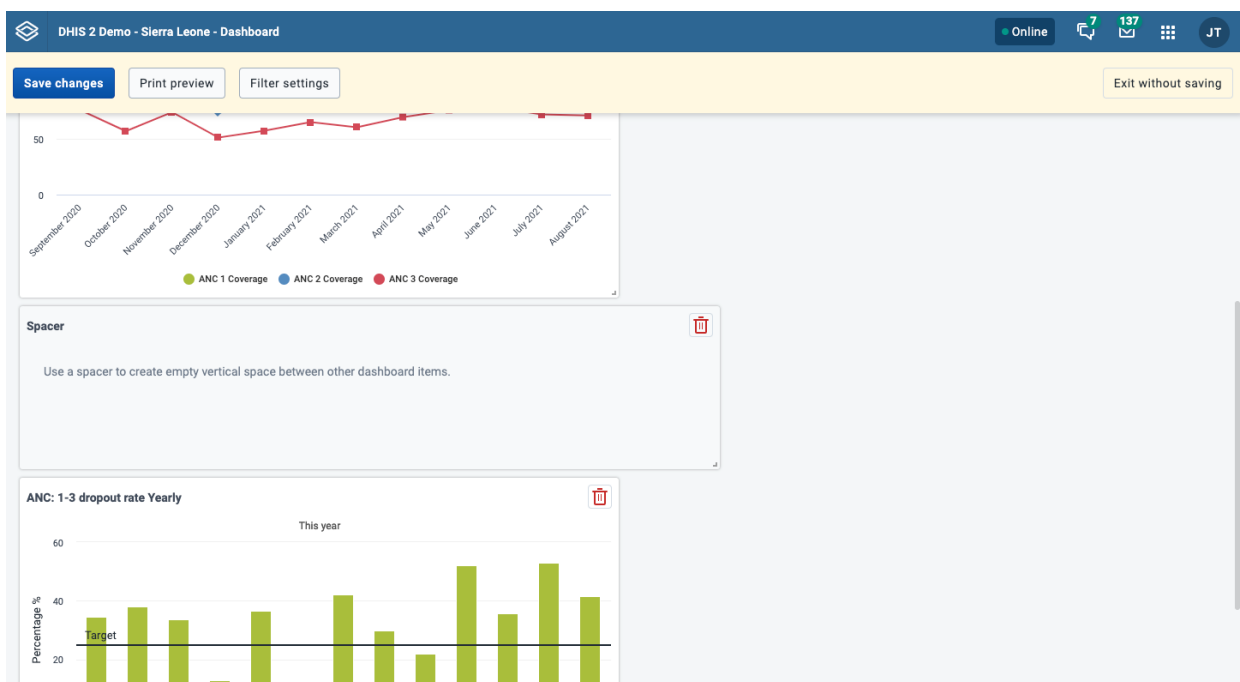


You can also configure whether newly added items are automatically placed at the start or end of the dashboard by choosing the desired option. This option can be changed at any time.

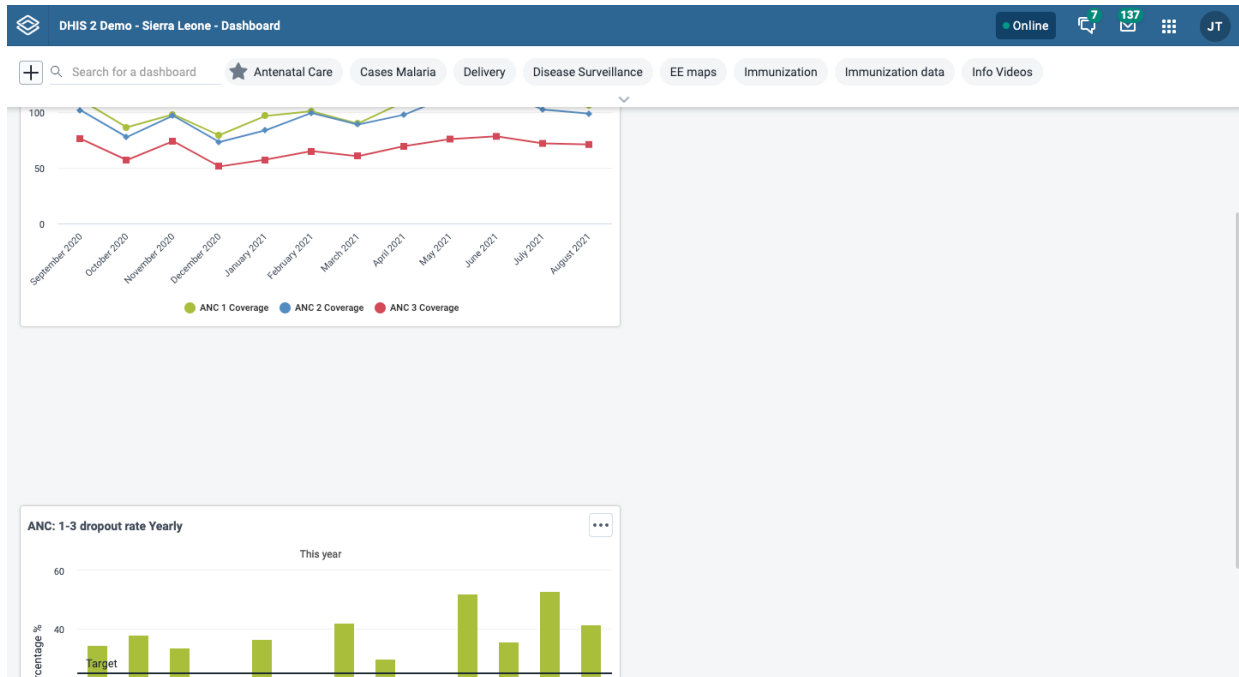
Spacer items

When adding items to the dashboard using *Freeflow* layout, they will "rise" upwards until they bump into another item. In order to force empty vertical space between items (like an empty row), you can add spacer items to the dashboard. They are only visible in edit/create mode. In view mode, they are not displayed, but take up the defined space.

Spacer in **edit/create mode**:



Spacer in **view mode**:



Removing items

Remove items by clicking on the red trash can at the upper right of the item. Be aware that when you remove an item while in *Freelayout*, the items that are positioned below the removed item will "rise" upwards until they bump into an item above.

Actions in create/edit mode

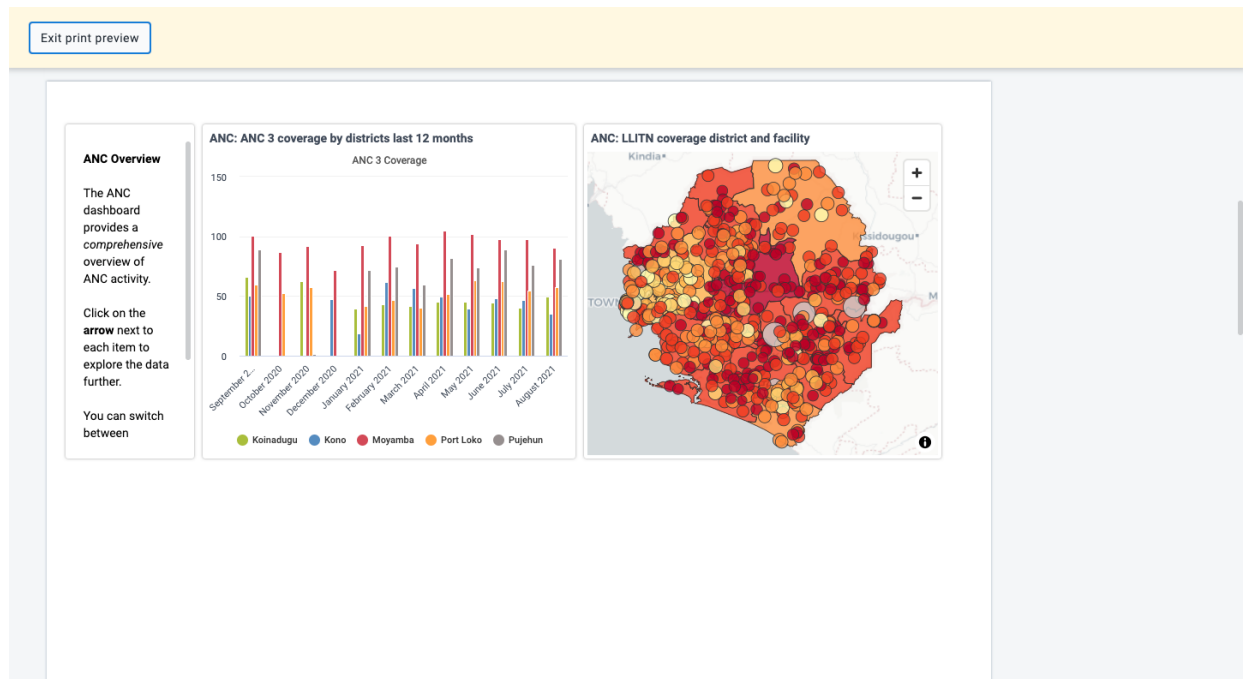
In create/edit mode you will see the following buttons in the actions bar at the top of the page: **Save changes**, **Print preview**, **Filter settings**, **Translate**, **Delete**, and **Exit without saving**. The **Translate** and **Delete** buttons are only shown if you are editing an existing dashboard.

Saving the dashboard

When creating or editing a dashboard, changes are saved when you click the **Save changes** button. If you don't want to save your changes, click the **Exit without saving** button. You will then be returned to view mode with the dashboard you were previously viewing.

Print preview

Click on the **Print preview** button to view what the dashboard will look like when being printed with the [Dashboard layout option](#).



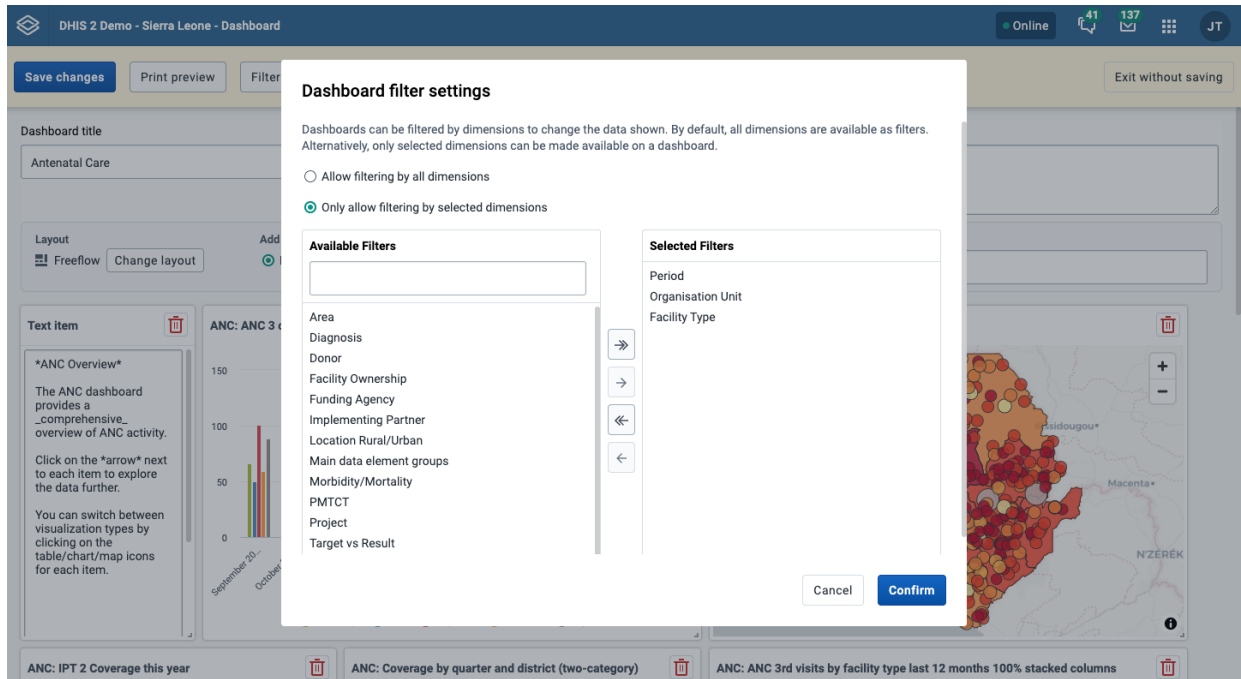
Click on **Exit print preview** to return to editing the dashboard.

Note that some items may be moved to the next page to avoid being split between two pages. Items may also be shortened to fit on one page. Items that are shortened show an info icon in the upper right corner of the item in preview. The info icon is not visible in the actual print.

Restricting dashboard filters

By default, users will be able to filter dashboard items by any dimension defined in the DHIS2 instance. Dashboard filter settings can be edited for a dashboard by clicking on **Filter settings**.

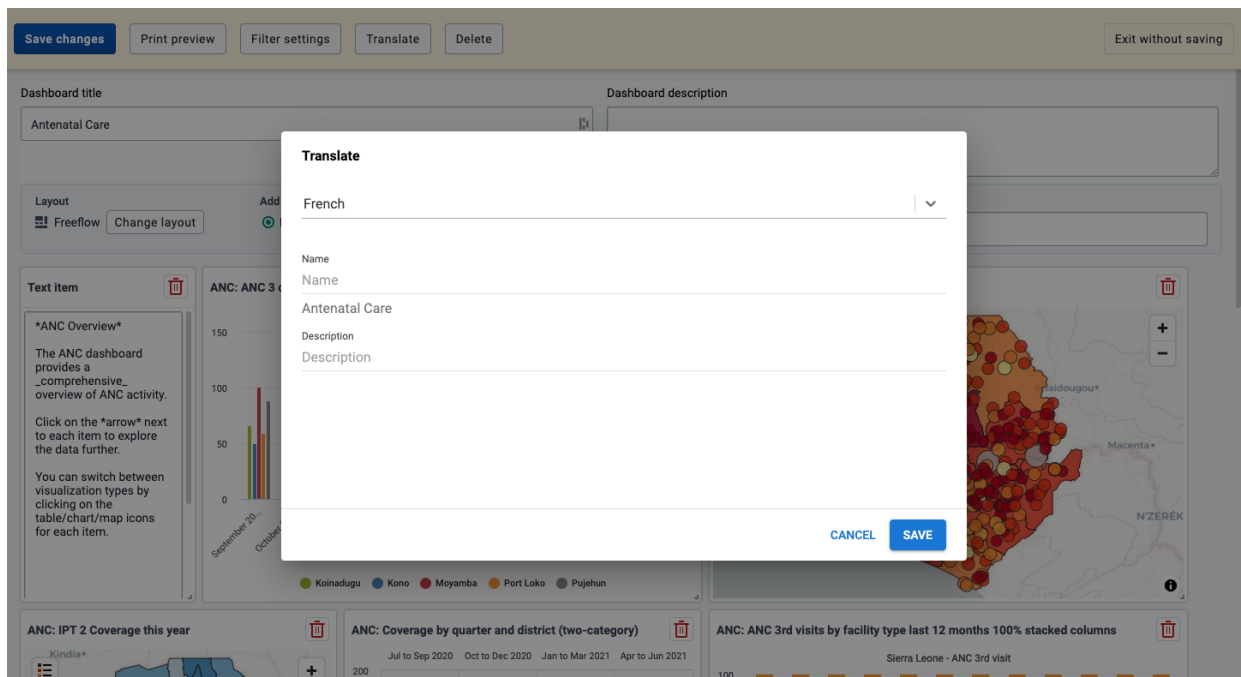
To restrict available filters, you can click **Only allow filtering by selected dimensions** and select the filters you wish to allow on the dashboard. Period and Organisation Unit are selected by default but can be removed if desired. When the dashboard is viewed, users will only be able to choose from among the filters selected.



In order to save updates to filter settings, you need to first click **Confirm** to close the Filter settings dialog and then click **Save changes** to save the dashboard changes.

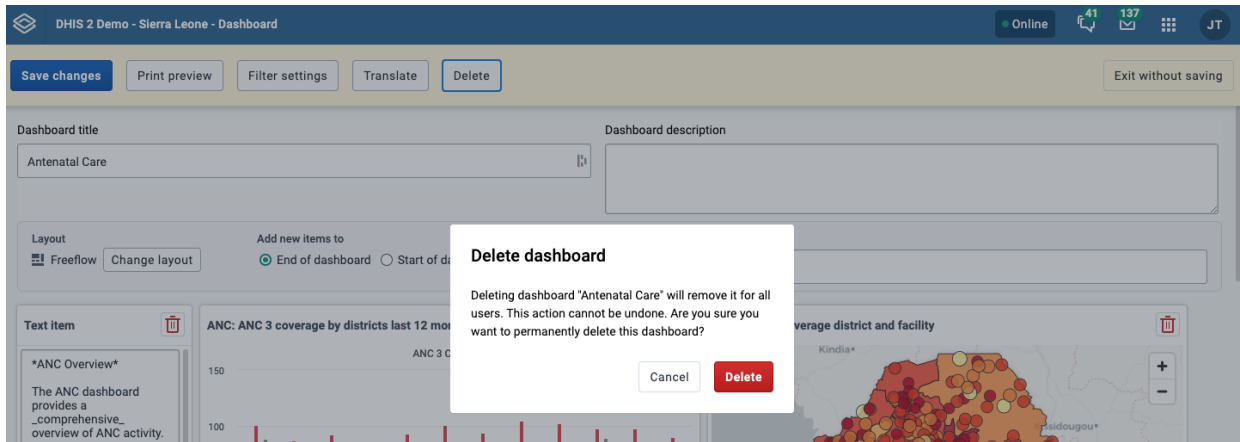
Translating dashboard title and description

If you are editing an existing dashboard, then there will be a **Translate** button. Click on this button to open the Translation dialog, which provides a list of languages to translate to, and shows the original dashboard title underneath the name input field. First choose the language you want to translate for, then fill in the dashboard name and description translation.



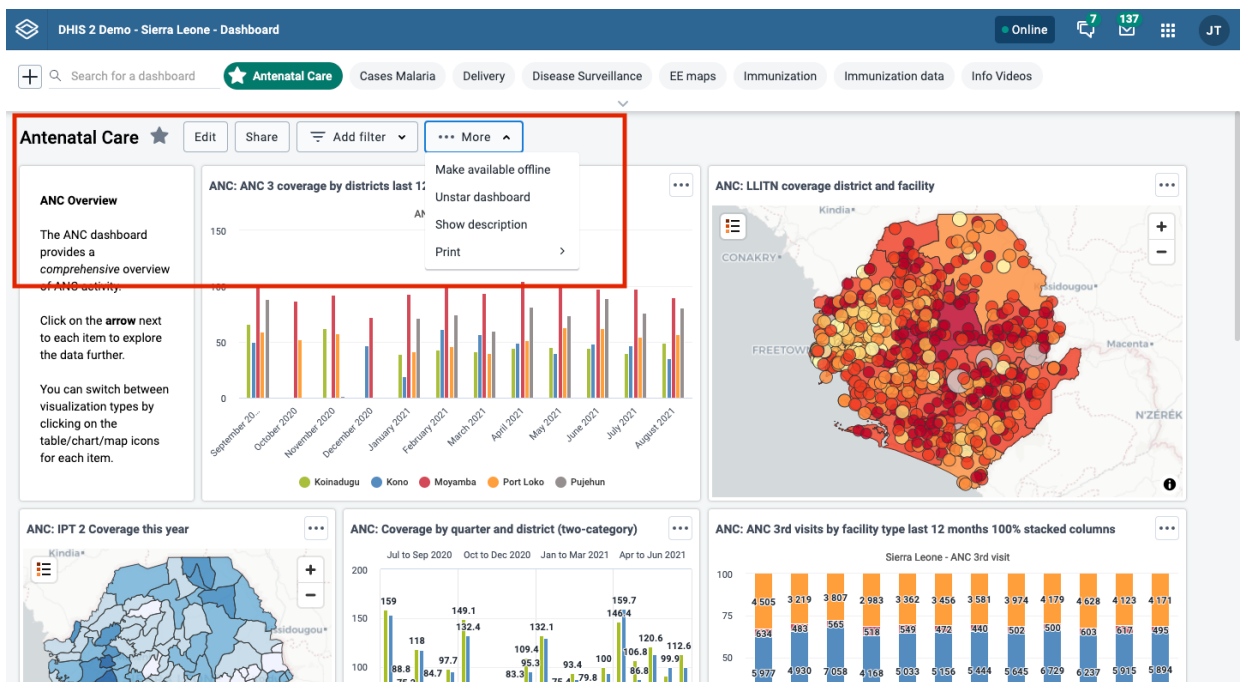
Deleting a dashboard

If you have access to delete the dashboard, then there will be a **Delete** button. When you click the **Delete** button, a confirmation dialog will first be displayed to confirm that you want to delete the dashboard.



Viewing a dashboard

From view mode, you can toggle showing the description, star a dashboard, apply filters, print the dashboard, make the dashboard available offline, and share the dashboard with other users and user groups.



Show description

To toggle the description, open the **...More** menu and choose **Show description** (or **Hide description**). This setting will be remembered for all dashboards that you open. This setting applies to you, not other users.

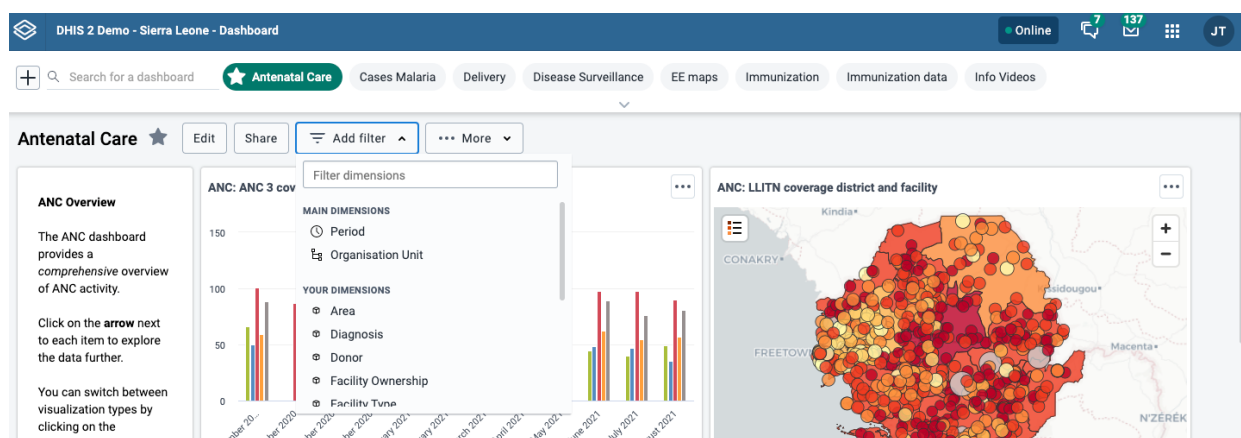
Star dashboards

Your starred dashboards are listed first in the list of dashboards for quick access. To star a dashboard, click on the star button to the right of the title. You can also toggle the star from the **...More** menu. When the star is “filled”, that means the dashboard is starred. Starring a dashboard only applies to you, not other users.

Filtering a dashboard

Applying filters to a dashboard change the data displayed in dashboard items containing visualizations. The filters are applied to each dashboard item in the same way: each added filter overrides the original value for that dimension in the original chart, table or map. It is possible to filter on Organisation Units and Periods, as well as dynamic dimensions, depending on the DHIS2 instance. You can apply multiple filters to the dashboard.

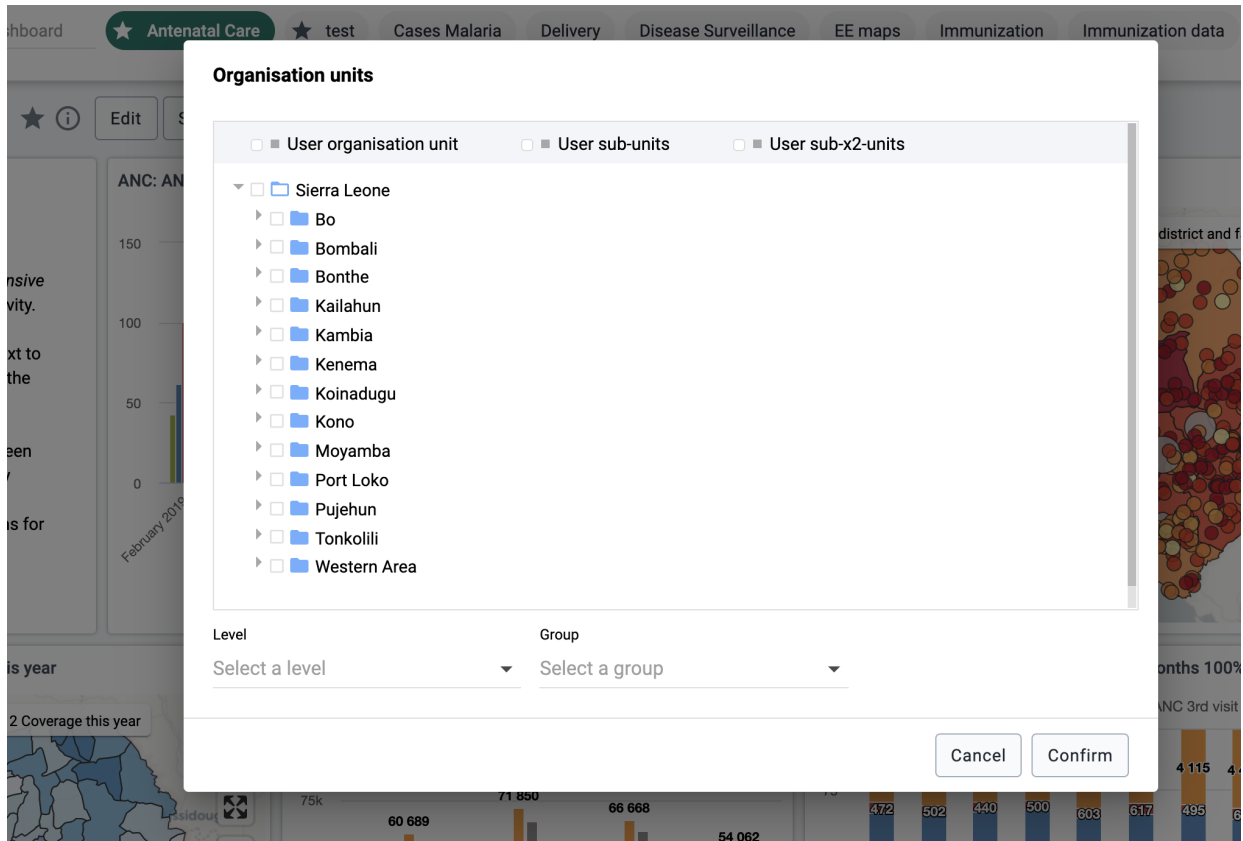
To add a filter, click on the **Add Filter** button and choose a dimension:



The screenshot shows the DHIS2 interface for the 'Antenatal Care' dashboard. The dashboard title is 'Antenatal Care' with a star icon. Below the title are buttons for 'Edit', 'Share', 'Add filter', and 'More'. The 'Add filter' button is active, and a dialog box titled 'Filter dimensions' is open. The dialog has two sections: 'MAIN DIMENSIONS' with 'Period' and 'Organisation Unit' (selected), and 'YOUR DIMENSIONS' with 'Area', 'Diagnosis', 'Donor', 'Facility Ownership', and 'Facility Type'. The dashboard contains two main visualizations: a bar chart titled 'ANC: ANC 3 cov' and a map titled 'ANC: LLITN coverage district and facility'. The map shows a map of Sierra Leone with various districts and facilities marked with colored dots. The dashboard also includes an 'ANC Overview' section with text and instructions.

Adding a filter

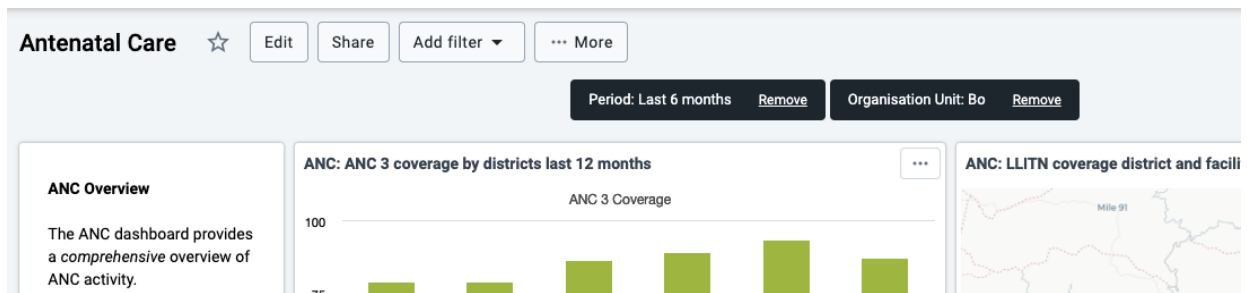
A dialog opens where the filter selection can be made.



Org Unit filter selection

Click on **Confirm** in the dialog to apply the filter to the current dashboard.

Filters are not stored, so when switching to a different dashboard they are reset. Black filter badges appear above the dashboard items to indicate which filters have been applied to the dashboard's visualizations.



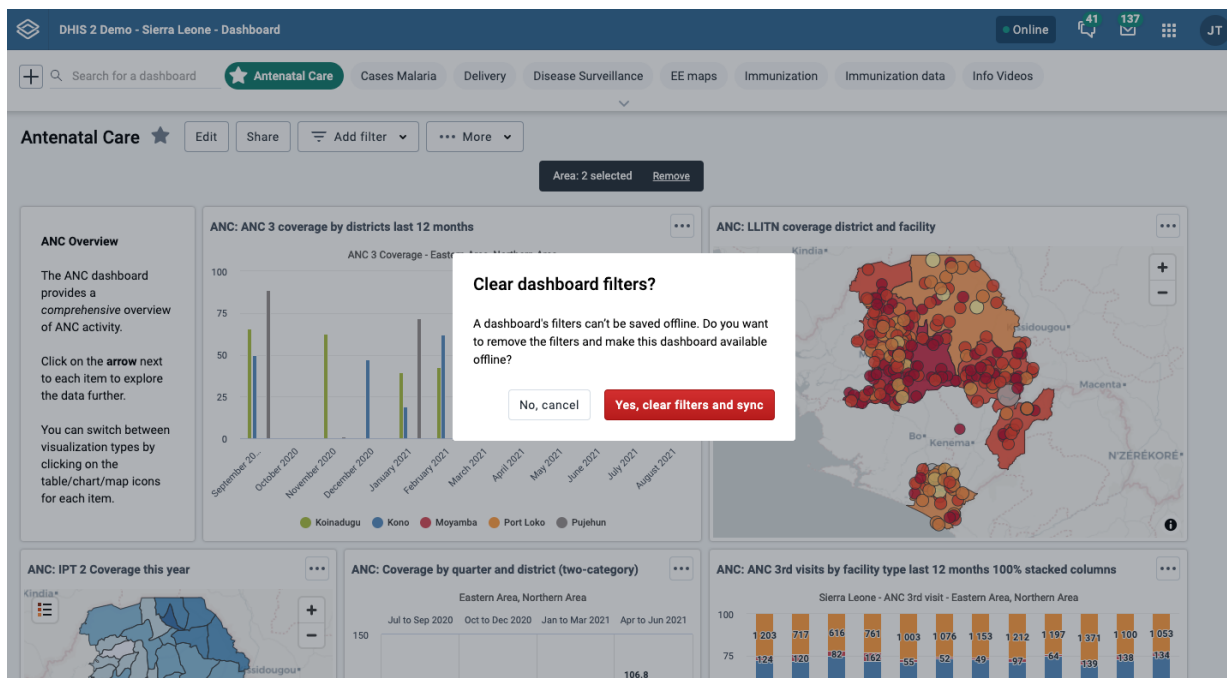
Current filters displayed as badges above the dashboard

You can edit a filter by clicking on the filter badge to open the filter selection dialog. A filter can be removed by clicking on the **Remove** button on the badge. Whenever a filter is added, edited or removed, the dashboard items reload to show the updated data. The filter badges are always visible at the top of the page when scrolling the dashboard content.

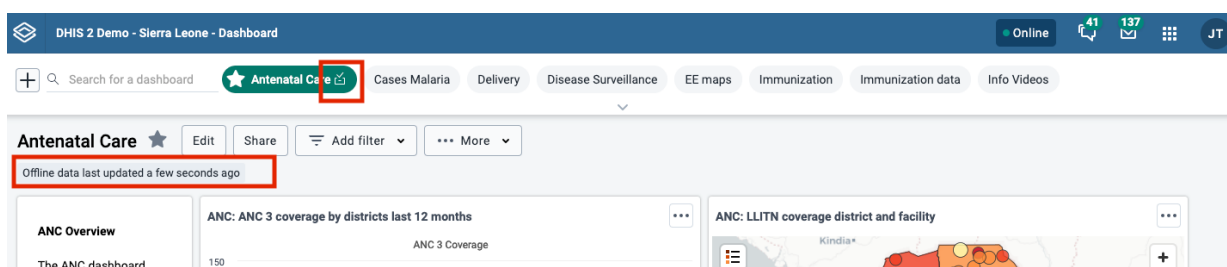
By default, users are able to filter dashboard items by any dimension defined in the DHIS2 instance. To limit available filters, see [Restricting dashboard filters](#).

Making dashboards available offline

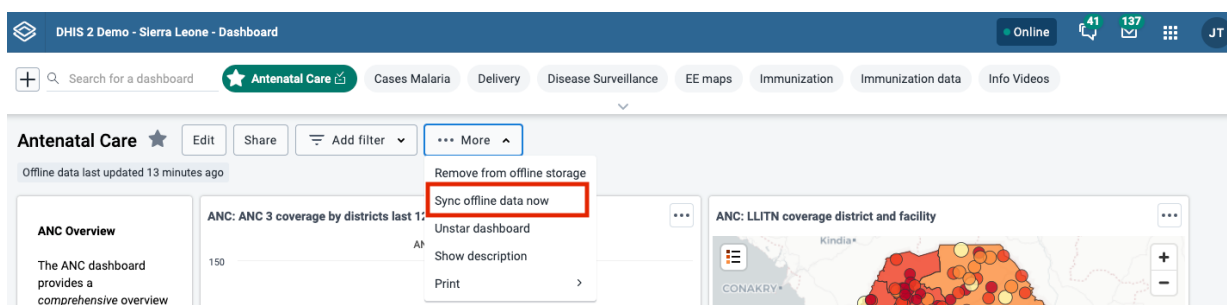
To make a dashboard available offline, choose the **Make dashboard available offline** option in the **...More** menu. This will cause a reload of the dashboard where requests to the server are recorded and saved in browser storage. Note that offline dashboards are only available on the computer and browser where you set it to offline. If you currently have a filter applied when requesting the dashboard be made available offline, a dialog will appear to confirm the removal of the filters.



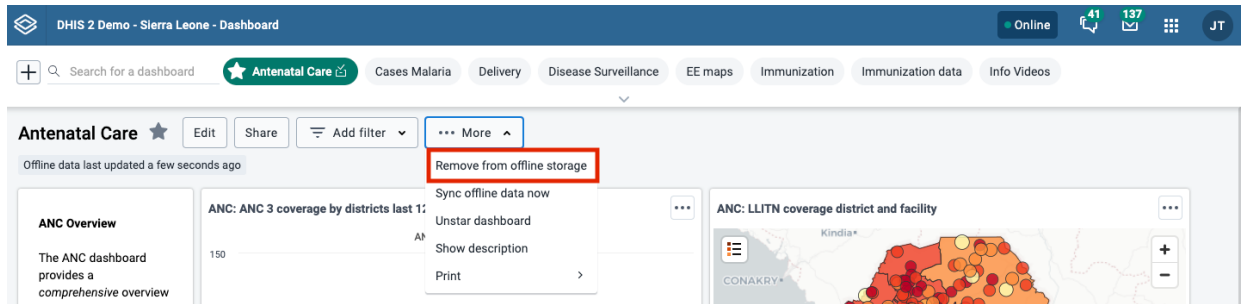
Dashboards that have been saved for offline have an indicator on the dashboard chip in the dashboards bar, as well as a tag showing the time it was saved.



If the dashboard has been changed since you made it available offline, either by you or someone else, you'll need to choose **Sync offline data now** from the **...More** menu to save the latest version of the dashboard.



You can remove a dashboard from offline storage by choosing **Remove from offline storage** in the **...More** menu.



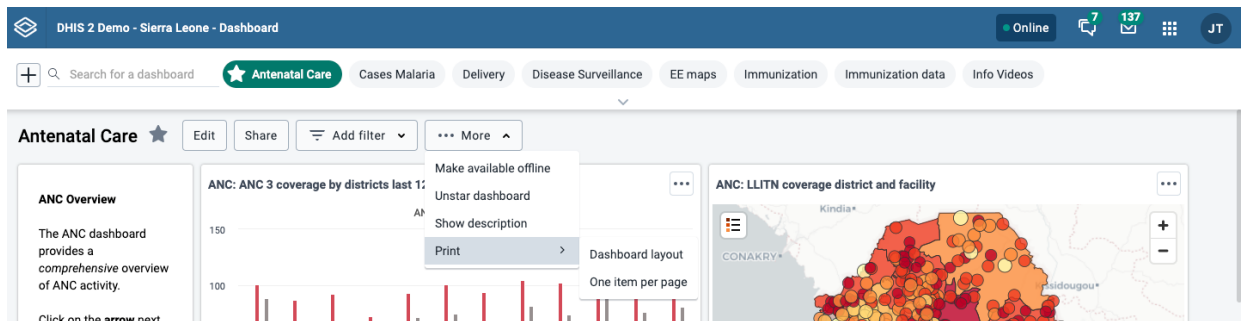
Other notes about Dashboards app when you are offline:

If you manually log out of the DHIS2 instance, all cached dashboards will be cleared and they will no longer be available offline.

If you are offline, any buttons or actions that require a connection to complete successfully are disabled. They will be re-enabled once connectivity is restored.

Printing a dashboard

From the **...More** menu you can print the current dashboard. There are two styles of dashboard print: *Dashboard layout* and *One item per page*. For both styles, a title page is added that shows the dashboard title, description (if the *Show description* setting is enabled), and any applied dashboard filters.



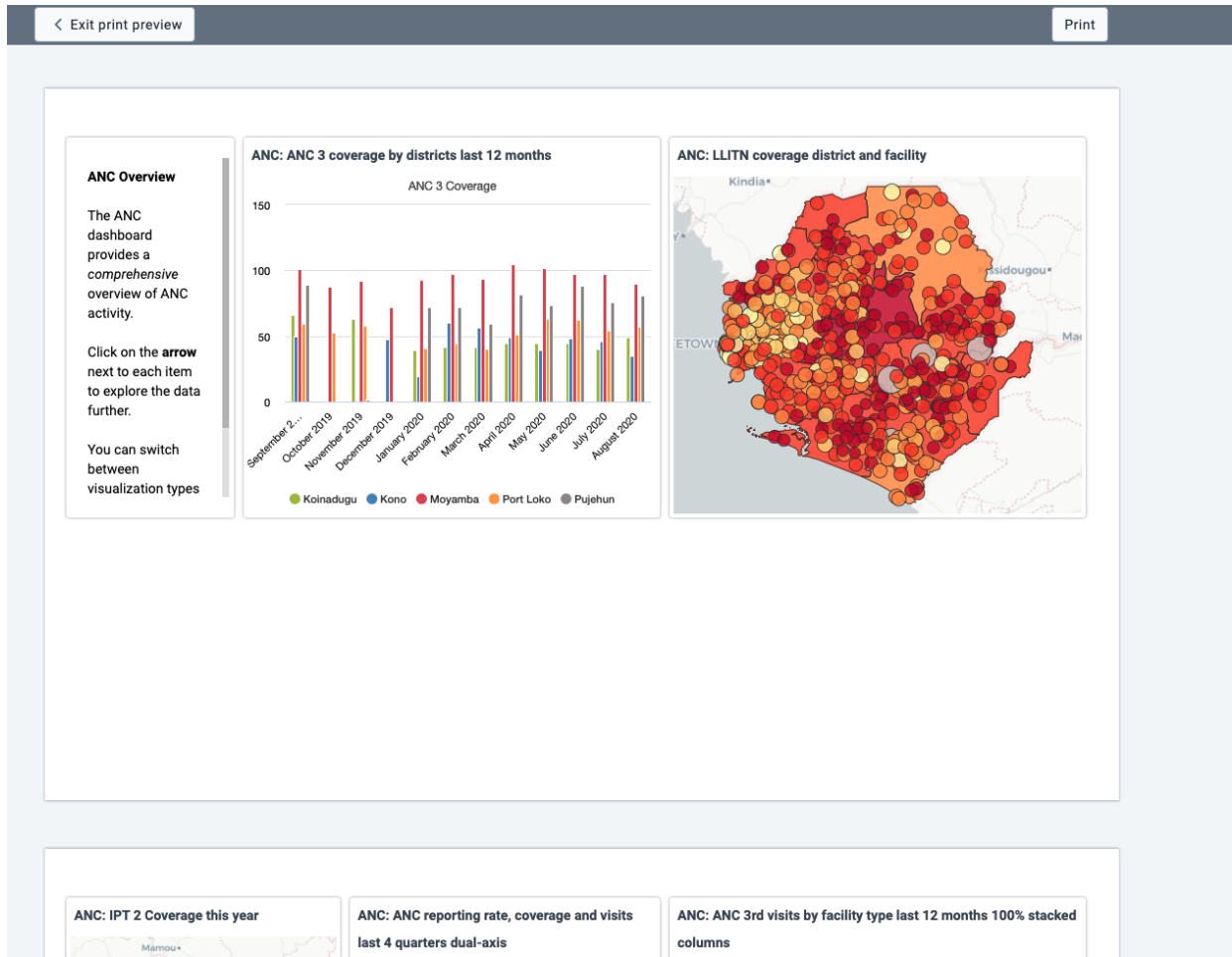
For best print results:

- use Chrome or Edge
- wait until all dashboard items have loaded before printing
- use A4 landscape setting with default margins set and background graphics turned on

Print dashboard layout

Dashboard layout print will approximate the dashboard layout as it is shown in the browser. Note that some adjustments may need to be made to the layout in order to prevent items being split onto multiple pages: items that would be cut off by a page break are moved to the next page, and items that are taller than one page are shortened to fit on one page.

Once in print mode, click on the **Print** button in the upper right to trigger the browser print functionality.



Print one item per page

This style of print will print each dashboard item on a separate page, maximizing the use of the paper size.

Click on the **Print** button in the upper right to trigger the browser print functionality.

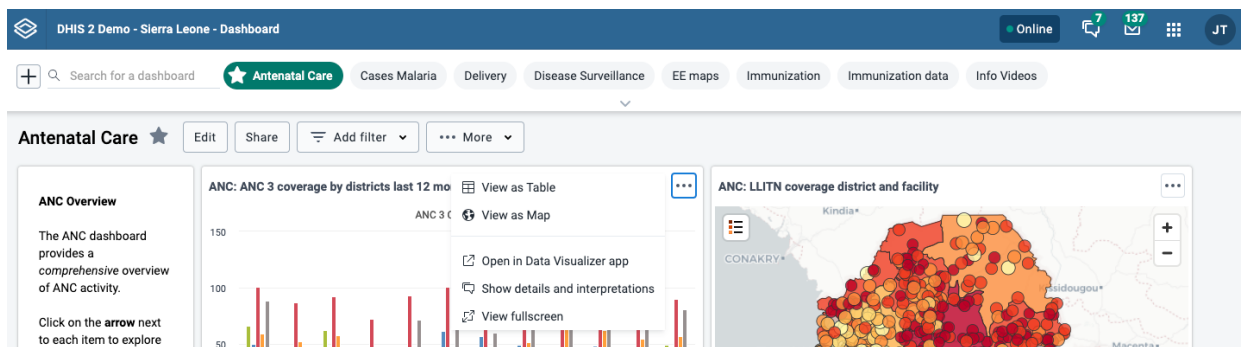


Dashboard items with charts, pivot tables or maps

Dashboard items with charts, pivot table or maps may have an item menu button in the upper right corner of the item with additional viewing options, depending on the system settings that have been configured for the DHIS2 instance. If all the relevant system settings have been disabled by the DHIS2 instance, then there will not be an item menu button. Here are the possible item menu options:

Switching between visualizations

It is possible to toggle the visualization view for items containing charts, pivot tables and maps. Click on the item menu button and choose the desired view (e.g., **View as Table**, **View as Map**, **View as Chart**):



View item in fullscreen

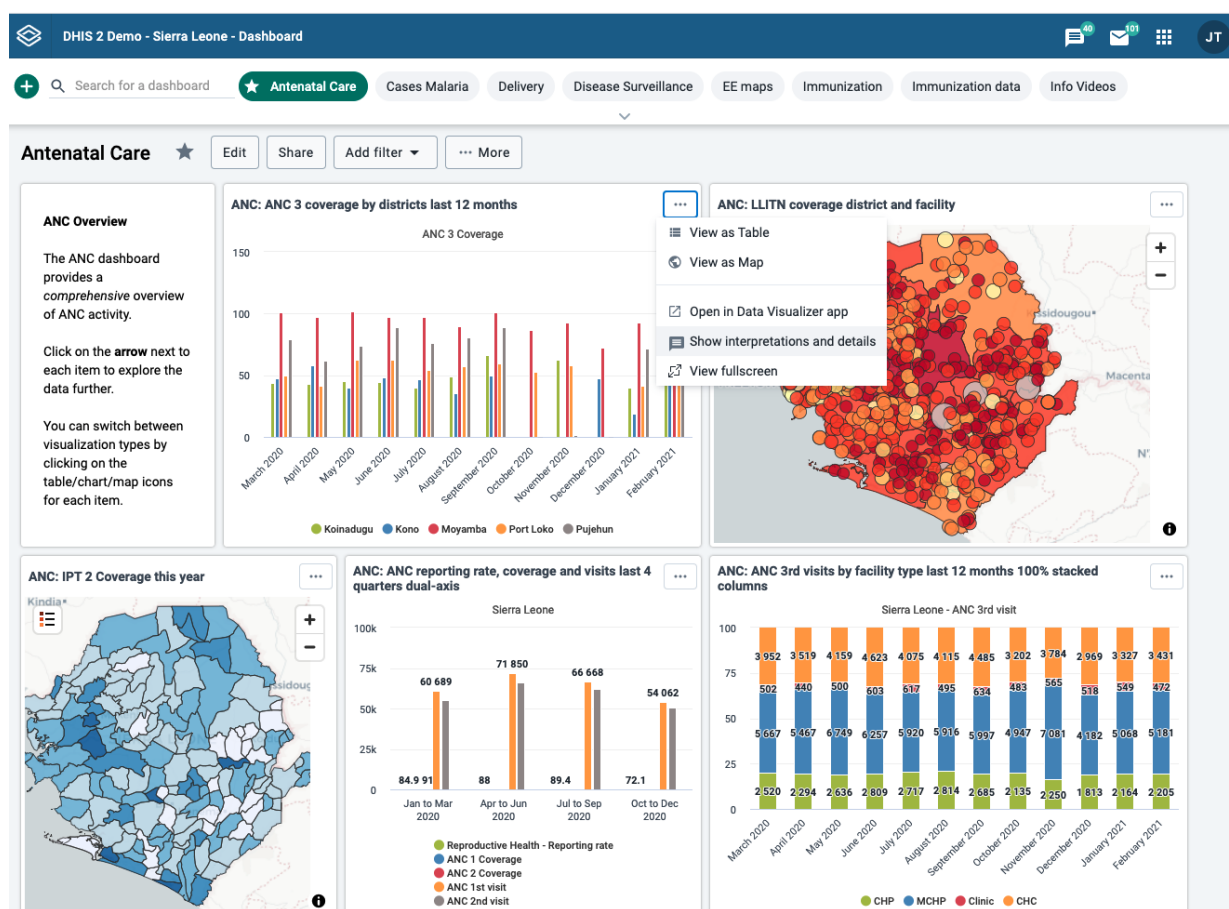
To view the chart, table or map in fullscreen, click on the **View fullscreen** option. To exit fullscreen, you can either press **esc** key or click the exit button in the upper right corner of the fullscreen view.

Open in app

To open the visualization in its corresponding app (e.g., Data Visualizer, Maps) click on the **Open in [app name] app** option.

Show interpretations and details

You can write interpretations for the chart, pivot table, map, event report, and event chart items by clicking on **Show interpretations and details**:



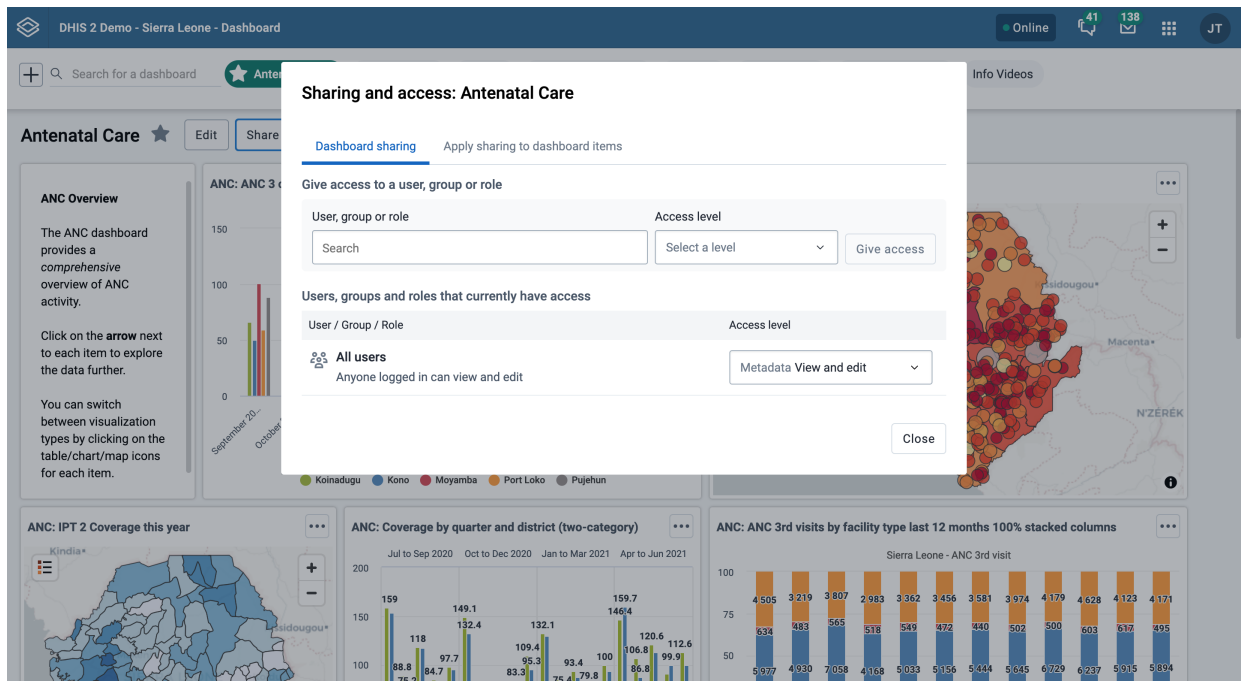
The item will be expanded vertically underneath to show the description, interpretations and replies. You can like an interpretation, reply to an interpretation, and add your own interpretation. You can edit, share or delete your own interpretations and replies, and if you have moderator access, you can delete others' interpretations.

It is possible to format the description field, and interpretations with **bold**, *italic* by using the Markdown style markers * and _ for **bold** and *italic* respectively. The text field for writing new interpretations has a toolbar for adding rich text. Keyboard shortcuts are also available: Ctrl/Command + B and Ctrl/Command + I. A limited set of smilies is supported and can be used by typing one of the following character combinations: :) :-) :(:-(+1 :-1. URLs are automatically detected and converted into a clickable link.

Interpretations are sorted in descending order by date, with the most recent shown on top. Interpretation replies are sorted in ascending order by date, with the oldest shown on top.

Sharing a dashboard

In order to share a dashboard with users and user groups, click on the **Share** button to the right of the dashboard title to display the *Sharing and access* dialog.



There are three levels of sharing permissions available for a dashboard:

- No access

The user or user group cannot view or edit the dashboard. If they try to access the dashboard with the url, the Dashboards app will display the message "Requested dashboard not found".

- View only

The user or user group can view the dashboard but cannot edit it.

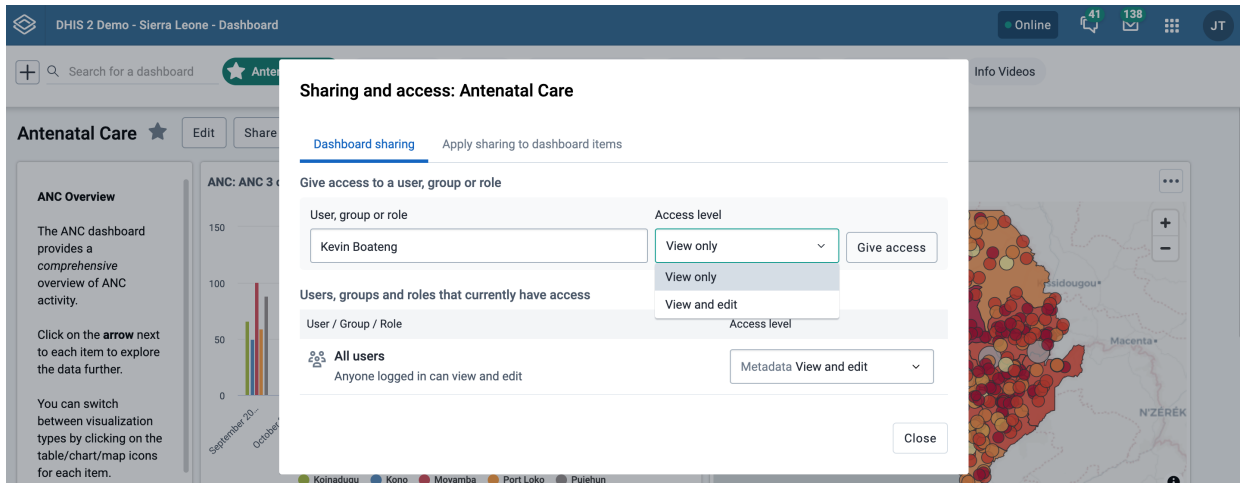
- View and edit

The user or user group can view and edit the dashboard. This level of sharing allows for all types of changes, including altering the layout, resizing and removing items, renaming and deleting the dashboard, etc.

All dashboards have the *All users* group set to **No access** by default. The *All users* group includes all logged-in users.

Add users and user groups

To share a dashboard with specific users and user groups, type the name in the input field, choose the desired access level and click on **Give access**.

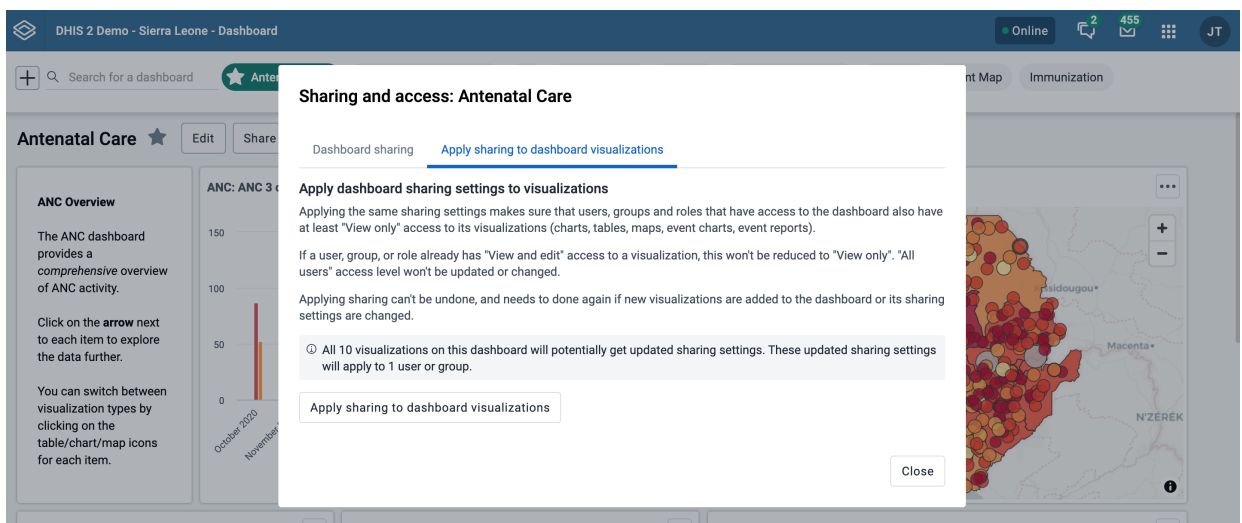


You can provide users with the url of the dashboard, allowing them to navigate directly to the dashboard. To get the dashboard url, just open the dashboard in view mode, and copy the browser url. For example, the url to the Antenatal Care dashboard in play.dhis2.org/dev is:

<https://play.dhis2.org/dev/dhis-web-dashboard/#/nghVC4wtyzi>

Cascade sharing of visualizations on the dashboard

To ensure that all charts, maps and tables on the dashboard are shared with the chosen users and user groups, click on the **Apply sharing to dashboard items** button.



Using the Data Visualizer app



Creating and editing visualizations

When you open the data-visualizer app from the dhis2 menu, you are presented with a blank slate and you can start creating your visualization right away.

The screenshot displays the DHIS 2 Demo - Sierra Leone - Data Visualizer interface. The top navigation bar includes 'Update', 'File', 'Options', and 'Download'. The left sidebar is divided into sections: 'Filter dimensions' (with a search box), 'MAIN DIMENSIONS' (Data, Period, Organisation Unit), 'OTHER DIMENSIONS' (Assigned Categories), and 'YOUR DIMENSIONS' (Area, Commodities, Diagnosis, Donor, EPI/nutrition age, Facility Ownership, Facility Type, Funding Agency, Gender, HIV age, Implementing Partner, Location Fixed/Outreach, Location Rural/Urban, Main data element groups, Morbidity Age, Morbidity/Mortality, PMTCT, Pregnant/Non-pregnant, Project, Referrals Age, Rural and Urban, Target vs Result, Tracker-based data). The main area shows a 'Series' dropdown set to 'Data', a 'Filter' dropdown set to 'Organisation Unit: 1 selected', and a 'Category' dropdown set to 'Period: 1 selected'. Below the main area, there are two informational boxes: 'Getting started' with three bullet points, and 'Your most viewed charts and tables' with a list of six chart titles.

Getting started

- All dimensions that you can use to build visualizations are shown in the left sidebar
- Add dimensions to the layout above
- Click a dimension to add or remove items

Your most viewed charts and tables

- Immunization: Fully immunized by districts and last 12 m stacked
- ANC: ANC IPT 1 Coverage last 12 months districts
- IDSR: Disease Week 1-12 Sierra Leone
- ANC: 1 and 3 coverage Yearly
- ANC: ANC by area last 12 months
- HIV: 4. Care data indicators at district

Select visualization type

Select the desired visualization type from the selector in the upper left corner. For each visualization type there is a brief description with suggestions about where to use the main dimensions in the layout.

DHIS 2 Demo - Sierra Leone - Data Visualizer

Column
Update
File
Options
Download

Column
Compare sizes of related elements vertically. Recommend period as filter.

Stacked column
Compare parts of a whole against related elements vertically. Recommend data or org. unit as series.

Bar
Compare sizes of related elements horizontally. Recommend period as filter.

Stacked bar
Compare parts of a whole against related elements horizontally. Recommend data or org. unit as series.

Line
Track or compare changes over time. Recommend period as category.

Area
Track or compare changes over time. Recommend period as category.

Stacked area
Track or compare parts of a whole over time. Recommend data as series and period as category.

Pie
Compare parts of a whole at a single point in time. Recommend period as filter.

Radar
Compare several items against multiple variables.

Gauge
Compare a percentage indicator against a 100% scale. Recommend period as filter.

Year over year (line)
Compare changes over time between multiple time periods.

Year over year (column)
Compare changes over time between multiple time periods.

Single value
Display a single value. Recommend relative period to show latest data.

Scatter
View the relationship between two data items at a place or time. Recommended for finding outliers.

Open as Map
Visually plot data on a world map. Data elements use separate map layers.

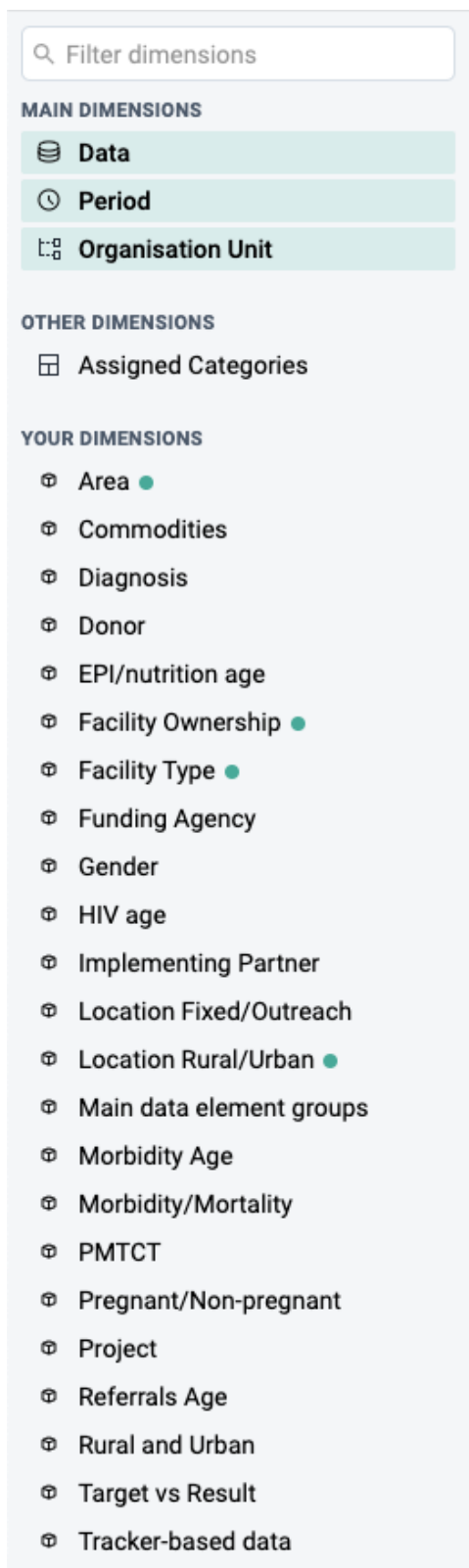
Visualization type	Description
Column	<p>Displays information as vertical rectangular columns with lengths proportional to the values they represent.</p> <p>Example: comparing performance of different districts.</p> <p>Layout restrictions: exactly 1 dimension as series, exactly 1 dimension as category.</p>
Stacked column	<p>Displays information as vertical rectangular columns, where bars representing multiple categories are stacked on top of each other.</p> <p>Example: displaying trends or sums of related data elements.</p> <p>Layout restrictions: same as Column.</p>
Bar	Same as Column, only with horizontal bars.
Stacked bar	Same as Stacked column, only with horizontal bars.
Line	Displays information as a series of points connected by straight lines. Also referred to as time series.

Visualization type	Description
	<p>Example: visualizing trends in indicator data over intervals of time.</p> <p>Layout restrictions: same as Column.</p>
Area	<p>Is based on a line (above), with the space between the axis and the line filled with colors and the lines stacked on top of each other.</p> <p>Example: comparing the trends of related indicators.</p> <p>Layout restrictions: same as Column.</p>
Stacked area	<p>Same as Area, but the areas of the various dimension items are stacked on top of each other.</p> <p>Example: comparing the trends of related indicators.</p> <p>Layout restrictions: same as Area.</p>
Pie	<p>Circle divided into sectors (or slices).</p> <p>Example: visualizing the proportion of data for individual data elements compared to the total sum of all data elements.</p> <p>Layout restrictions: exactly 1 dimension as series, has no category.</p>
Radar	<p>Displays data on axes starting from the same point. Also known as spider chart.</p> <p>Layout restrictions: same as Column.</p>
Gauge	<p>Semi-circle which displays a single value, typically out of 100% (start and end values are configurable).</p> <p>Layout restrictions: exactly 1 dimension with exactly 1 item as series, data dimension is locked to series.</p>
Year over year (line)	<p>Useful when you want to compare one year of data to other years of data. Based on calendar years.</p> <p>Layout restrictions: period dimension is disabled.</p>
Year over year (column)	<p>Same as Year over year (line), only with columns.</p>
Single value	<p>Displays a single value in a dashboard friendly way. If the dimension displayed has an indicator type assigned, a % symbol or a string (per thousand, per hundred thousand, etc...) is appended to the value.</p> <p>Layout restrictions: same as Gauge.</p>
Pivot table	<p>Summarizes the data of a more extensive table and might include sums, averages, or other statistics, which the pivot table groups together in a meaningful way.</p>

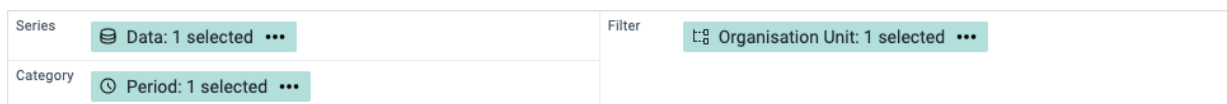
Visualization type	Description
	Layout restrictions: none.
Scatter	Scatter plots enable users to chart organisational units as points against two variables for a single fixed or relative period. Layout restrictions: exactly 1 item each as vertical and horizontal, data dimension is locked to vertical and horizontal, organisation unit is locked to points.

Select dimensions

From the dimensions menu on the left you can select the dimensions you want to show in your visualization, including data, period, organisation units and dynamic dimensions. These can be added by clicking on a dimension, by dragging and dropping a dimension to the layout area or by hovering over a dimension and using on its context menu (three dots).



Just like in the dimensions menu, in the layout area you can also change the selections by clicking on a dimension, dragging and dropping a dimension or by using a dimension's context menu (three dots).



- **Series:** A series is a set of continuous, related elements (for example periods or data elements) that you want to visualize in order to emphasize trends or relations in its data. Also known as Columns for Pivot table visualizations.
- **Categories:** A category is a set of elements (for example indicators or organisation units) for which you want to compare its data. Also known as Rows for Pivot table visualizations.
- **Filter:** The filter selection will filter the data displayed in the visualization. Note that if you use the data dimension as filter, you can only specify a single indicator or data set as filter item, whereas with other dimension types you can select any number of items.

Select dimension items

A dimension refers to the elements that describe the data values in the system. There are three main dimensions in the system:

- **Data:** Includes data elements, indicators and datasets (reporting rates), describing the phenomena or event of the data.
- **Periods:** Describes when the event took place.
- **Organisation units:** Describes where the event took place.

Data Visualizer is highly flexible in terms of allowing you to use these dimensions as series, categories and filter.

To select items for a dimension, open the dimension modal window by clicking on a dimension. This window will also be opened automatically when adding a dimension without selected items to the layout. Select which items to add to the visualization by double-clicking an item or by selecting an item with a single click and using the arrows in the middle. The order of appearance will be the same as the order in which they are selected. Selected items can be reordered by dragging and dropping them in the Selected section.

Select data items

When selecting data items, there are different ways to filter the displayed items. By using the search field at the top, a global search by item name is performed across the currently selected **Data Type**. By selecting a **Data Type** from the dropdown, items can be filtered by type and subtype, where the subtype available depends on the selected data type. The name search and the type/subtype filtering can be combined as well for a more detailed filter. The type of each displayed item is indicated by a corresponding icon on the item. By hovering over an item, the name of the type can be viewed as well.

Data

Data Type

- Accute Flaccid Paralysis (Deaths < 5 yrs)
- Acute Flaccid Paralysis (AFP) follow-up
- Acute Flaccid Paralysis (AFP) new
- Acute Flaccid Paralysis (AFP) referrals
- Additional medication
- Additional notes related to facility
- Age at visit
- Age at visit - calc from days
- Age in years
- Age of LLINs
- Albendazole given at ANC (2nd trimester)
- All access routes are clearly marked and safe
- All other follow-ups
- All other new

Selected Items

No items selected

Select periods

When selecting a Period you have the option to choose between fixed periods and relative periods. These can also be combined. Overlapping periods are filtered so that they only appear once. For relative periods the names are relative to the current date, e.g. if the current month is March and **Last month** is selected, the month of February is shown in the visualization.

Period

Relative periods Fixed periods

Period type

Months ▼

- This month
- Last month
- Last 6 months
- Last 12 months
- Months this year

Selected Periods

- Last 3 months

➡
➔
⬅
⬅

↑
↓

Hide
Update

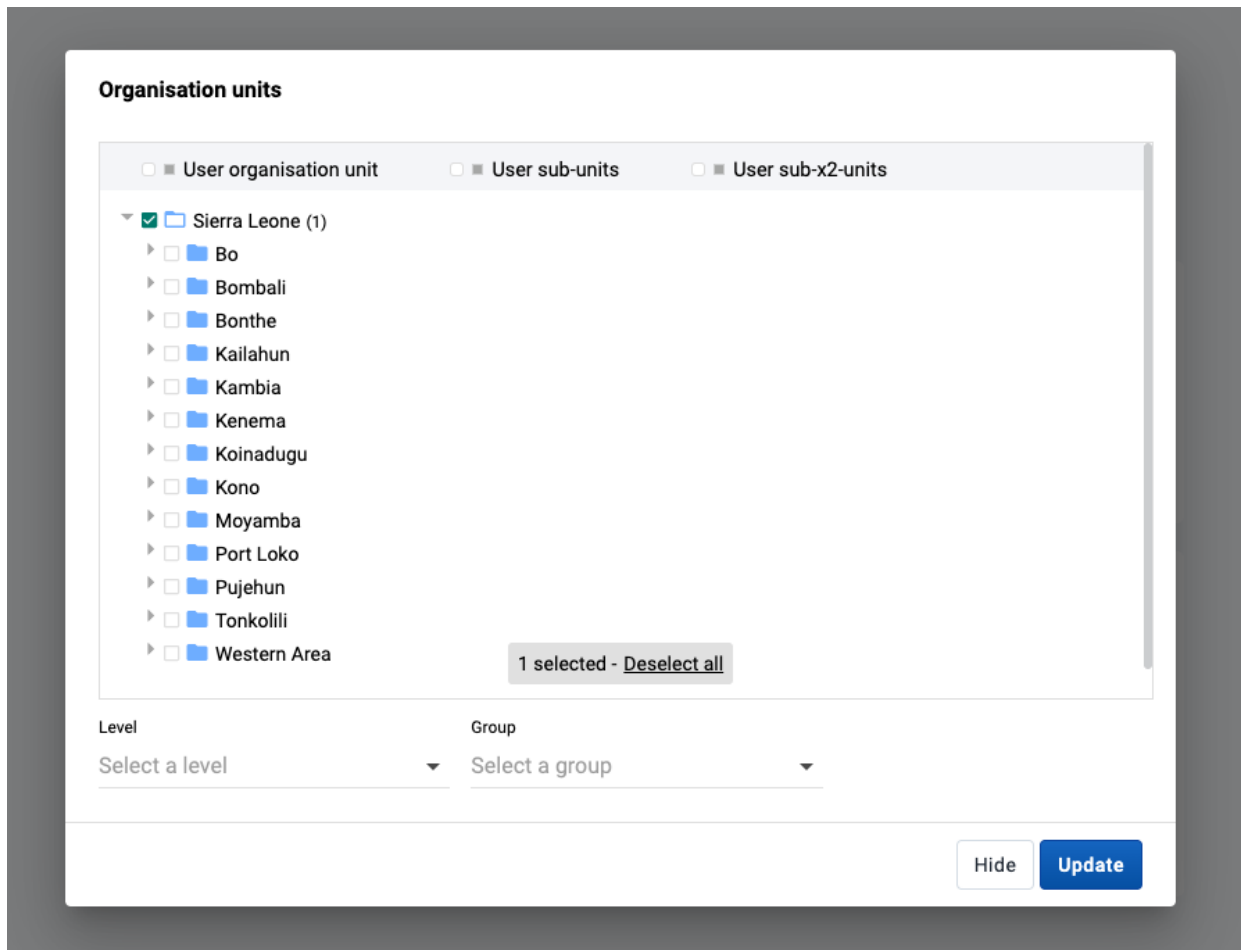
Select organisation units

The organisation units dialog is flexible, offering essentially three ways of selecting organisation units:

- **Explicit selection:** Use the **tree** to explicitly select the organisation units you want to appear in the visualization. If you right-click on an organisation unit you can easily choose to select all org units below it.
- **Levels and groups:** The **Level** and **Group** dropdowns are a convenient way to select all units in one or more org unit groups or at specific levels. Example: select *Chieftdom* (level 3) to get all org units at that level.

Please note that as soon as at least one level or group has been selected the org unit tree now acts as the boundary for the levels/groups. Example: if you select *Chieftdom* (level 3) and *Kailahun* org unit (at level 2) in the tree you get all chieftdom units inside Kailahun district.

- **The user's organisation units:**
- **User organisation unit:** This is a way to dynamically select the org units that the logged in user is associated to.
- **User sub-units:** Selects the sub-units of the user organisation unit.
- **User sub-x2-units:** Selects the units two levels below the user organisation unit.



Select dynamic dimensions

When selecting a dynamic dimension, either individual or all items can be selected. By default, the **Manually select items** option is selected, which allows for individual items to be picked out of a list, similar to how the **Data** and **Period** dimensions are selected above. To automatically select all items for a dimension, the **Automatically include all items** option can be selected. This will also include any additional items that are added in the future if the available dimension items are updated.

Area

- Automatically include all items
Select all Area items. With this option, new items added in the future will be automatically included.
- Manually select items...

- Eastern Area
- Northern Area
- Southern Area
- Western Area

→

→

←

←

Selected Items

No items selected

↑ ↓

Hide

Add to Series

Two category charts

Most chart visualization types can show two categories. Switching from Pivot Table to Column, Bar, Area (and their stacked versions) and Line is keeping the first two dimensions in Category, any additional dimension is moved to Filter. The labels for the first dimension in Category are shown at the top of the chart, and the ones for the second dimension at the bottom. The resulting visualization is composed of separate charts, one for each item in the first dimension.

Series: Data: 2 selected Filter: Organisation Unit: 1 selected

Category: Facility Type: 2 selected
Period: 1 selected

Unsaved visualization



Change the display of your visualization

The display of a visualization can be changed by enabling/disabling and configuring several options. Each visualization type can have a different set of available options. The options are organised in tabs in the **Options dialog** and in sections within each tab.

1. Click **Options** to open the **Options dialog**.
2. Navigate the tabs in the dialog to see the available options.
3. Configure the desired options as required.
4. Click **Update** to apply the changes to the visualization.

List of available options

Option	Description
	Data tab
Aggregation type	Defines how the data elements or indicators will be aggregated within the visualization. Some of the

Option	Description
	aggregation types are By data element, Count, Min and Max.
Base line	Displays a horizontal line at the given domain value. Useful for example when you want to visualize how your performance has evolved since the beginning of a process.
Column sub-totals	Displays sub-totals in a Pivot table for each dimension. If you only select one dimension, sub-totals will be hidden for those columns. This is because the values will be equal to the sub-totals.
Column totals	Displays total values in a Pivot table for each column, as well as a total for all values in the table.
Cumulative values	Displays cumulative values in Column, Stacked column, Bar, Stacked bar, Line and Area visualizations
Custom sort order	Controls the sort order of the values.
Dimension labels	Shows the dimension names as part of a Pivot table.
Hide empty categories	Hides the category items with no data from the visualization. Before first: hides missing values only before the first value After last: hides missing values only after the last value Before first and after last: hides missing values only before the first value and after the last value All: hides all missing values This is useful for example when you create Column and Bar visualizations.
Hide empty columns	Hides empty columns from a Pivot table. This is useful when you look at large tables where a large portion of the dimension items don't have data in order to keep the table more readable.
Hide empty rows	Hides empty rows from a Pivot table. This is useful when you look at large tables where a large portion of the dimension items don't have data in order to keep the table more readable.
Number type	Sets the type of value you want to display in a Pivot table: Value, Percentage of row or Percentage of column. The options Percentage of row and Percentage of column mean that you'll display values as percentages of row total or percentage of column total instead of the aggregated value. This is useful when you want to see the contribution of data elements, categories or organisation units to the total value.
Only include completed events	

Option	Description
	Includes only completed events in the aggregation process. This is useful for example to exclude partial events in indicator calculations.
Row sub-totals	Displays sub-totals in a Pivot table for each dimension. If you only select one dimension, sub-totals will be hidden for those rows. This is because the values will be equal to the sub-totals.
Row totals	Displays total values in a Pivot table for each row, as well as a total for all values in the table.
Skip rounding	Skips the rounding of data values, offering the full precision of data values. Can be useful for finance data where the full dollar amount is required.
Stacked values add up to 100%	Displays 100 % stacked values in Stacked column and Stacked bar visualizations.
Target line	Displays a horizontal line at the given domain value. Useful for example when you want to compare your performance to the current target.
Trend line	Displays the trend line that visualizes how your data evolves over time. For example if performance is improving or deteriorating. Useful when periods are selected as category.
Value labels	Shows the values above the series in the visualization.
	Axes tab
Axis range	Defines the maximum and minimum value that will be visible on the range axis.
Axis title	Type a title here to display a label next to the x or y axis. Useful when you want to give context information to the visualization, for example about the unit of measure. Auto generated from axis items provides a title based on the content of the axis. None removes the title. Custom allows you to type a custom title.
Decimals	Defines the number of decimals that will be used for range axis values.
Steps	Defines the number of ticks that will be visible on the range axis.
	Legend tab
Use legend for chart colors	Applies a legend to the visualization items, which is a value-based color for each item. The legends themselves are configured in the Maintenance app.
Legend type	Controls which legend is applied. Use pre-defined legend per data item applies a legend to each data element or indicator individually, based on the legend assigned to each

Option	Description
	<p>one in the Maintenance app.</p> <p>Select a single legend for entire visualization applies a single legend to all data items, chosen in a drop-down list of available legends.</p>
Legend style	<p>Controls where the color from the legend is applied, either to the text or the background. You can use this option for scorecards to identify high and low values at a glance. Not applicable for Single Value, Column or Bar visualizations.</p>
Show legend key	<p>Displays a key for the legend on the right side of the visualization, to indicate the value ranges and their respective color. If the visualization is added to a dashboard, this option can also be toggled from the top right corner of the dashboard item.</p>
	Series tab
	<p>Options for adding more axes and changing how different series are displayed are set in this tab. Please see a detailed description of how this works in the corresponding sections below.</p>
	Style tab
Digit group separator	<p>Controls which character to use to separate groups of digits or "thousands". You can set it to Comma, Space or None.</p>
Display density	<p>Controls the size of the cells in a Pivot table. You can set it to Comfortable, Normal or Compact. Compact is useful when you want to fit large tables into the browser screen.</p>
Display organisation unit hierarchy	<p>Shows the name of all ancestors for organisation units, for example "Sierra Leone / Bombali / Tamabaka / Sanya CHP" for "Sanya CHP".</p> <p>The organisation units are then sorted alphabetically which will order the organisation units according to the hierarchy.</p> <p>When you download a pivot table with organisation units as rows and you've selected Display organisation unit hierarchy, each organisation unit level is rendered as a separate column. This is useful for example when you create Excel pivot tables on a local computer.</p>
Fix column headers to top of table	<p>Freezes row headers in Pivot Tables so they are always visible when scrolling the table content.</p>
Fix row headers to left of table	<p>Freezes column headers in Pivot Tables so they are always visible when scrolling the table content.</p>
Font size	<p>Controls the size of a Pivot table text font. You can set it to Large, Normal or Small.</p>
Chart/Table title	<p>Controls the title that appears above the visualization.</p> <p>Auto generated uses the default title generated</p>

Option	Description
	<p>from the visualization's dimensions/filters. None removes the title. Custom allows you to type a custom title.</p>
Chart/Table subtitle	<p>Controls the subtitle that appears above the visualization. Auto generated uses the default subtitle generated from the visualization's dimensions/filters. None removes the subtitle. Custom allows you to type a custom subtitle.</p>
Show legend key	Toggles the legend on and off leaving more room for the visualization itself.
No space between bars/columns	Removes the space between the columns or bars in the visualization. Useful for displaying the visualization as an EPI curve.
Value labels	Shows the values above the series in the visualization.
Color set	Controls the colors used in the chart. A list of available color sets is shown with a preview of the colors. There is also a "Mono patterns" option which uses colored patterns instead of solid colors.
	Limit values tab
Limit minimum/maximum values	<p>Allows for the data to be filtered on the server side. You can instruct the system to return only records where the aggregated data value is equal, greater than, greater or equal, less than or less or equal to certain values. If both parts of the filter are used, it's possible to filter out a range of data records.</p>
	Parameters tab
Custom sort order	Controls the sort order of the values.
Include cumulative	Includes a column with cumulative values to a Pivot table.
Include regression	Includes a column with regression values to a Pivot table.
Organisation unit	Controls whether to ask user to enter an organisation unit when creating a standard report in Reports app.
Parent organisation unit	Controls whether to ask user to enter a parent organisation unit when creating a standard report in Reports app.
Reporting period	Controls whether to ask user to enter a report period when creating a standard report in Reports app.
Top limit	Controls the maximum number of rows to include in a Pivot table.
	Outliers tab
Outlier detection method	Outlier analysis is a process that involves identifying anomalous observations in a dataset. In Data Visualizer outliers are detected by first normalizing the data into a linear regression line and then

Option	Description
	analysing each point's distance from regression line. Currently three methods are supported. Interquartile Range (IQR) is based on dividing a dataset into quartiles while Modified z-score is based on the Median Absolute Deviation (MAD). IQR and MAD are considered the two most common robust measures of scale. Standard z-score is based on standard deviation and is therefore considered less robust as it is greatly influenced by outliers.
Threshold factor	The number that the outlier thresholds are multiplied by. Controls the sensitivity of the threshold range. Default factors are 1.5 for IQR and 3 for z-scores.

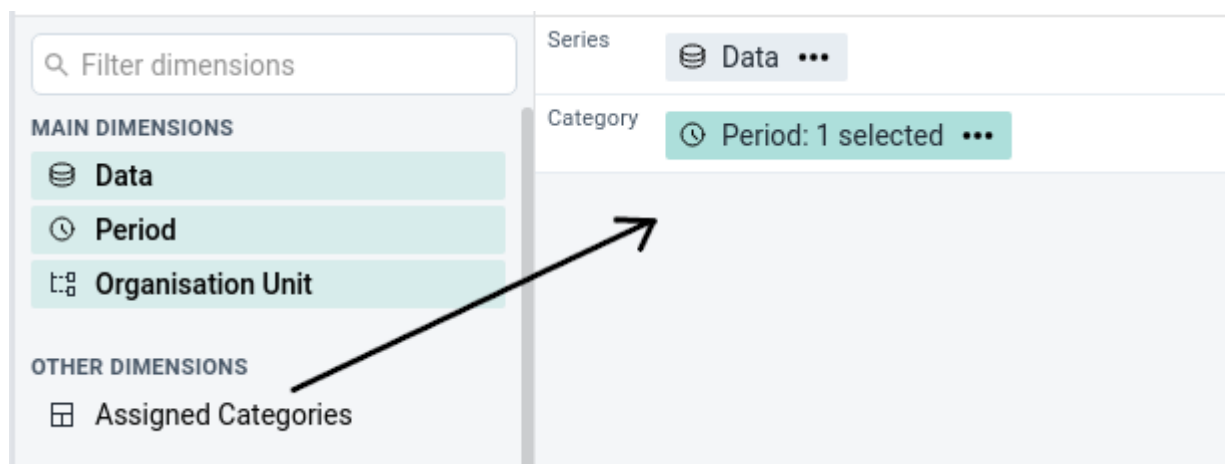
Custom styling for text and series key in charts

The following options can be customized using the text styling tool: Chart title, Chart subtitle, Show series key, Target line, Base line, Axis title and Labels for both horizontal and vertical axes. The text styling tool allows to choose a font size, color and italic/bold variants. It's also possible to choose the position of the text.



Adding Assigned Categories

Assigned Categories is a composite dimension that represents associated category option combinations to the selected data element's category combination. This can be added by dragging the **Assigned Categories** dimension from the left side dimensions menu and into the visualization layout:



Another way of adding assigned categories is by accessing the **Add Assigned Categories** option from the Data dimension's context menu (not available for Gauge, Year over year or Single value).

Adding more axes

When combining data with different measurement scales you will get a more meaningful visualization by having more than a single axis. For Column, Bar, Area and Line you can do so by clicking the

Series tab in the Options dialog. If the option is disabled, make sure that the Data dimension is on the Series axis and that at least two items have been added.

Four axes are available, two on the left side (axis 1 and 3) of the chart and two on the right side (axis 2 and 4). Each axis has a different color and the chart items are going to be colored accordingly.

Note

When multiple axes are in use, the Color set option in the Style tab will be disabled. The Target line and Base line options are available on the Axes tab per axis.

Options

Data Axes **Series** Style

Data item	Axis 1	Axis 2	Axis 3	Axis 4
ANC 1 Coverage	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ANC 2 Coverage	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ANC 3 Coverage	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ANC => 4 Coverage	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ANC 1-3 Dropout Rate	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Using multiple visualization types

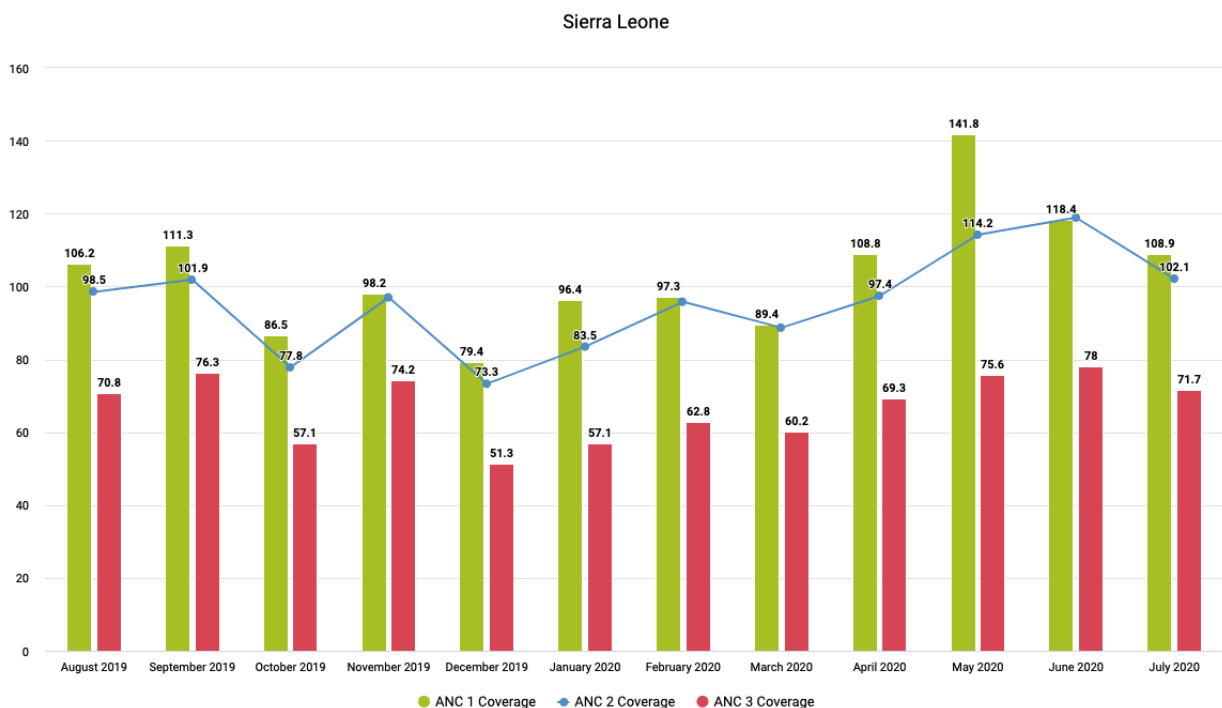
It's possible to combine a Column chart with Line items and vice versa. This is done by clicking the **Series tab** in the Options dialog and changing the Visualization type. This can also be combined with using multiple axes (as described in the section above).

Options

Data Axes **Series** Style

Data item	Visualization type	Axis 1	Axis 2	Axis 3	Axis 4
ANC 1 Coverage	<input checked="" type="radio"/> <input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ANC 2 Coverage	<input type="radio"/> <input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ANC 3 Coverage	<input checked="" type="radio"/> <input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This results in a chart that combines the Column and Line types.



Data drilling

This feature is enabled for the Pivot Table, Column, Stacked column, Bar and Bar stacked visualization types and allows to drill in the data by clicking on a value cell / column / bar in the visualization. A contextual menu opens with various options.

You can drill the data by organisation unit, meaning navigating up and down the org unit tree. The data drill affects the current dimension selection in the layout area. The organisation unit dimension must thus be present on either the Columns / Series axis or the Rows / Category axis for the drill feature to be enabled.

15	132.8	123.3
17	144.4	118.4
32	148.5	132.1
16	125.1	115.6
11	91.2	94.5
17	106.2	98.1
13	93.8	90.8
16	100.7	154
36	165.8	204.3
39	143.2	145.2

Data drilling in a pivot table



Data drilling in a column chart

Manage saved visualizations

Saving your visualizations makes it easy to find them later. You can also choose to share them with other users or display them on a dashboard.

Open a visualization

1. Click **File > Open**.
2. Enter the name of a visualization in the search field, or click the < and > arrows to navigate between different pages. The result can also be filtered by type and owner by using the corresponding menus in the top right corner.
3. Click the name of the one you want to open.

Save

Search by name All types ▾ All owners ▾

Name ↑	Type	Created	Last updated
ANC: 1-3 dropout rate Yearly		2012-11-05	2017-10-09
ANC: 1-3 trend lines last 12 months		2014-04-16	2015-07-15
ANC: 1-4 visits by districts this year (stacked)		2015-03-26	2015-07-15
ANC: 1-4 visits last 12 months		2014-07-18	2015-07-15
ANC: 1 and 3 coverage Yearly		2016-10-11	2016-10-11
ANC: 1st and 3rd trends Monthly		2012-11-05	2015-07-15
ANC: 1st and 3rd visit coverage by orgunit last year		2014-04-03	2018-05-18
ANC: 1st to 3rd visit drop-out rate by orgunit last year		2014-04-03	2015-07-15
ANC: 4th visit coverage by orgunit last year		2014-04-03	2017-05-16
ANC: 4+ visits by Facility this year		2012-11-05	2017-10-09

1-10 of 269 < >

CLOSE

Save a visualization

1. a) Click **File** > **Save**.
2. Enter a **Name** and a **Description** for your visualization.
3. Click **Save**.

Save visualization as

Name *

Description

Cancel

Save

Rename a visualization

1. Click **File > Rename**.
2. Enter the new name and/or description.
3. Click **Rename**.

Rename visualization

Name *

Description

Cancel

Rename

Delete a visualization

1. Click **File > Delete**.
2. Click **Delete**.

Get the link to the visualization

1. Click **File > Get Link**.

2. The URL can be copied via the browser's context menu that opens when right clicking on the link.

Delete visualization

This visualization will be deleted. Continue?

Cancel

Delete

Visualization interpretations

When viewing a saved visualization, you can expand the interpretations on the right side by clicking on the Interpretations button in the upper right corner. The visualization description will also be shown. The description supports rich text format.

New interpretations can be added by typing in the text field in the bottom right corner. Other users can be mentioned with @username. Start by typing @ plus the first letters of the username or real name and a list of matching users will be displayed. Mentioned users will receive an internal DHIS2 message with the interpretation or comment. Interpretations can also be seen in the **Dashboard** app.


It is possible to format the text with **bold**, *italic* by using the Markdown style markers * and _ for **bold** and *italic* respectively (keyboard shortcuts are also available: Ctrl/Cmd + B and Ctrl/Cmd + I). A limited set of emojis is supported and can be used by typing one of the following character combinations: :) :-) :(:- (:+1 :-1. URLs are automatically detected and converted into a clickable link.

To view the visualization according to the date of a particular interpretation, click on the interpretation or its View button. This will regenerate the visualization with the relevant date, which is indicated next to the visualization title. Clicking on Back to all interpretations will regenerate the visualization with the current date.

To subscribe to the saved visualization, click the bell icon in the upper right corner. You will then receive internal messages whenever another user likes/creates/updates an interpretation in this saved visualization.

> Interpretations

Visualization details ^

No description 

Owner: Tom Wakiki
Created: Nov 5, 2012
Last updated: Oct 9, 2017
Views: 9
Sharing: Public: Read



Interpretations ^

RM

Robert Malai

We can see that the drop-out rate in Kenema is very low while Port Loko and Tonkolili have high vales. This might be because the service provision in Kenema is a lot better. We should also investigate potential missing values which drive up the dropout rates.

Apr 14, 2019 · 1 reply

JT

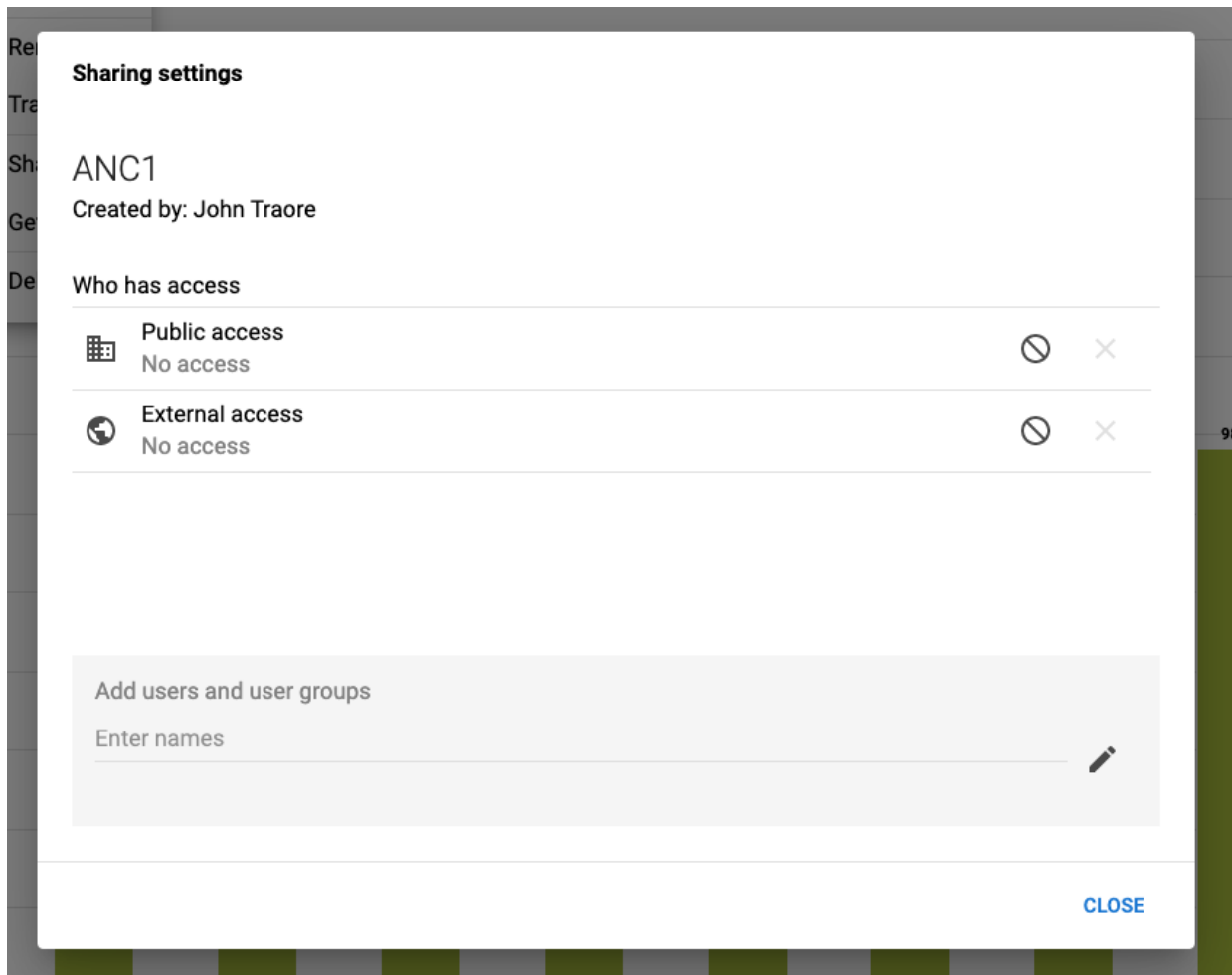
Write an interpretation

Share a visualization

Sharing settings can be accessed by clicking **File > Share**. Change sharing settings for the user groups you want to modify, the available settings are:

- **Can edit and view:** Can view and edit the visualization.
- **Can view only:** Can only view the visualization.
- **No access:** Won't have access to the visualization. This setting is only applicable to **Public access** and **External access**. (Note that to enable access to everyone, both **Public access** and **External access** must be set to allow view.)

New users can be added by searching for them by name under Add users and user groups.



Download

Visualizations can be downloaded using the **Download** menu. All visualization types support Graphics and Plain data source downloads, except for the Pivot table type, which can be downloaded as Table layout and Plain data source.

Graphics download

Downloads an image (.png) or a PDF (.pdf) file to your computer.

Table layout download

Downloads a Excel (.xls), CSV (.csv) or HTML (.html) file to your computer.

Plain data source download

You can download the data source of a visualization in JSON, XML, Excel, CSV, JXRML or Raw data SQL formats with different identification schemes (ID, Code, and Name). The data document uses identifiers of the dimension items and opens in a new browser window to display the URL of the request to the Web API in the address bar. This is useful for developers of apps and other client modules based on the DHIS2 Web API or for those who require a plan data source, for instance for import into statistical packages.

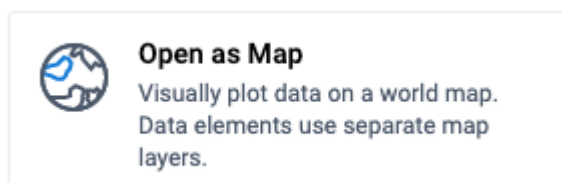
Available formats

Format	Action	Description
JSON	Click JSON	

Format	Action	Description
		Downloads JSON format based on the ID, Code or Name property.
XML	Click XML	Downloads XML format based on the ID, Code or Name property.
Microsoft Excel	Click Microsoft Excel	Downloads Microsoft Excel format based on the ID, Code or Name property.
CSV	Click CSV	Downloads CSV format based on the ID, Code or Name property.
XML data value set	Click Advanced > XML	Downloads the raw data values as XML, as opposed to data which has been aggregated along various dimensions.
JSON data value set	Click Advanced > JSON	Downloads the raw data values as JSON, as opposed to data which has been aggregated along various dimensions.
JRXML	Click Advanced > JRXML	Produces a template of a Jasper Report which can be further customized based on your exact needs and used as the basis for a standard report in DHIS 2.
Raw data SQL	Click Advanced > Raw data SQL	Provides the actual SQL statement used to generate the data visualization. You can use it as a data source in a Jasper report, or as the basis for a SQL view.

See visualization as map

To see how a visualization would look on map, select the **Open as Map Visualization** type after you're finished building your visualization.



Using the Line Listing app

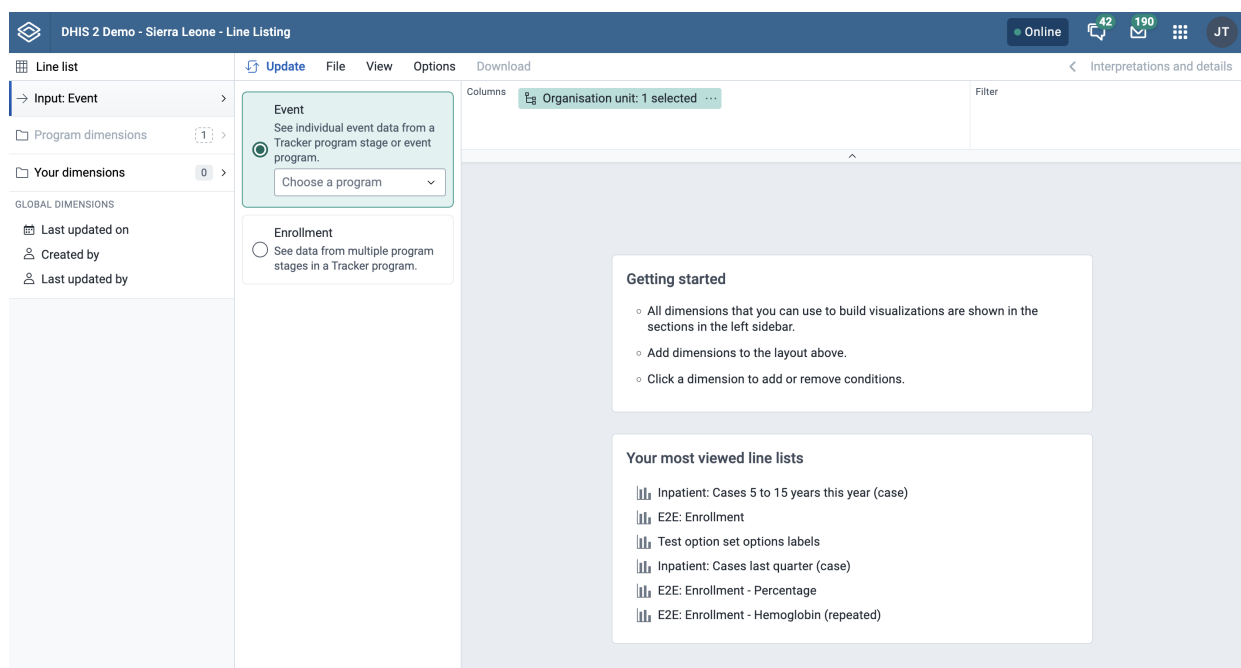
The Line Listing app is a new app that replaces the line listing functionality in the Event Reports app, but also offers additional functionality.

NOTE

There will be a forward compatibility with the Event Reports app, which means that you can open the existing event reports of type line list in the Line Listing app, but you cannot save changes to them in the Line Listing app.

Creating and editing a line list

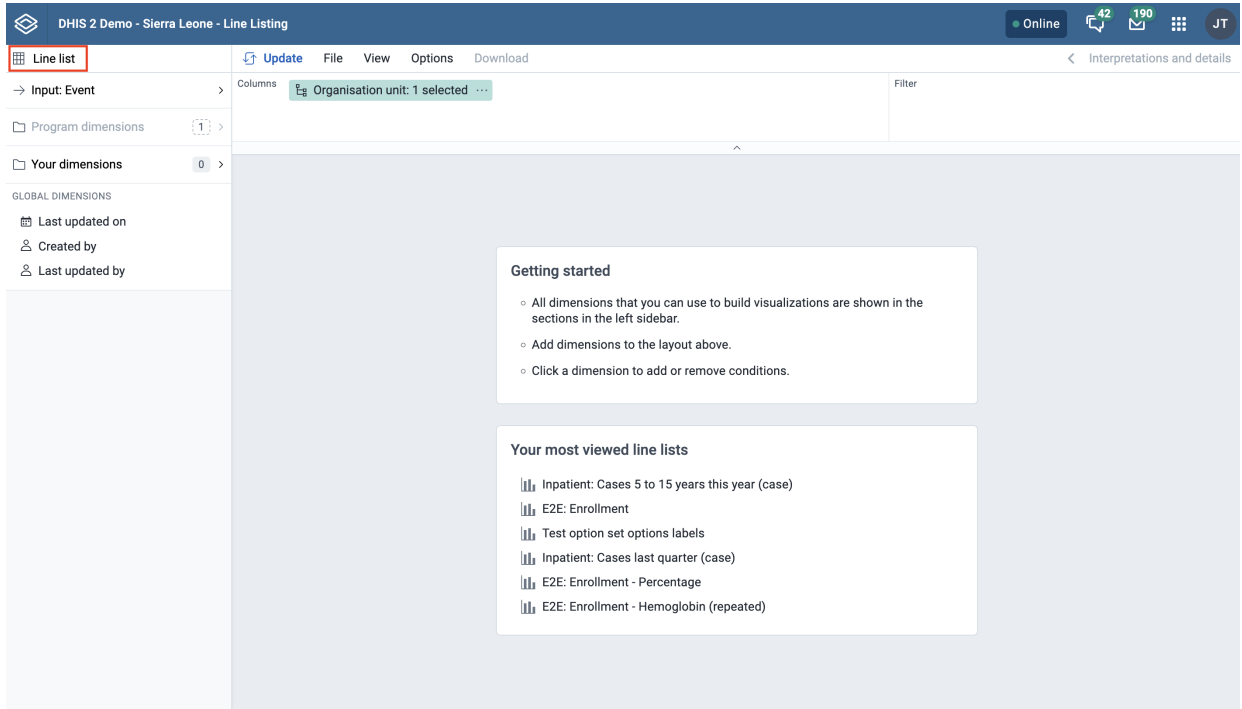
When you open the Line Listing app from the DHIS2 menu, you are presented with a blank slate, and you can start creating a line list.



Creating a line list

Line list

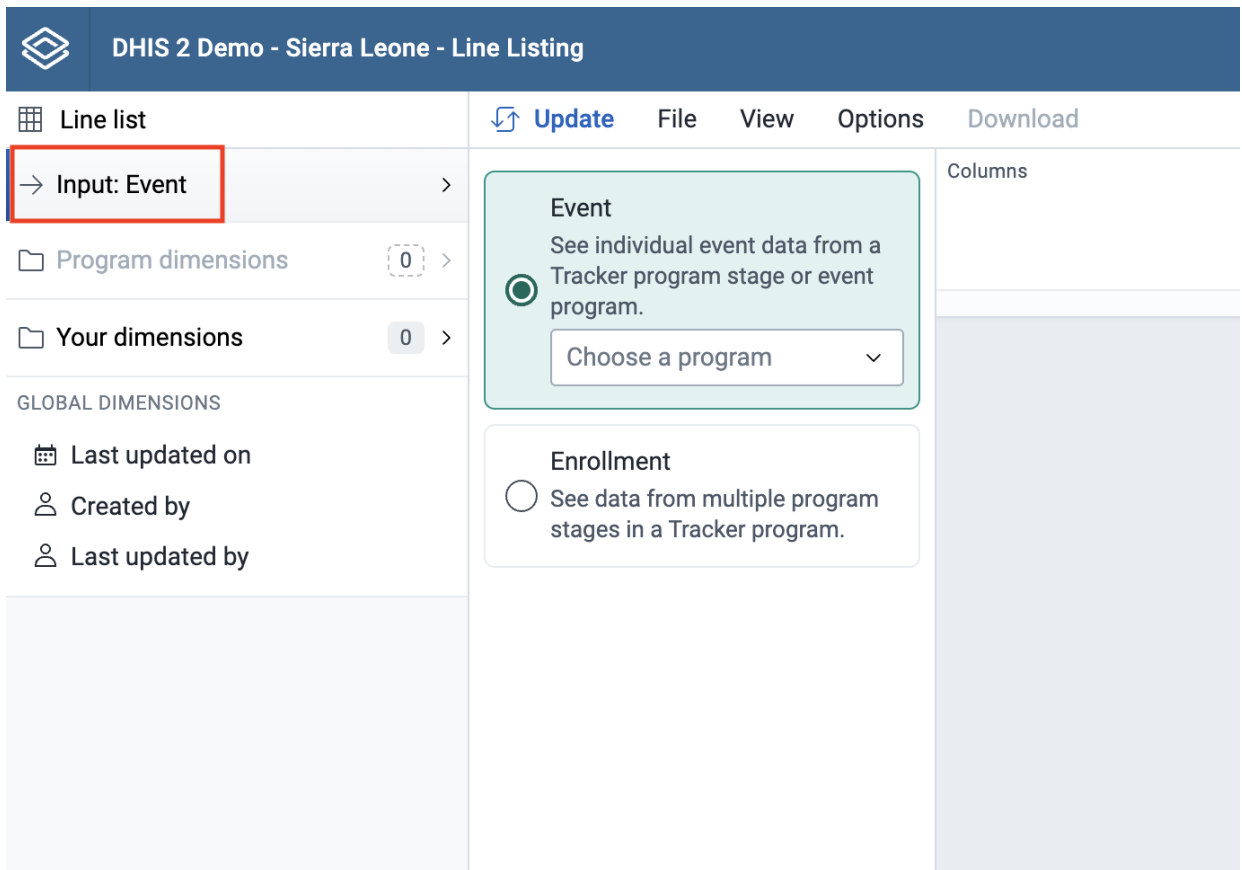
In the Line Listing app, you currently only have one type of selection which is Line list.



Input

(This is the same as you see in the Event Reports app). When you open the Input tab you will see below two options:

- Event (see individual event data from an event program or a tracker program stage)
- Enrollment (see data from multiple stages in a tracker program)



Program Dimensions

(In the Event Reports app these are called data dimensions.)

The line list will always be based on event or tracker programs and you can do analysis on a range of dimensions. For programs with category combinations, you can use program categories and category option group sets as dimensions.

Tip
 In the Line Listing app, all the dimensions related to a tracker or an event program are present in the program dimension component.

- Choose a program

Select program: All the event and tracker programs will be visible in the drop down.

If you have selected the Event, then for tracker programs you need to select the program stage to get all the data elements, attributes for that particular stage. To be able to select data from multiple stages you need to select "Enrollment" as the input type.

If you select an event program you don't have to select the stage (unlike the Event Reports app).

The screenshot shows the 'Line list' interface. On the left is a sidebar with a grid icon and the title 'Line list'. Below the title are three main sections: 'Input: Event' with a right arrow and 'Child Programme - Birth' below it; 'Program dimensions' with a folder icon, the text 'Program dimensions', a '0' in a grey circle, and a right arrow; and 'Your dimensions' with a folder icon, the text 'Your dimensions', a '0' in a grey circle, and a right arrow. Below these is a section titled 'GLOBAL DIMENSIONS' with three items: 'Last updated on' with a calendar icon, 'Created by' with a person icon, and 'Last updated by' with a person icon. On the right side of the interface, there are menu items: 'Update' with a refresh icon, 'File', 'View', and 'Options'. Below the menu is a large light blue box containing two radio button options. The first option is 'Event', which is selected (radio button is filled), with the description 'See individual event data from a Tracker program stage or event program.' Below this are two dropdown menus: the first is labeled 'Child Programme' and the second is labeled 'Stage Birth'. The second option is 'Enrollment', which is not selected (radio button is empty), with the description 'See data from multiple program stages in a Tracker program.'

If you select Enrollment in the Input tab then all data elements associated with the program will be available from different stages within the program for the purpose of cross stage selection of data elements. Each data element will act as a dimension.

→ **Input: Enrollment** >
Child Programme

📁 **Program dimensions** 0 >

📁 **Your dimensions** 0 >

GLOBAL DIMENSIONS

- 📅 Last updated on
- 👤 Created by
- 👤 Last updated by

PROGRAM DIMENSIONS

- 🏢 Organisation unit
- ✅ Program status
- 📅 Date of enrollment
- 📅 Date of birth

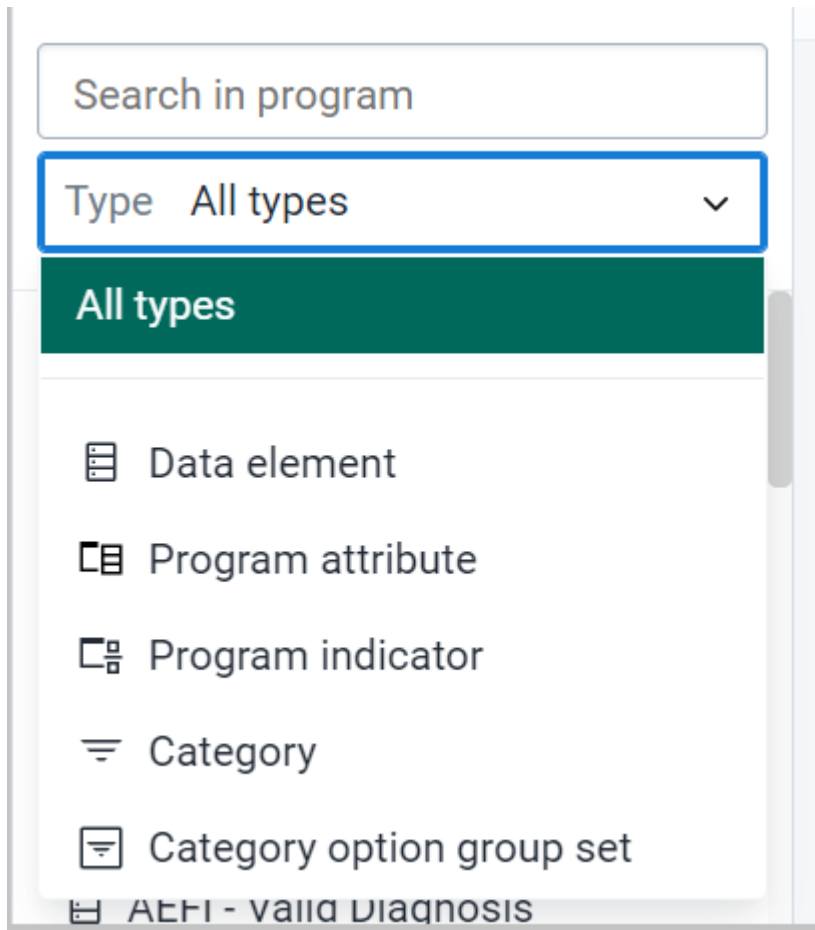
PROGRAM DATA DIMENSIONS

Search data dimensions

Type All types ▼



- 📊 Average weight (g)
- 📊 BCG doses
- 📊 BCG doses low birth weight
- 📊 First name
- 📊 Gender
- 📊 Health immunization score
- 📊 Last name
- 📊 MCH ARV at birth
- 📊 MCH Apgar Score
- 📊 MCH Apgar comment


If you want to filter the data, by data elements, program attribute, program indicators, category, category option group set you can do so by clicking on the dropdown option.











There are multiple ways to add data elements to the layout. They can be added by hovering over the dimension and clicking the plus icon or by dragging and dropping a dimension straight to the layout area.

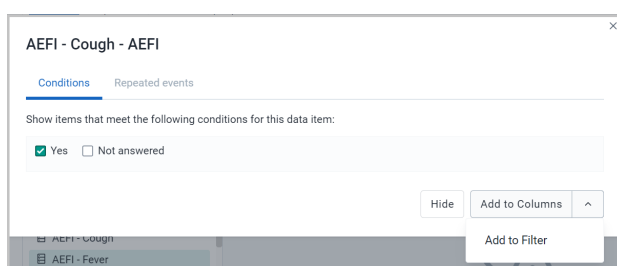
Search data dimensions

Type  Data element 

Stage All 

-  MCH ARV at birth
-  MCH Apgar Score
-  MCH Apgar comment 
-  MCH BCG dose
-  MCH Child ARVs
-  MCH DPT dose
-  MCH HIV Test Type

Alternatively, you can click on the respective data element and then choose to add it in column or filter as shown in below figure.



Each dimension can have criteria (filters). Data elements of the type option set allows for "in" criteria, where multiple options can be selected.

Mode of delivery - Birth details



Show items that meet the following conditions for this data item:

Available options

Filter options

C-Section
Unknown
Vacuum

➔

➔

⬅

⬅

Selected options

Forceps
Normal/Vaginal

Hide

Add to Columns



Numeric values can be compared to filter values using greater than, equal or less than operators. (Optional) For each data element, specify a filter with operators such as "greater than", "in" or "equal" together with a filter value.

Note

The enhancement in this feature is that you can add multiple conditions and there are also different operators which can be used. You can also filter by empty or not empty.

AEFI 1 - 5 years

Show items that meet the following conditions for this data item:

less than (<) 3 Remove

and

greater than (>) 2 Remove

Add another condition

Hide Add to Columns ▼

In the Line Listing app for BOOLEAN type data element, here in the analysis it will show "Yes", "No", "Not answered" instead of 0 and 1 as in the Event Reports app or the Data Visualizer app.



AEFI - Investigation needed - First decision making level

Show items that meet the following conditions for this data item:

Yes No Not answered

Hide

Update

Unsaved visualization

Organisation unit	AEFI 0 - 1 year	Abscess_BCG 0.1	AEFI - Investigation needed	Event date
1008 DH Met	3	0	Yes	2021-09-23
HC Homkong	3	0	Yes	2021-09-22
HC Senlat	3	0	Yes	2021-09-21
HC Namsip	3	0	Yes	2021-09-21
HC Bantao (Viangphan)	3	0	Yes	2021-09-22
HC Nakang	3	0	Yes	2021-08-03
HC Toksaming	3	0	Yes	2021-06-29
DW Fuang	3	0	Yes	2021-09-21
HC Somboun (Vangviang)	3	0	Yes	2021-09-22
HC Naxam	3	0	Yes	2021-09-24
HC Naham	3	0	Yes	2021-09-03
HC Lakkhammai	3	0	Yes	2021-09-07
HC Sanomai	3	0	Yes	2021-09-21
HC Phonkham (Vangviang)	3	0	Yes	2021-07-31
HC Na-ngoua (Beng)	3	0	Yes	2021-09-16

The line list will be displayed as a table with one row per event. Each dimension can be used as a column in the table or as a filter.

Unsaved visualization

AEFI - Specify - Unclassifiable	AEFI - Fever	AEFI - Cough	AEFI - Headache	AEFI 1 - 5 years	AEFI 0 - 1 year	AEFI 18 years - 60 years	Date patient notified the event to the health system
Yes	Yes	Yes	Not answered	0	0	0	2021-08-21
Not answered	Yes	Yes	Yes	0	0	1	2021-08-11
Yes	Yes	Yes	Not answered	0	0	0	2021-07-24
Not answered	Yes	Yes	Not answered	0	0	0	2021-09-07
Not answered	Yes	Yes	Not answered	0	0	1	2021-07-21
Not answered	Yes	Yes	Not answered	0	0	1	2021-08-08
Yes	Yes	Yes	Not answered	0	0	1	2021-10-03
Yes	Yes	Yes	Not answered	0	0	1	2021-10-03

Your Dimension

All **Organisation Unit group sets** are present under **Your dimension** component for further evaluation or analysis.

Main and Program Dimensions

Select Organisation Unit

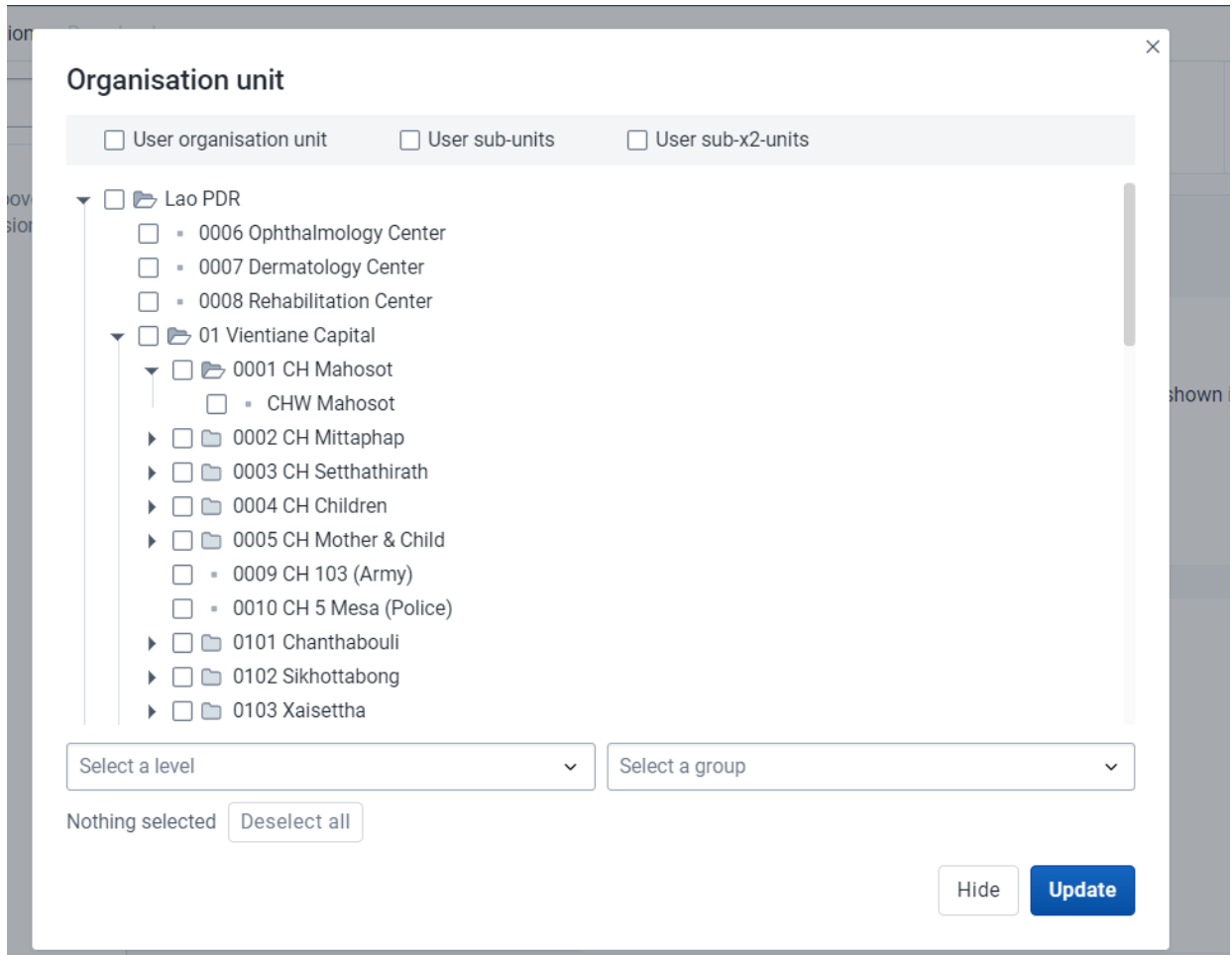
The organisation unit dialog is flexible, offering essentially three ways of selecting organisation units:

- Explicit selection: Use the **tree** to explicitly select the organisation units you want to appear in the visualization. If you right-click on an organisation unit you can easily choose to select all org units below it.
- Levels and groups: The **Level** and **Group** dropdowns are a convenient way to select all units in one or more org unit groups or at specific levels. Example: select *CH Mahosot* (level 3) to get all org units at that level.

NOTE

Please note that as soon as at least one level or group has been selected the org unit tree now acts as the boundary for the levels/groups. Example: if you select *CH Mahosot* (level 3) and *Vientiane Capital* org unit (at level 2) in the tree you get all units inside that district._

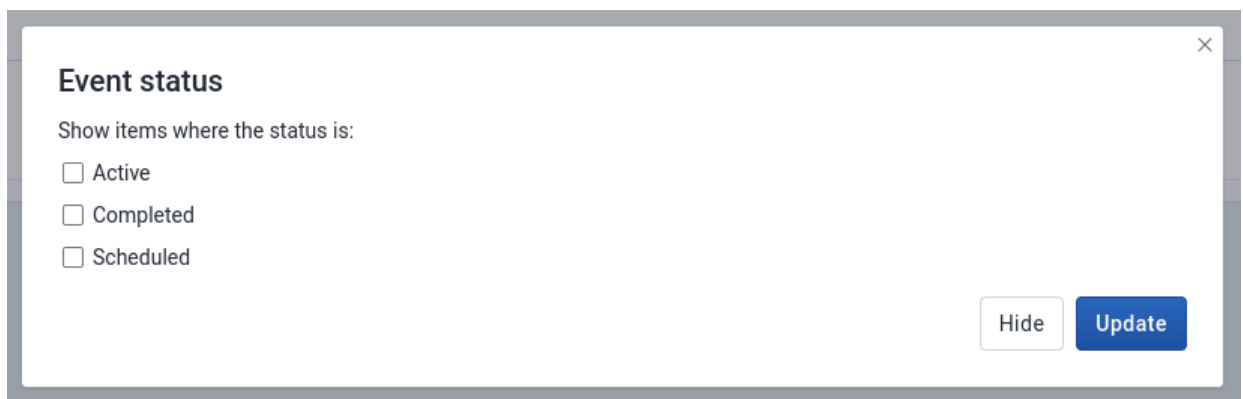
- The user's organisation units:
 - User organisation unit: This is a way to dynamically select the org units that the logged in user is associated with.
 - User sub-units: Selects the subunits of the user organisation unit.
 - User sub-x2-units: Selects the units two levels below the user organisation unit.



Event Status

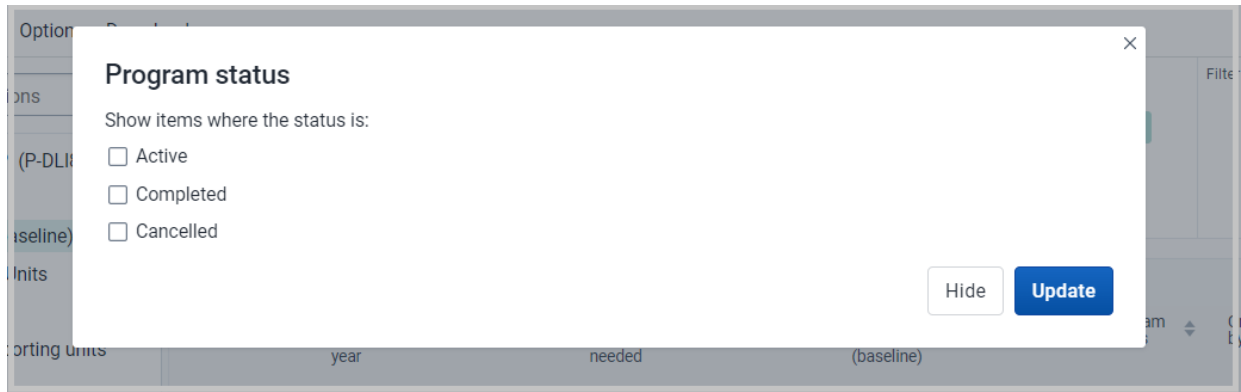
Filters data based on the event status: **Active, Completed, Scheduled.**

You can visualize the data for a particular event status



Program Status

Filters data based on the program status: **Active, Completed or Cancelled.**



Created by / Last updated by

Will display the data based on who created the particular event.

Time Dimensions

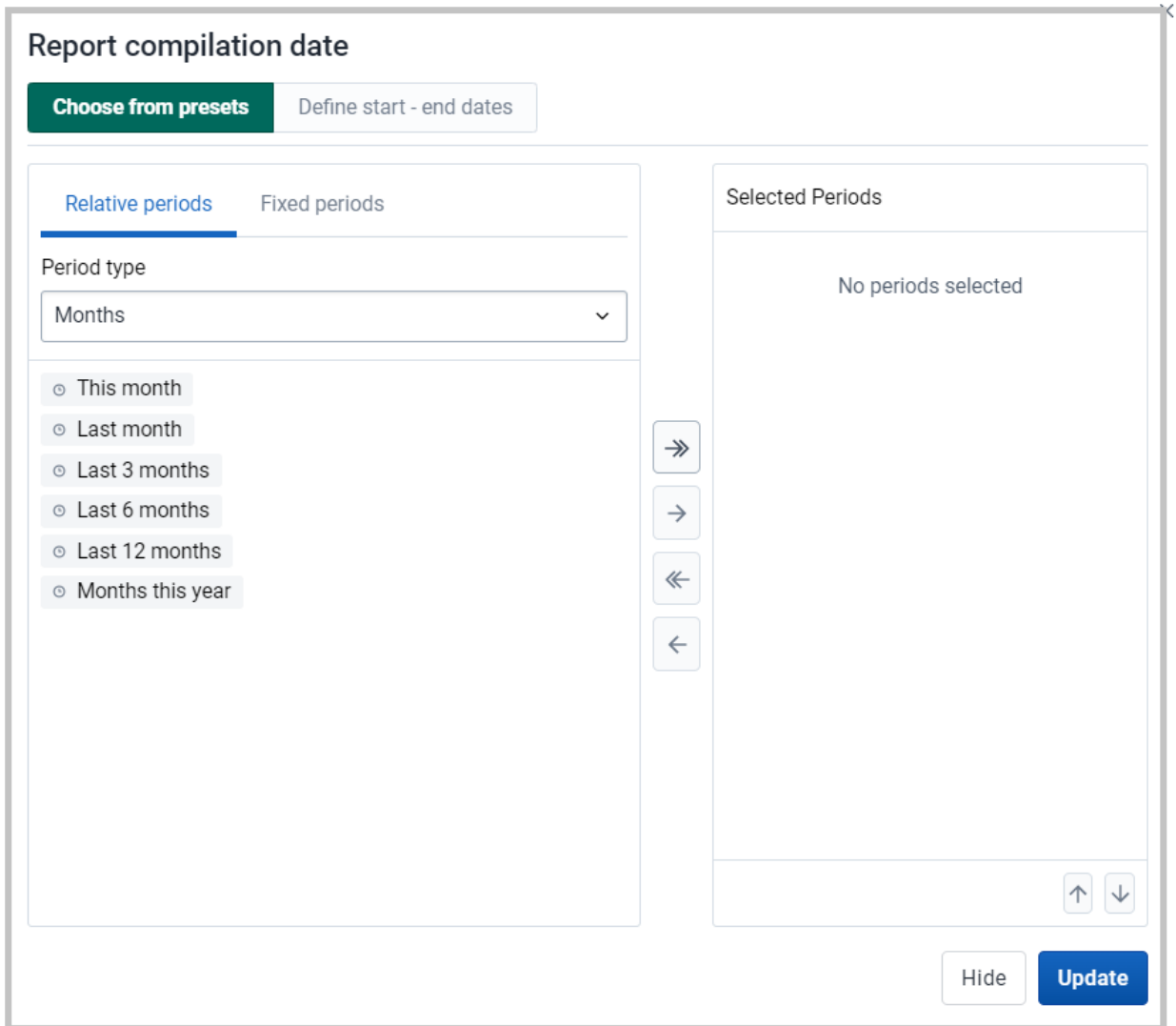
This is a new feature in Line Listing app where you will be able to view the data on the basis of different time dimensions.

- Event date/Report Compilation date
- Date patient notified in the health system.
- Incident date
- Last updated on
- Scheduled date

You can click on the above time dimension to visualize data on different period dimension, a window will open where you can select one or several periods.

You have three period options: relative periods, fixed periods and start/end dates. You can combine fixed periods and relative periods in the same table. You cannot combine fixed periods and relative periods with start/end dates in the same table. Overlapping periods are filtered so that they only appear once.

- Fixed periods: In the **Select period type** box, select a period type. You can select any number of fixed periods from any period type. Fixed periods can for example be "January 2021".
- Relative periods: In the lower part of the **Periods** section, select as many relative periods as you like. The names are relative to the current date. This means that if the current month is March and you select **Last month**, the month of February is included in the visualization. Relative periods have the advantage that it keeps the data in the report up to date as time goes.
- Start/end dates: Next to Choose from presets, select **Start/end dates**. This period type lets you specify flexible dates for the time span in the report.



Column Header

You can sort on all column headers

You can filter the specific column by directly clicking the data elements or attributes at the column and you will be able to sort the data values

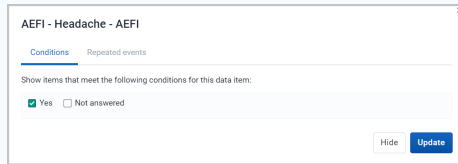
Example

In the below screenshot, we have selected AEFI – Headache.

Unsaved visualization

AEFI - Specify - Unclassifiable	AEFI - Fever	AEFI - Cough	AEFI - Headache	AEFI 1 - 5 years	AEFI 0 - 1 year	AEFI 18 years - 60 years	Date patient notified the event to the health system
Yes	Yes	Yes	Not answered	0	0	0	2021-08-21
Not answered	Not answered	Yes	Yes	0	0	1	2021-08-11
Yes	Yes	Yes	Not answered	0	0	0	2021-07-24
Not answered	Not answered	Yes	Not answered	0	0	0	2021-09-07
Not answered	Not answered	Yes	Not answered	0	0	1	2021-07-21
Not answered	Not answered	Yes	Not answered	0	0	1	2021-08-08
Yes	Yes	Yes	Not answered	0	0	1	2021-10-03
Yes	Yes	Yes	Not answered	0	0	1	2021-10-03

Once we click on AEFI – Headache we will get a dialog box where we need to select the option we want to filter out. In this we have selected “Yes” only.



Once we click on update, we will get the line list with only “Yes” under AEFI – Headache.

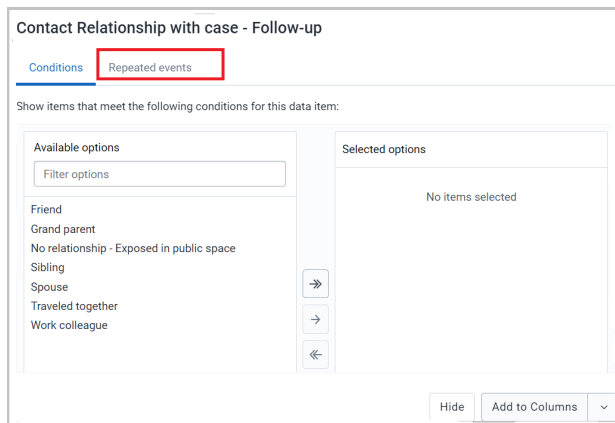
Unsaved visualization

AEFI - Specify - Unclassifiable	AEFI - Fever	AEFI - Cough	AEFI - Headache	AEFI 1 - 5 years	AEFI 0 - 1 year	AEFI 18 years - 60 years	Date patient notified the event to the health system
Not answered	Yes	Yes	Yes	0	0	1	2021-09-05
Not answered	Yes	Yes	Yes	0	0	1	2021-08-07
Not answered	Yes	Yes	Yes	0	0	1	2021-08-11
Not answered	Yes	Yes	Yes	0	0	1	2021-09-20
Not answered	Yes	Yes	Yes	0	0	0	2021-10-05
Not answered	Yes	Yes	Yes	0	0	1	2021-10-05
Not answered	Yes	Yes	Yes	0	0	1	2021-08-13

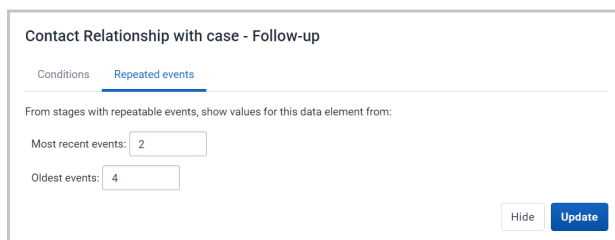
Repeatable Events

This is a new feature in the Line Listing app.

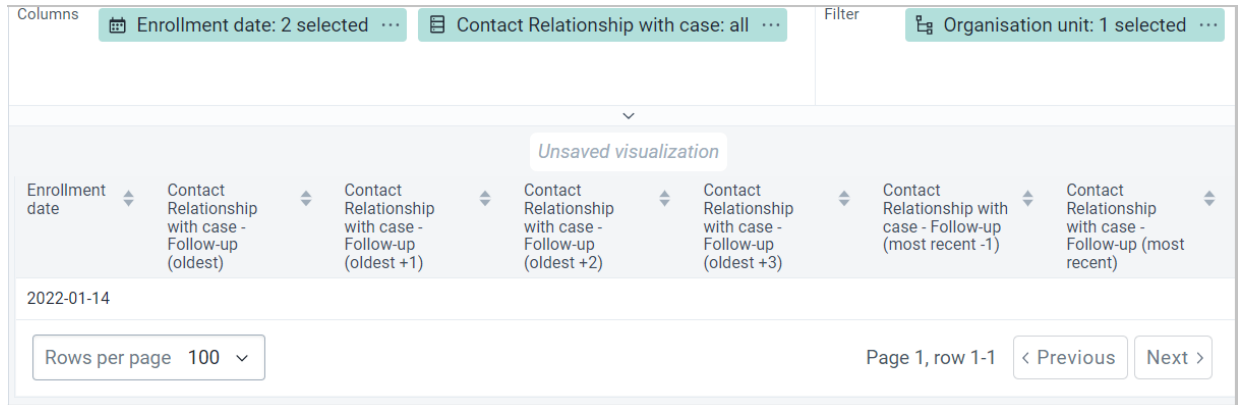
If the program stage has a data element in a repeatable event you can click on the data element and the window will open up where you will be able to see the Repeated event tab



Then, you can define the most recent events and the oldest events you want in the output as displayed below.

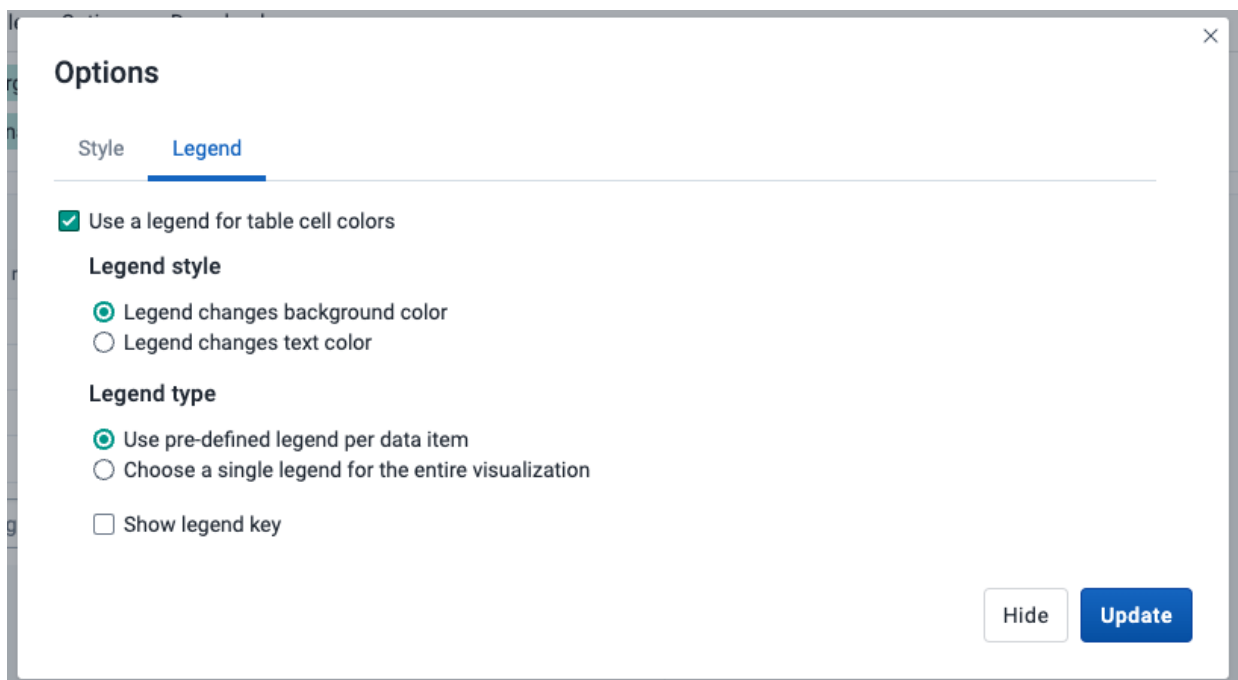


Once you click on update you will be able to visualize the events of this repeatable program stage as shown below.



Applying legend colors

You can apply colors to a visualization by using the legend feature, which can be found under Options -> Legend



Option	Description
Use a legend for table cell colors	Applies a legend to the visualization items, which is a value-based color for each item. The legends themselves are configured in the Maintenance app.
Legend style	Controls where the color from the legend is applied, either to the text or the background. You can use this option for scorecards to identify high and low values at a glance.
Legend type	Controls which legend is applied. Use pre-defined legend per data item applies a legend to each data element or indicator

Option	Description
	individually, based on the legend assigned to each one in the Maintenance app. Select a single legend for entire visualization applies a single legend to all data items, chosen in a drop-down list of available legends.
Show legend key	Displays a key for the legend on the right side of the visualization, to indicate the value ranges and their respective color.

Below is an example of a line list with legend colors applied to the background, per data item.

Update File Options Download

Columns 📅 Report date: 1 selected ... 📏 Height in cm: all ... 📊 Weight in kg: all ...

Unsaved visualiz

Report date	Height in cm	Weight in kg
2021-10-15	115	45
2021-11-23	111	81
2021-09-14	165	26
2021-11-04	103	43
2021-12-10	130	21
2021-11-05	109	34
2021-11-04	142	51
2021-11-03	108	30
2021-10-17	175	22
2021-11-04	138	50
2021-11-29	149	48
2021-09-09	146	58
2021-08-30	137	77
2021-11-22	141	35
2021-12-03	174	57
2021-11-12	163	50
2021-11-15	183	73
2021-12-18	127	68
2021-11-09	182	75
2021-11-15	172	39

Rows per page 100 v

Page 1, row 1-100

< Previous
Next >

Height in cm

- 0 - 100
- 0-<100
- 100 - 120
- 100-<120
- 120 - 140
- 120-<140
- 140 - 160
- 140-<160
- 160 - 180
- 160-<180
- 180 - 200
- 180-<200
- 200+
- 200-<290

Weight in kg

- 0 - 20
- 0-<20
- 20 - 40
- 20-<40
- 40 - 50
- 40-<50
- 50 - 60
- 50-<60
- 60 - 70
- 60-<70
- 70 - 80
- 70-<80
- 80 - 90
- 80-<90
- 90 - 100
- 90-<100
- 100+
- 100-<200

Showing the organisation unit hierarchy

You can show the full hierarchy path for organisation units by enabling the **Show organisation unit hierarchy** option in Options -> Style. When this is enabled, sorting on the organisation unit column will sort the organisation units alphabetically starting from the top level.

Columns Report date: 1 selected Organisation unit: 1 selected Admission Date: all Age in years: 2 conditions Gender: all Mode of Discharge: all Discharge Date: all Filter

Inpatient: Cases 5 to 15 years this year (case) - Edited

Report date	Organisation unit name hierarchy	Admission Date	Age in years	Gender	Mode of Discharge	Discharge Date
2023-11-05	Sierra Leone / Bo / Badjia / Ngelehun CHC	2018-10-22	10	Female	Discharged	2018-11-05
2023-10-19	Sierra Leone / Bo / Badjia / Ngelehun CHC	2018-10-05	7	Male	Discharged	2018-10-19
2023-03-20	Sierra Leone / Bo / Badjia / Ngelehun CHC	2018-03-06	8	Female	Absconded	2018-03-20
2023-07-06	Sierra Leone / Bo / Badjia / Njandama MCHP	2018-06-22	7	Female	Died	2018-07-06
2023-08-18	Sierra Leone / Bo / Badjia / Njandama MCHP	2018-08-04	10	Male	Discharged	2018-08-18
2023-01-14	Sierra Leone / Bo / Badjia / Njandama MCHP	2017-12-31	7	Female	Transferred	2018-01-14
2023-07-08	Sierra Leone / Bo / Badjia / Njandama MCHP	2018-06-24	8	Male	Absconded	2018-07-08
2023-03-23	Sierra Leone / Bo / Baoma / Baoma Station CHP	2018-03-09	6	Male	Discharged	2018-03-23
2023-11-18	Sierra Leone / Bo / Baoma / Baoma Station CHP	2018-11-04	6	Female	Absconded	2018-11-18
2023-07-18	Sierra Leone / Bo / Baoma / Baoma Station CHP	2018-07-04	9	Male	Transferred	2018-07-18
2023-09-28	Sierra Leone / Bo / Baoma / Baoma Station CHP	2018-09-14	7	Female	Discharged	2018-09-28
2023-05-17	Sierra Leone / Bo / Baoma / Blamawo MCHP	2018-05-03	7	Male	Discharged	2018-05-17
2023-11-10	Sierra Leone / Bo / Baoma / Blamawo MCHP	2018-10-27	6	Female	Absconded	2018-11-10
2023-09-05	Sierra Leone / Bo / Baoma / Blamawo MCHP	2018-08-22	6	Male	Absconded	2018-09-05
2023-07-06	Sierra Leone / Bo / Baoma / Blamawo MCHP	2018-06-22	9	Female	Absconded	2018-07-06
2023-11-20	Sierra Leone / Bo / Baoma / Blamawo MCHP	2018-11-06	6	Female	Absconded	2018-11-20
2023-07-24	Sierra Leone / Bo / Baoma / Faabu CHP	2018-07-10	6	Female	Absconded	2018-07-24
2023-11-16	Sierra Leone / Bo / Baoma / Faabu CHP	2018-11-02	7	Female	Discharged	2018-11-16
2023-10-13	Sierra Leone / Bo / Baoma / Gerehun CHC	2018-09-29	8	Male	Discharged	2018-10-13
2023-11-01	Sierra Leone / Bo / Baoma / Gerehun CHC	2018-10-18	6	Male	Discharged	2018-11-01
2023-04-29	Sierra Leone / Bo / Baoma / Golu MCHP	2018-04-15	6	Female	Transferred	2018-04-29
2023-12-06	Sierra Leone / Bo / Baoma / Golu MCHP	2018-11-22	7	Male	Absconded	2018-12-06
2023-01-18	Sierra Leone / Bo / Baoma / Jembe CHC	2018-01-04	7	Male	Absconded	2018-01-18
2023-10-19	Sierra Leone / Bo / Baoma / Jembe CHC	2018-10-05	6	Male	Transferred	2018-10-19

Skip rounding for numeric values

You can control how numeric values are formatted by toggling the **Skip rounding** option in **Options > Data**. When this is enabled, the numeric values are not rounded and all decimals are shown. By default rounding is applied.

Below is an example of the same table with and without the option applied.

Report date	Organisation unit name	Admission Date	Age in years	Average age of deaths	Average age of female discharges	Average height of boys at 10 years old	Average height of girls at 5 years old	BMI	BMI female	BMI female under 5 y	BMI male
2023-01-01	Ngelehun CHC	2018-01-01	10 - 20					27.2817460317			27.281746031
2023-05-14	Manjama Shellmingo CHC	2018-04-30	0 - 10					83.8290968091	83.8290968091	83.8290968091	

Report date	Organisation unit name	Admission Date	Age in years	Average age of deaths	Average age of female discharges	Average height of boys at 10 years old	Average height of girls at 5 years old	BMI	BMI female	BMI female under 5 y	BMI male	BMI male under 5 y	Diagnosis (10)
2023-01-01	Ngelehun CHC	2018-01-01	10 - 20					27.3			27.3		A009 Cho unspecifie
2023-05-14	Manjama Shellmingo CHC	2018-04-30	0 - 10					83.8	83.8	83.8			Q270 Con absence a hypoplasi: umbilical:

View options

To allow more space for the line list itself, there are various ways to hide panels on the top and sides:

1. The "full screen button" in the title bar will hide the main sidebar on the left and the layout panel at the top of the screen.
2. If the interpretations panel is expanded on the right, this can be hidden by clicking the "interpretations button" just below the user profile menu.
3. Each panel can also be shown/hidden by using the "View menu" in the main toolbar.

The screenshot shows the Line Listing app interface with several key elements highlighted:

- View menu:** A dropdown menu is open, showing options: "Hide layout", "Hide dimensions sidebar", and "Hide interpretations and details". A red box highlights this menu, with a label "View menu" pointing to it.
- Fullscreen button:** A red box highlights a button in the top toolbar, with a label "Fullscreen button" pointing to it.
- Interpretations button:** A red box highlights a button in the top right corner, with a label "Interpretations button" pointing to it.
- Main Sidebar:** On the left, there are sections for "Line list", "Input: Event", "Program dimensions", "Your dimensions", "MAIN DIMENSIONS" (with "Organisation unit" selected), and "TIME DIMENSIONS" (with "Report date" selected).
- Right Panel:** On the right, there is an "About this line list" section, a "Notifications" section with a "Subscribe" button, and an "Interpretations" section with a text input field and a "TW" button.
- Table:** A table titled "Inpatient: Cases 5 to 15 years this year (case)" is visible at the bottom, showing columns for Report date, Organisation unit name, Admission Date, Age in years, and Gender.

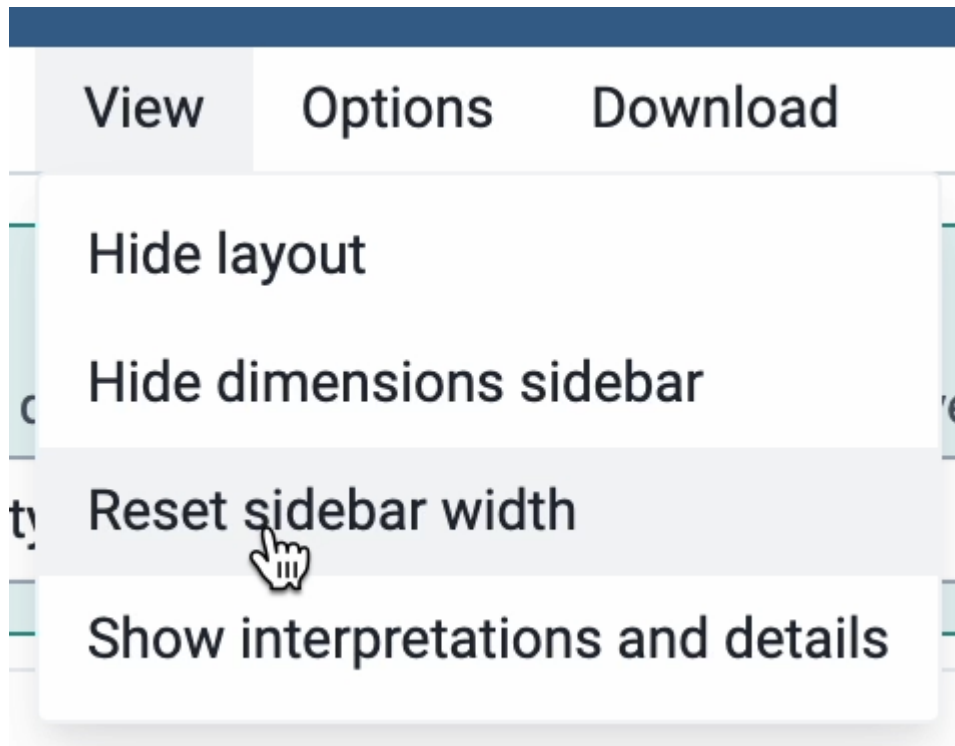
To provide more space for the content in the "Accessory Side Panel" it can be resized using the mouse as illustrated below:

The screenshot shows the 'DHIS 2 Demo - Sierra Leone - Line Listing' interface. On the left, there is a sidebar with 'Line list' and 'Input: Event' selected. Below this, there are sections for 'Program dimensions' (7 items) and 'Your dimensions' (0 items). Under 'GLOBAL DIMENSIONS', there are options for 'Last updated on', 'Created by', and 'Last updated by'. The main content area has a menu with 'Update', 'File', 'View', 'Options', and 'Download'. The 'Options' menu is open, showing three radio buttons: 'Event' (selected), 'Enrollment', and 'Tracked entity'. Below the radio buttons, there is a dropdown menu with 'Inpatient morbidity and mortality' selected. A red box highlights the 'Event' radio button and the dropdown menu. To the right, a table is partially visible with columns for 'Report date' and 'Columns'.

Resizing can also be done using the left/right arrow key on the keyboard. These keyboard shortcuts become active after giving focus to the resize-handle (by repeatedly hitting the tab key):

This screenshot is similar to the one above, showing the 'DHIS 2 Demo - Sierra Leone - Line Listing' interface. The 'Options' menu is open, and the 'Event' radio button is selected. The dropdown menu shows 'Inpatient morbidity and mortality'. A red box highlights the 'Event' radio button and the dropdown menu. A vertical blue line is drawn over the dropdown menu, indicating the resize handle. The table on the right is more visible, showing columns for 'Report date' and 'Columns'.

The "Accessory Side Panel" can be reset to its default width, by using the "View" menu or double clicking the resize-handle.



Using the Maps app

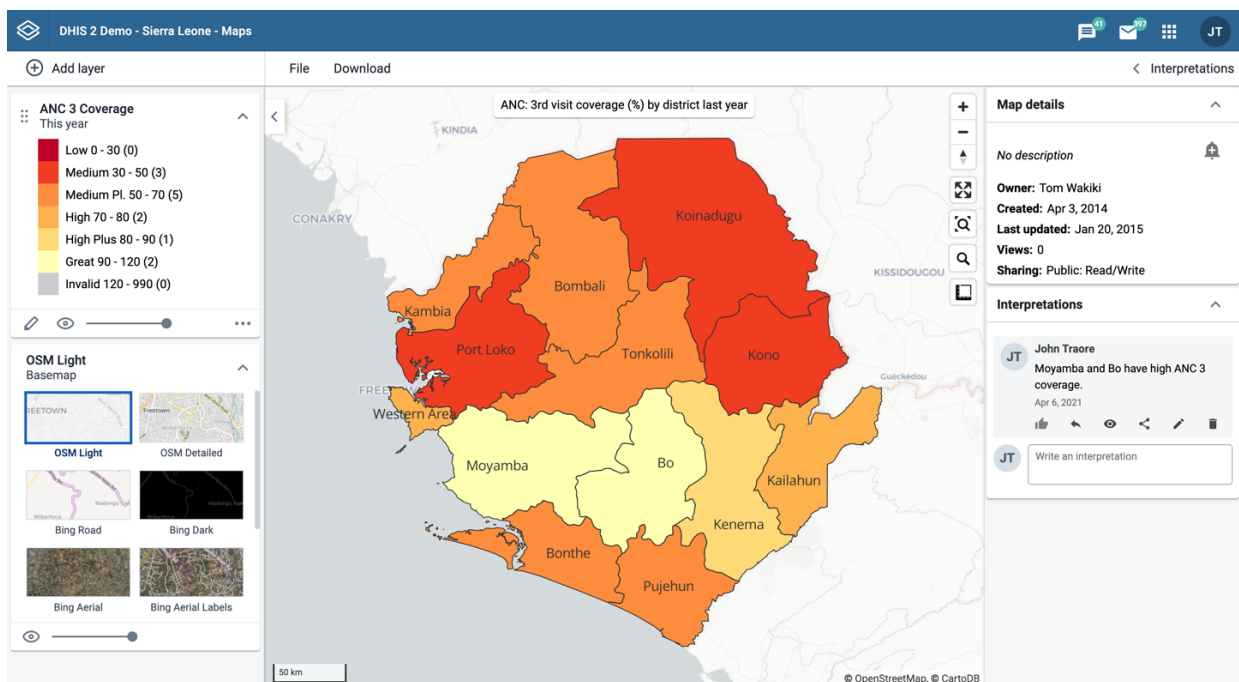
About the Maps app

The Maps App was introduced in release 2.29 and serves as a replacement of the GIS App offering a more intuitive and user-friendly interface. The mapping engine from version 2.34 is based on WebGL technology, capable of showing thousands of features on a map simultaneously.

With the Maps app you can overlay multiple layers and choose among different basemaps. You can create thematic maps of areas and points, view facilities based on classifications, and visualize catchment areas for each facility. You can add labels to areas and points, and search and filter using various criteria. You can move points and set locations on the fly. Maps can be saved as favorites and shared with other users and groups, or downloaded as an image.

Note

To use predefined legends in the **Maps** app, you need to create them first in the **Maintenance** app.

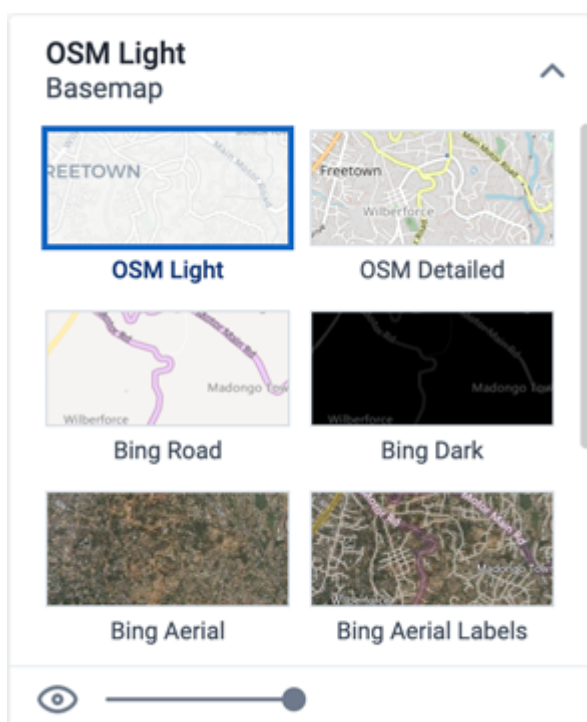


- The **layer panel** on the left side of the workspace shows an overview of the layers for the current map:
- As layers are added, using the **(+) Add layer** button, they are arranged and managed in this panel.
- The **basemap** is always shown in the panel. The default basemap is OSM Light and is selected by default, unless a different basemap has been configured in the system settings. OpenStreetMap Detailed contains more map features and place names. There are 4 basemaps from Bing Maps, replacing Google Maps provided in previous versions. Bing Road and Bing Dark shows roads, borders and places. Use the dark version if the colors on your map layers are bright. Bing Aerial and Bing Aerial Labels shows satellite and detailed aerial imagery. Switch between them by selecting the desired image.

- The small arrow button to the right of the layer panel, at the top, allows the panel to be hidden or shown.
- The **File** button near the top left allows you to open and save maps. See [using the maps file menu](#) for more detailed information.
- The **Download** button next to the File button allows you to download the current map as a PNG image.
- The **Interpretations** button at top right opens an interpretations panel on the right side of the workspace. See [viewing interpretations](#) for more information.
- The **+** and **-** buttons on the map allow you to zoom in and out of the map respectively. The mouse scroll wheel zoom is continuous, allowing us to fit the map perfectly to your content.
- The **rotate map** button (triangle arrows) allows you to rotate and tilt the map to enhance the view of your data. Press the button (or the Control key on your keyboard) while moving your mouse to change the map view. Click to button again to reset the view.
- **Fullscreen** (four arrows) allows you to view the map in fullscreen. To exit fullscreen click the button again or the escape key on your keyboard.
- **Zoom to content** (bounded magnifying glass symbol) automatically adjusts the zoom level and map center position to put the data on your map in focus.
- **Search** (magnifying glass symbol) allows searching for and jumping to a location on the map.
- The **ruler** button allows you to measure distances and areas on the map.
- Right-click on the map to display the longitude and latitude of that location.

Basemaps

Basemap layers are represented by layer *cards* in the layer panel such as:



Along the top of the basemap card from left to right are:

- The title of the selected basemap
- An arrow symbol to collapse and expand the basemap card

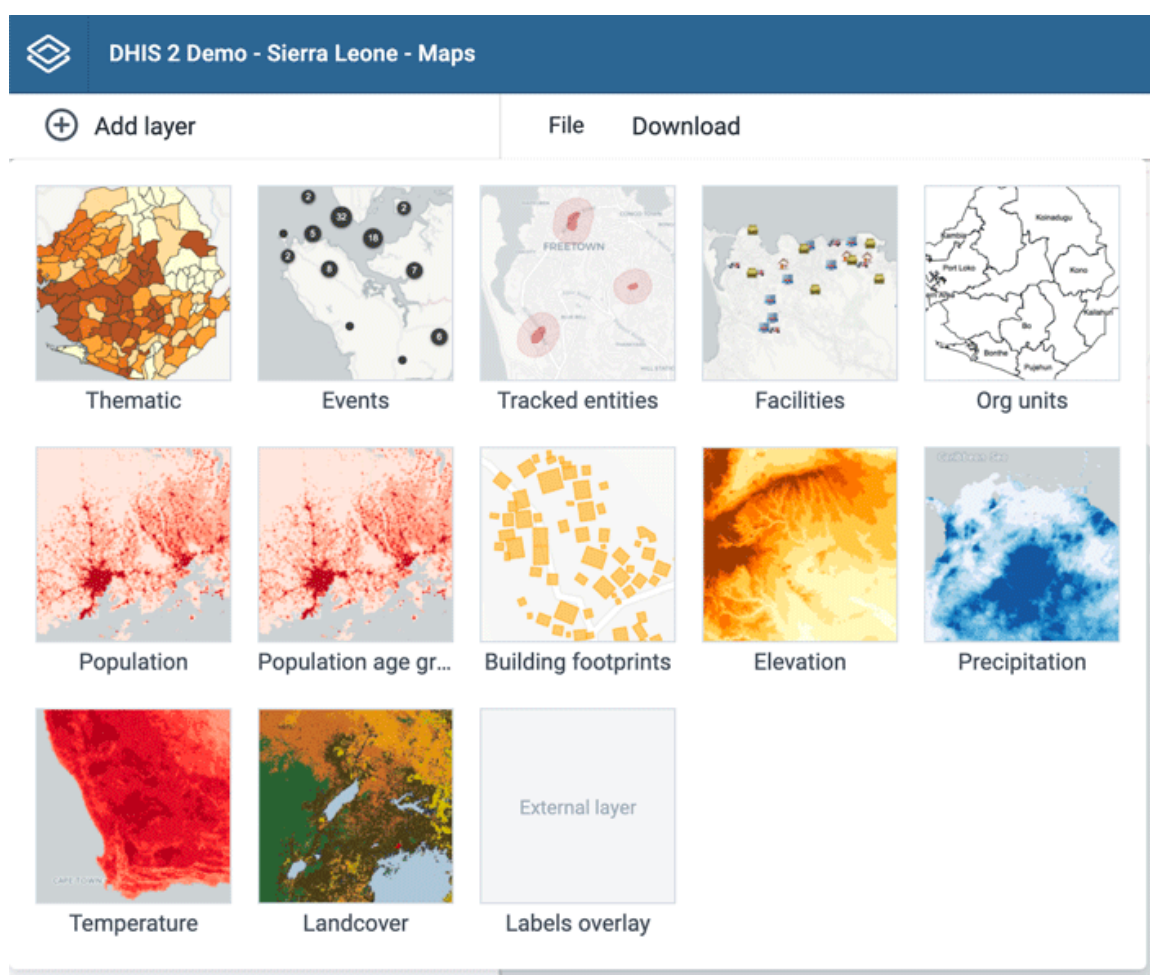
In the middle of the basemap card is the list of available basemaps. The current basemap is highlighted.

Along the bottom of the basemap card is:

- An eye symbol for toggling the visibility of the layer
- A slider for modifying the layer transparency

Create a new map

1. In the **Apps** menu, click **Maps**. The **DHIS2 Maps** window opens.
2. Click the (+) Add layer button in the top left. You are presented with the layer selection dialog:



3. Select a layer to add to the current map. Possible options are:

- [Thematic](#)
- [Events](#)
- [Tracked entities](#)
- [Facilities](#)

- [Org units](#)

In addition, there are several layers provided by Google Earth Engine and other services:

- Population
- Population age groups
- Building footprints
- Elevation
- Precipitation
- Temperature
- Landcover

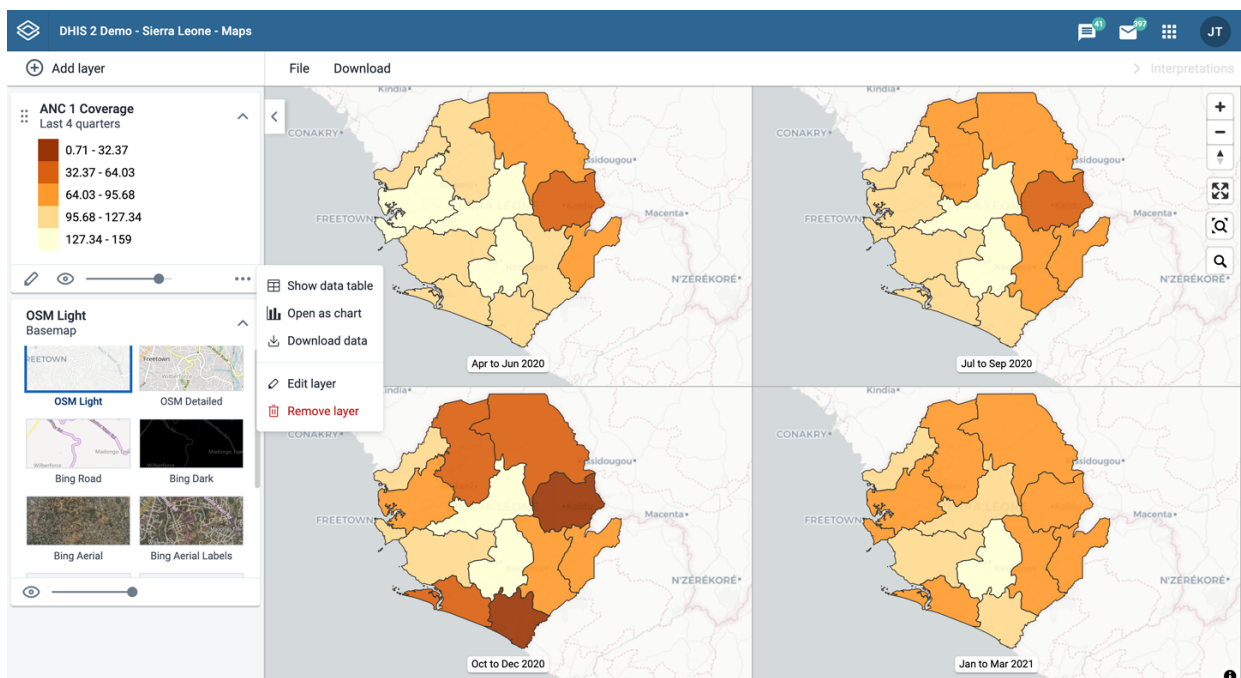
Labels overlay is an [external layer](#) defined in the Maintenance app.

Manage thematic layers

Thematic maps represent spatial variation of geographic distributions. Select your desired combination of indicator/data element, period and organisation unit level. If your database has coordinates and aggregated data values for these organisation units, they will appear on the map.

Note

You must generate the DHIS2 analytics tables to have aggregated data values available.



Thematic layers are represented by layer *cards* in the layer panel such as:

Along the top of the thematic card from left to right are:

- A grab field to allow dragging and re-ordering layers with the mouse

- The title and period associated with the layer
- An arrow symbol to collapse and expand the thematic card

In the middle of the thematic card is a legend indicating the value ranges displayed on the layer.

Along the bottom of the thematic card from left to right are:

- An edit (pencil) button to open the layer configuration dialog
- An eye symbol for toggling the visibility of the layer
- A slider for modifying the layer transparency
- A more actions (three dots) button with additional options:
- A **data table** toggle button to show or hide the data table associated with the layer
- **Download data** allows you to download the data for this layer in GeoJSON format for use in other mapping software
- **Edit layer** is the same as edit button above
- **Remove layer** will remove this layer from the current map.

Create a thematic layer

To create an event layer, choose **Thematic** on the **Add layer** selection. This opens the Events layer configuration dialog.

1. In the **DATA** tab:

Add new thematic layer

Data Period Org Units Filter Style

Item type
Data element

Data element group
ART enrollment

Totals Details

Data element
ART enrollment stage 1

Aggregation type
By data element

Cancel Add layer

- Select a data type and then select respectively the group and the target element. The available fields depend on the type of item selected.
- Select a value from the **Aggregation type** field for the data values to be shown on the map. By default, "By data element" is selected. Alternative values are: Count; Average; Sum; Standard deviation; Variance; Min; Max. See also [Aggregation operators](#).

2. In the **PERIOD** tab

Add new thematic layer

Data
Period
Org Units
Filter
Style

Period type

Relative ▼

Period

Last 12 months ▼

Display periods

Single (aggregate)

Timeline

Split map views

Cancel
Add layer

- select the time span over which the thematic data is mapped. You can select either a relative or a fixed period.

- Relative period

In the **Period type** field select **Relative**, then select one of the relative periods, for example **Last year** or **Last 12 months**, in the **Period** field.

A **default relative period for analysis** can be set in the **Systems Settings** app.

If you select a relative period covering multiple years/months/weeks/days the layer can be displayed as

- Single (aggregate)

Show aggregate values for the relative period selected (default).

- Timeline

Includes a timeline allowing you to step through the periods. Only one timeline layer can be added to the same map.

- Split map views

Show multiple maps allowing you to compare different periods side by side. Supported for relative periods with 12 items or below. Can not be combined with other layer types.

- Fixed period

In the **Period type** field select period length, then select the target in the **Period** field.

- Start/end dates

In the **Period type** field select **Start/end dates** and fill in a start date and an end date.

3. In the **ORG UNITS** tab:

Add new thematic layer

Data
Period
Org Units
Filter
Style


- ▾ Sierra Leone
 - Bo
 - Bombali
 - Bonthe
 - Kailahun
 - Kambia
 - Kenema
 - Koinadugu
 - Kono
 - Moyamba
 - Port Loko
 - Pujehun
 - Tonkolili
 - Western Area

Select levels


Chiefdom X
▾

Select groups


User organisation units



Main



Below



2 x below

Use associated geometry



Cancel
Add layer

- Select the organisation units you want to include in the layer. It is possible to select either
- One or more specific organisation units, organisation unit levels in the hierarchy, organisation unit groups, or
- A relative level in the organisation unit hierarchy, with respect to the user. By selecting a **User organisation unit** the map data will appear differently for users at different levels in the organisation unit hierarchy.
- **Use associated geometry**: This dropdown will only show if there are any additional geometry available for your organisation units. This is typically used to show facility catchment areas.

4. In the **FILTER** tab:

Add new thematic layer

Data Period Org Units **Filter** Style

Dimension	Items	
Facility Type	CHC x CHP x	
Gender	Female x	

- Click ADD FILTER and select an available data item to add a new filter to the data set.
- Select a data dimension from the dropdown box. You can reduce the number of dimensions shown by using the search field. Click on the name to select a dimension.
- When a dimension is selected you get a second dropdown with dimension items. Check the items you want to include in the filter.

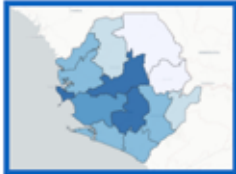
Multiple filters may be added. Click the trash button on the right of the filter to remove it.

5. In the **STYLE** tab:

Add new thematic layer

Data Period Org Units Filter **Style**

Choropleth

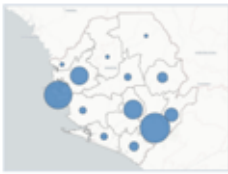


Low radius

Labels

Size

Bubble map




High radius

Automatic color legend

Predefined color legend

Classification

Classes



Show no data

Color

- Select either **Choropleth** or **Bubble maps**.
- Choropleth will assign a color to each org unit shape according to the data value. This is the recommended technique if the data is normalised (per capita).
- Bubble map will show data values as proportional circles. Use this technique if the data is not normalised (absolute numbers). The circles are placed in the center of each org unit.
- Set the **Low radius** and **High radius** for the proportional circles or the point facilities. The circles will be scaled between low and high radius according to the data value. The radius needs to be between 0 and 50 px.
- **Show labels**: Allows org unit names to be shown on the layer. Font size, weight, style and color can be modified here.
- **Show no data**: By default org units with missing data values will not show on the map. Check this box if you want to show them with a color. Click the color to change it.
- Select the legend type:

- **Automatic color legend:** the application will create a legend for you based on what classification method, number of classes and the color scale you select. Set **Classification** to either:

- Equal intervals

the range of each interval will be (highest data value - lowest data value / number of classes)

- Equal counts

the legend creator will try to distribute the organisation units evenly.

- **Predefined color legend:** Select between the predefined legends.
- **Single color legend:** Select the color of the bubbles or circles. Only available for bubble maps.

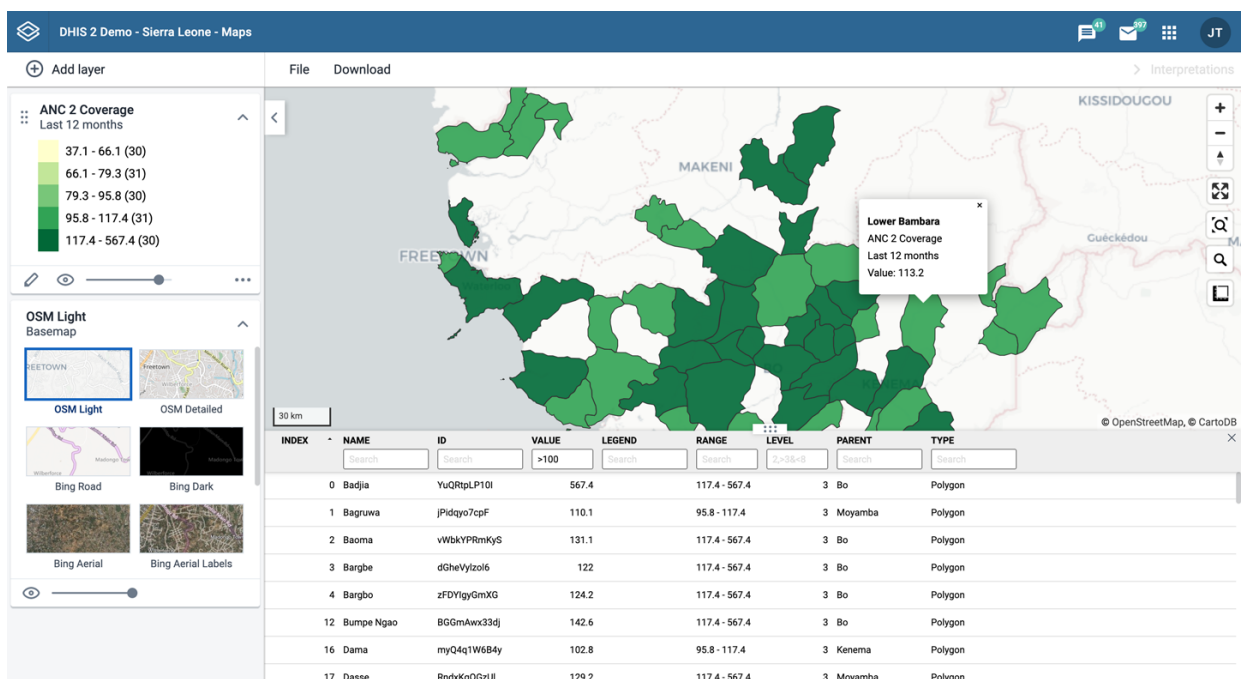
6. Click **ADD LAYER**.

Modify a thematic layer

1. In the layer panel, click the edit (pencil) icon on the thematic layer card.
2. Modify the setting on any of the tabs as desired.
3. Click **UPDATE LAYER**.

Filter values in a thematic layer

Thematic layers have a **data table** option that can be toggled on or off from the thematic layer card.



The data table displays the data forming the thematic layer.

- clicking on a title will sort the table based on that column; toggling between ascending and descending.

-
- entering text or expressions into the filter fields below the titles will apply those filters to the data, and the display will adjust according to the filter. The filters are applied as follows:
 - NAME
filter by name containing the given text
 - VALUE
filter values by given numbers and/or ranges, for example: 2,>3&\<8
 - LEGEND
filter by legend containing the given text
 - RANGE
filter by ranges containing the given text
 - LEVEL
filter level by numbers and/or ranges, for example: 2,>3&\<8
 - PARENT
filter by parent names containing the given text
 - ID
filter by IDs containing the given text
 - TYPE
filter by GIS display types containing the given text
 - COLOR
filter by color names containing the given text

Note

Data table filters are temporary and are not saved with the map layers as part of the favourite.

Search for an organisation unit

The NAME filter field in the data table provides an effective way of searching for individual organisation units.

Open organisation unit profile

You can open the [organisation unit profile](#) in three ways:

1. Click on any of the organisasjon units shown on the map, and click the **View profile** button in the popup.
2. Right-click one of the organisation units on the map, and select **View profile** from the menu.
3. Click on an organisation unit row in the **data table**.

Navigate between organisation hierarchies

When there are visible organisation units on the map, you can easily navigate up and down in the hierarchy without using the level/parent user interface.

1. Right-click one of the organisation units.
2. Select **Drill up one level** or **Drill down one level**.

The drill down option is disabled if you are on the lowest level or if there are no coordinates available on the level below. Likewise the drill up option is disabled from the highest level.

Remove thematic layer

To clear all data in a thematic layer:

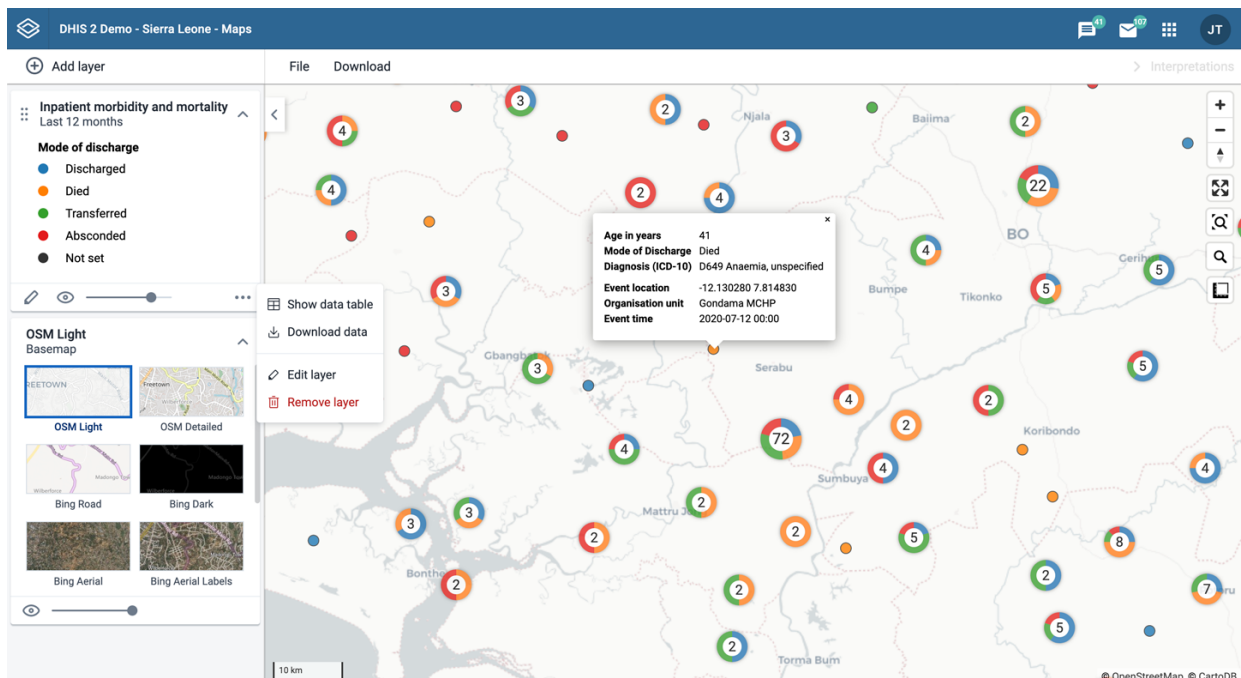
1. In the layer card to the left, click the *more actions* (three dots) icon and then on **Remove layer**.

The layer is removed from the current map.

Manage event layers

The event layer displays the geographical location of events registered in the DHIS2 tracker. Provided that events have associated point or polygon coordinates, you can use this layer to drill down from the aggregated data displayed in the thematic layers to the underlying individual events or cases.

You can also display aggregated events for facilities or organisation units. You do this through a thematic layer using event data items. This is useful when you only have the coordinates for the Org Unit under which the events are recorded.



Event layers are represented by layer *cards* in the layer panel such as:

Along the top of the event card from left to right are:

- A grab field to allow dragging and re-ordering layers with the mouse
- The title and period associated with the layer

- An arrow symbol to collapse and expand the event card

In the middle of the event card is a legend indicating the styling of the layer.

Along the bottom of the event card from left to right are:

- An edit (pencil) button to open the layer configuration dialog
- An eye symbol for toggling the visibility of the layer
- A slider for modifying the layer transparency
- A more actions (three dots) button with additional options:
- A **data table** toggle button to show or hide the data table associated with the layer
- **Download data** allows you to download the data for this layer in GeoJSON format for use in other mapping software
- **Edit layer** is the same as edit button above
- **Remove layer** will remove this layer from the current map.

Create an event layer

To create an event layer, choose **Events** on the **Add layer** selection. This opens the Events layer configuration dialog.

1. In the **DATA** tab:

Add new event layer

Data Period Org Units Filter Style

Program

Inpatient morbidity and mortality

Stage

Inpatient morbidity and mortality

Coordinate field

Event location

Event status

All

Cancel Add layer

- Select a program and then select a program stage. The **Stage** field is only shown once a program is selected.

If there is only one stage available for the selected program, the stage is automatically selected.

- Select a value from the **Coordinate field** for the positions shown on the map. By default, "Event location" is selected. Depending on the data elements or attributes that belong to a program, other coordinates such as "Household position" are available.
- By default all events with coordinates are shown on the map. Use the **Event status** field to only show events having one status: Active, Completed, Schedule, Overdue or Skipped.

2. In the **PERIOD** tab

Add new event layer

Data **Period** Org Units Filter Style

Period

Start/end dates

Start date

06/04/2020

End date

06/04/2021

- select the time span for when the events took place. You can select either a fixed period or a relative period.

- Relative period

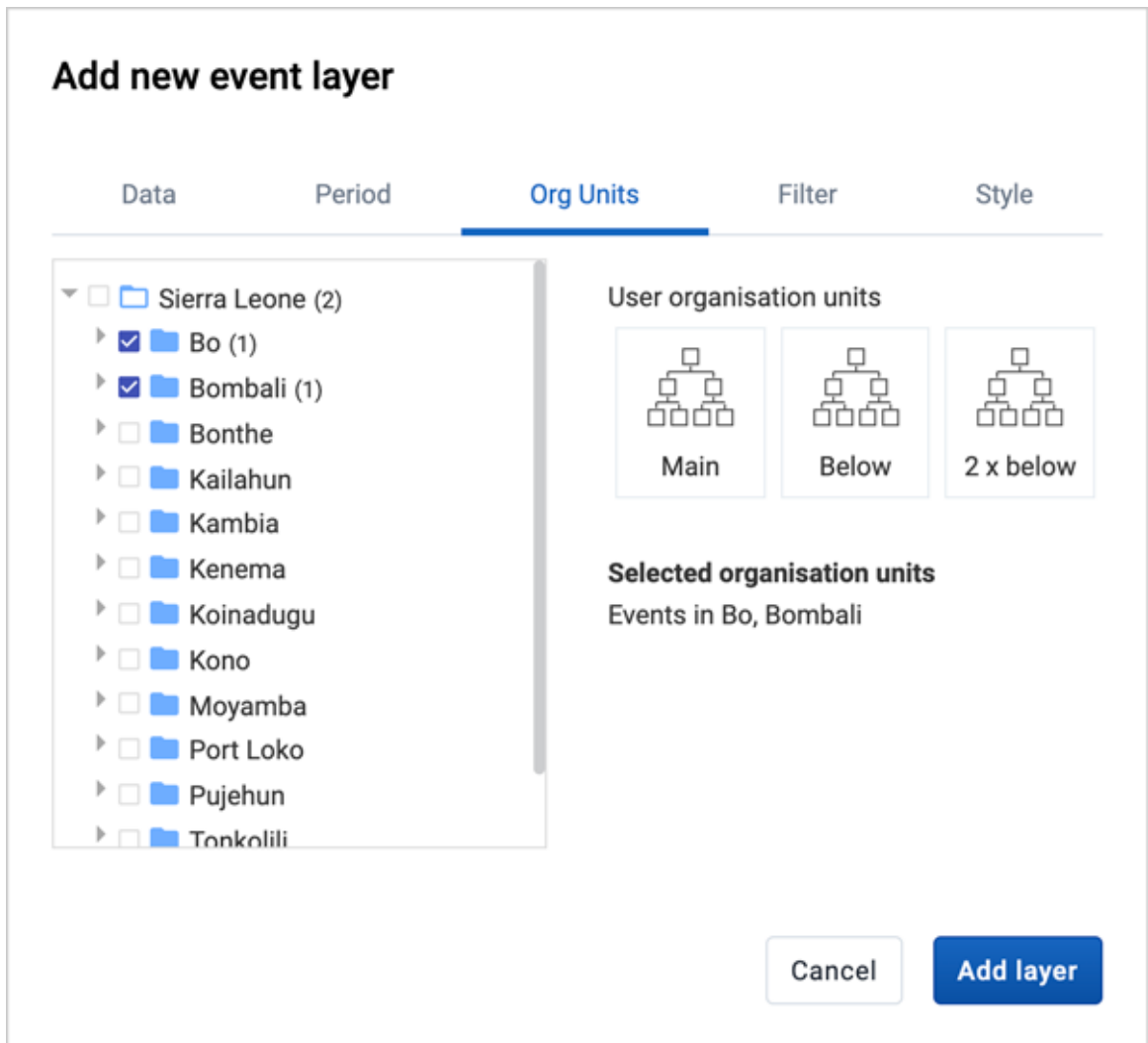
In the **Period** field, select one of the relative periods, for example **This month** or **Last year**.

A **default relative period for analysis** can be set in the **Systems Settings** app.

- Fixed period

In the **Period** field, select **Start/end dates** and fill in a start date and an end date.

3. In the **ORG UNITS** tab:



- Select the organisation units you want to include in the layer. It is possible to select either
- One or more specific organisation units, or
- A relative level in the organisation unit hierarchy, with respect to the user. By selecting a **User organisation unit** the map data will appear differently for users at different levels in the organisation unit hierarchy.

4. In the **FILTER** tab:

Add new event layer

Data Period Org Units **Filter** Style

Data item	Operator	Options	
Gender	one of	Female	
Data item	Operator	Value	
Age in years	<=	20	
Data item			
Pregnant	<input checked="" type="checkbox"/> Yes		

- Click ADD FILTER and select an available data item to add a new filter to the data set.
- For data item of type *option set*, you can select any of the options from the dropdown box by using the down-wards arrow or by start typing directly in the box to filter for options.
- For data item of type *number*, you can select operators like equal, not equal, greater than or less than.
- For data item of type *boolean* (yes/no), you can check the box if the condition should be valid or true.
- For data item of type *text* you will get two choices: **Contains** implies that the query will match all values which contains your search value, and **Is exact** implies that only values which is completely identical to your search query will be returned.


Multiple filters may be added. Click the trash button on the right of the filter to remove it.

5. In the **STYLE** tab:


Add new event layer

Data
Period
Org Units
Filter
Style

Group events



View all events



Style by data element

Mode of Discharge ▾

- Discharged
- Died
- Transferred
- Absconded

Color

▾

Radius

6

Buffer

Radius in meters

100

Cancel

Add layer

- Select **Group events** to group nearby events (cluster), or **View all events** to display events individually.
- Select a **color** for the event or cluster points.
- Select the **radius** (between 1 and 20) for the events.
- Select **Show buffer** to display visual buffer around each event. The radius of the buffer can be modified here. This option is only available if you select **View all events** above.
- Select a **Style by data element** to colorise the events according to a data value. If you also select to group events, the clusters will be displayed as small donut charts showing the distribution of the data values. The options varies for different data types:
- **Option sets:** Select a color for each option in an option set. You can set default colors for an option in the Maintenance app.
- **Numbers:** You can style a numeric data element in [the same way as thematic layers](#) using automatic or predefined legends.
- **Booleans:** Select a color for true/yes and another for false/no.

6. Click **ADD LAYER**.

Modify an event layer

1. In the layer panel, click the edit (pencil) icon on the event layer card.

2. Modify the setting on the DATA, PERIOD, FILTER, ORG UNIT and STYLE tabs as desired.

3. Click **UPDATE LAYER**.

Listing and filtering events

Event layers have a **data table** option that can be toggled on or off from the event layer card.

The screenshot shows the DHIS 2 Maps application interface. The top bar displays 'DHIS 2 Demo - Sierra Leone - Maps' and user information 'JT'. The left sidebar contains layer controls for 'Inpatient morbidity and mortality' (Last 12 months) with gender filters (Male, Female, Not set) and map style options (OSM Light Basemap, Bing Road, Bing Dark, Bing Aerial, Bing Aerial Labels). The main map area shows a geographical view of Sierra Leone with colored markers representing events. Below the map is a data table with the following columns: INDEX, ORG UNIT, ID, EVENT TIME, GENDER, AGE IN YEARS, MODE OF DISCH, DIAGNOSIS (ICD-), TYPE, and COLOR. The table contains 11 rows of event data.

INDEX	ORG UNIT	ID	EVENT TIME	GENDER	AGE IN YEARS	MODE OF DISCH	DIAGNOSIS (ICD-)	TYPE	COLOR
0	Moyowa MCHP	F6KKxtyxRgg	2020-05-15 00:00	Male	<20	18 Absconded	P374 Other conge...	Point	#1f78b4
2	Moyowa MCHP	zTo7wallJRq	2020-05-29 00:00	Male	16	Absconded	D649 Anaemia, un...	Point	#1f78b4
8	Kamasikie MCHP	YRIAIZierYO	2020-05-28 00:00	Female	5	Transferred	D649 Anaemia, un...	Point	#f77100
10	Gbankfay MCHP	QPweQYqeRby	2020-08-15 00:00	Female	6	Absconded	P374 Other conge...	Point	#f77100
13	Mafarajy CHP	iwo2palwxmB	2020-04-27 00:00	Female	4	Died	D649 Anaemia, un...	Point	#f77100
15	Benkia MCHP	y6AYm8fVLZ	2020-10-04 00:00	Female	20	Transferred	N390 Urinary tract ...	Point	#f77100
19	Bumbuna CHC	ICHEwUZDAIY	2020-06-03 00:00	Male	18	Transferred	N390 Urinary tract ...	Point	#1f78b4
20	Fogbo (WAR) MCHP	UJlkrL8PVmi	2020-10-30 00:00	Female	20	Discharged	J180 Bronchopneu...	Point	#f77100

The data table displays the data forming the event layer.

- clicking on a title will sort the table based on that column; toggling between ascending and descending.
- entering text or expressions into the filter fields below the titles will apply those filters to the data, and the display will adjust according to the filter. The filters are applied as follows:
 - ID
 - filter by event IDs containing the given text
 - ORG UNIT
 - filter by org unit name containing the given text
 - EVENT TIME
 - filter by event time containing the given text
 - TYPE
 - filter by GIS display types containing the given text
 - **Style by data element:** If events are styled by a data element (e.g. gender) both the data value and the color can be filtered.
 - **Display in reports:** Data elements checked to display in reports will be shown in separate columns (see below how to add them).

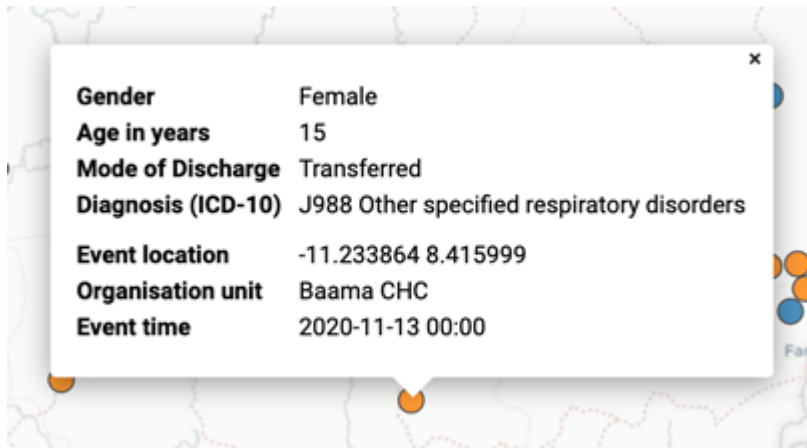
- Numeric data values can be filtered by given numbers, and/or ranges, for example: 2,>3&\<8

Note

Data table filters are temporary and are not saved with the map layers as part of the favourite.

Modify information in event data table and popups

You can modify the information displayed in the event pop-up window.




1. Open the **Maintenance** app.
2. Select **Program**.
3. Click the program you want to modify and select **2 Assign data elements**.
4. For every data element you want to display in the pop-up window, select corresponding **Display in reports**.
5. Click **Save**.

Download raw event layer data

The raw data for event layers can be downloaded in GeoJSON format for more advanced geo-analytics and processing in desktop GIS software such as [QGIS](#). The downloaded data includes all individual events as GeoJSON features, including attributes for each data element selected for **Display in reports**.

Download Layer Data

Downloading GeoJSON data for "Inpatient morbidity and mortality"

 GeoJSON is supported by most GIS software, including QGIS and ArcGIS Desktop.

GeoJSON Properties:

ID Format

Use human-readable keys

- In the layer card to the left, click the *more actions* (three dots) icon and then on **Download data**
- Select the **ID format** to use as the key for Data Element values in the downloaded GeoJSON file. There are three options available:
 - **ID** - Use the unique ID of the data element
 - **Name** - Use the human-friendly name of the data element (translated)
 - **Code** - Use the code of the data element
- Select whether or not to **Use human-readable keys** for other Event attributes, such as Program Stage, Latitude, Longitude, Event Data, and Organization Unit ID, Name, and Code. When this option is **not** selected these values will be the computer-friendly ID instead of the human-readable (and translated) name.
- Click the **DOWNLOAD** button to generate and download a GeoJSON file. The data will be requested from the DHIS2 server and processed by the maps application. This operation may take several minutes to complete.
- Once the GeoJSON file has been downloaded it can be imported into most standard GIS software applications.

Note that the downloaded data does not include style information as it is not natively supported by the GeoJSON format. Styles can optionally be recreated in external GIS applications using the attributes of each feature.

Clear event layer

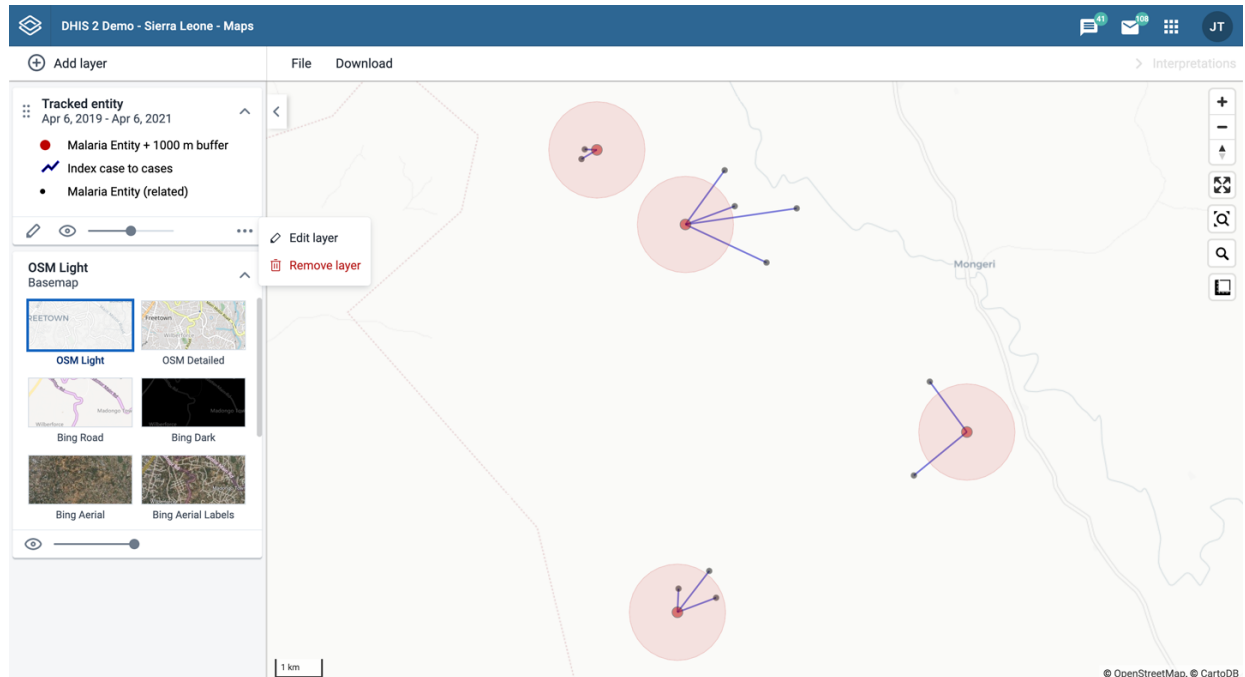
To clear all event layer data in a map:

1. In the layer card to the left, click the *more actions* (three dots) icon and then on **Remove layer**.

The layer is removed from the current map.

Manage tracked entity layers

The tracked entity layer displays the geographical location of tracked entities registered in the DHIS2. Provided that tracked entities have associated point or polygon coordinates, you can explore these on a map.



Tracked entity layers are represented by layer cards in the layer panel such as:

Along the top of the tracked entity card from left to right are:

- A grab field to allow dragging and re-ordering layers with the mouse.
- The title and period associated with the layer.
- An arrow symbol to collapse and expand the tracked entity card.

In the middle of the tracked entity card is a legend indicating the styling of the layer.

Along the bottom of the tracked entity card from left to right are:

- An edit (pencil) button to open the layer configuration dialog
- An eye symbol for toggling the visibility of the layer
- A slider for modifying the layer transparency
- A more actions (three dots) button with additional options:
 - **Edit layer** is the same as edit button above
 - **Remove layer** will remove this layer from the current map.

Create a tracked entity layer

To create an tracked entity layer, choose **Tracked entities** on the **Add layer** selection. This opens the Tracked entity layer configuration dialog.

1. In the **DATA** tab:

Edit tracked entity layer

Data Relationships Period Org Units Style

Tracked Entity Type

Malaria Entity

Program

Malaria case diagnosis, treatment and investigation

Program status

All

Follow up

Cancel Update layer

- Select the **Tracked Entity Type** you want to show on the map.
- Select a **Program** where the tracked entities belong.
- Use the **Program status** field to select the enrollment status of tracked entities to include: All, Active, Completed or Cancelled.
- Set the **Follow up** status of the tracked entity for the given program.

2. In the **Relationships** tab

Edit tracked entity layer

Data Relationships Period Org Units Style

Warning
Displaying tracked entity relationships in Maps is an experimental feature

Display Tracked Entity relationships

Relationship type

Index case to cases

Cancel Update layer

Caution

Displaying tracked entity relationships in Maps is an experimental feature

- If a Tracked Entity Type with has been selected, you can select the **Display Tracked Entity relationships** checkbox
- Once checked, you can select the type of relationship to display on the map from the dropdown list. Only relationships FROM the selected Tracked Entity type are available.

3. In the **PERIOD** tab


Edit tracked entity layer

Data Relationships **Period** Org Units Style


Select period when tracked entities were last updated

Program/Enrollment date: the date a tracked entity was registered or enrolled in a program

Start date

06/04/2019 

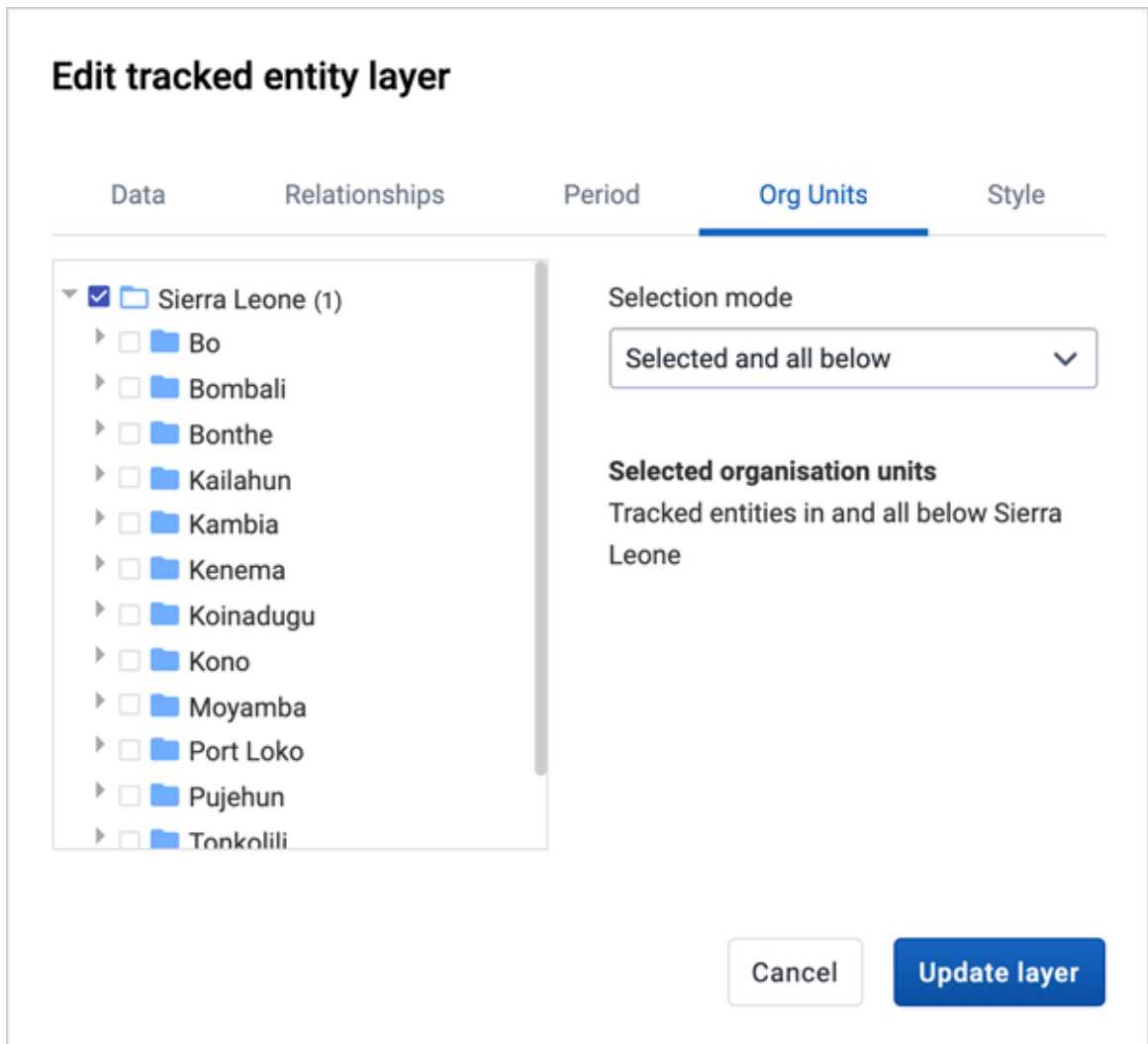
End date

06/04/2021 

Cancel **Update layer**

- If no program is selected, you can set start and end dates when the tracked entities were last updated.
- If a program is selected, you can set the period when tracked entities were last updated or when they were registered or enrolled in the program.

4. In the **ORG UNITS** tab:



- Select the organisation units you want to include in the layer. You have 3 selection modes:
- **Selected only**: Include tracked entities belonging to selected org units only.
- **Selected and below**: Included tracked entities in and right below selected org units.
- **Selected and all below**: Included tracked entities in and all below selected org units.

5. In the **STYLE** tab:

Edit tracked entity layer

Data
Relationships
Period
Org Units
Style

Tracked entity style:

Color

v

Point size

Buffer

Radius in meters

Related entity style:

Color

v

Point size

Line Color

v

Cancel

Update layer

- Select a **color** for the tracked entities points and polygons.
- Select the **point size** (radius between 1 and 20) for the points.
- Select **Show buffer** to display visual buffer around each tracked entity. The buffer distance in meters can be modified here.
- If a relationship type has been selected on the relationships tab you can select **color**, **point size**, and **line color** for relationships and related tracked entities instances

6. Click **ADD/UPDATE LAYER**.

Modify a tracked entity layer

1. In the layer panel, click the edit (pencil) icon on the tracked entity layer card.
2. Modify the setting on the DATA, PERIOD, ORG UNIT and STYLE tabs as desired.
3. Click **UPDATE LAYER**.

Clear a tracked entity layer

To clear a tracked entity layer from a map:

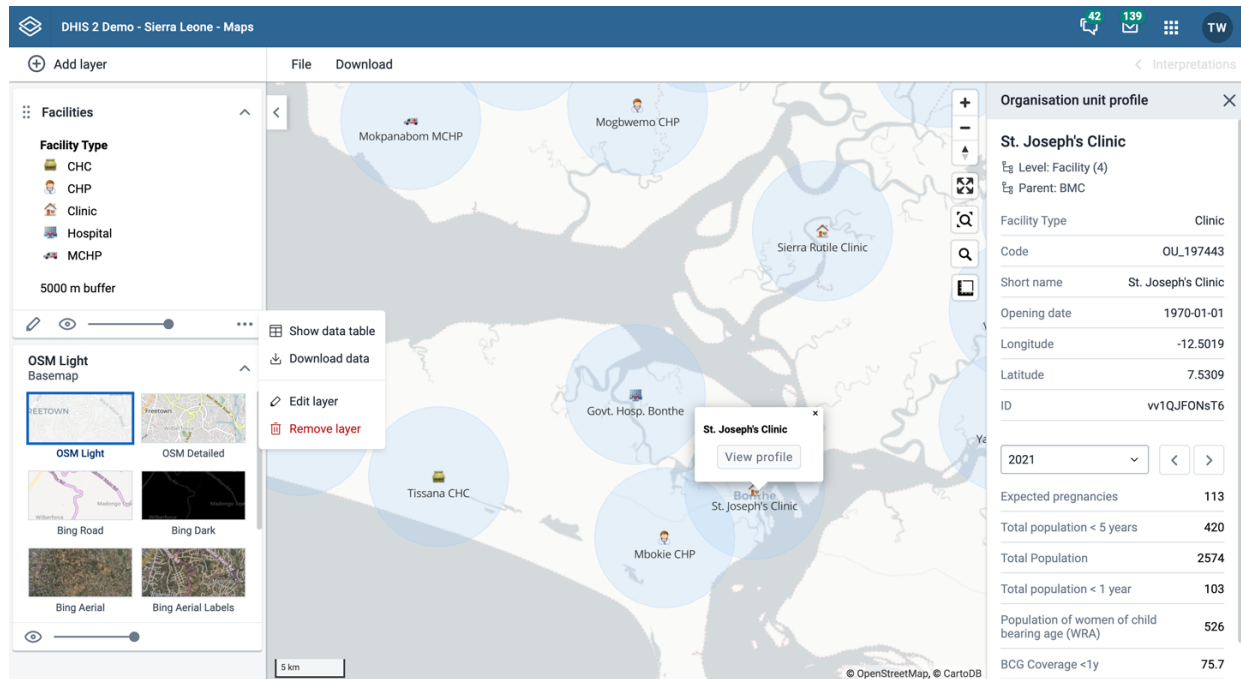
1. In the layer card to the left, click the *more actions* (three dots) icon and then on **Remove layer**.

The layer is removed from the current map.

Manage facility layers

The facility layer displays icons that represent types of facilities. Polygons do not show up on the map, so make sure that you select an organisation unit level that has facilities.

A polygon is an enclosed area on a map representing a country, a district or a park.



Facility layers are represented by layer *cards* in the layer panel such as:

Along the top of the facilities card from left to right are:

- A grab field to allow dragging and re-ordering layers with the mouse
- The **Facilities** title
- An eye symbol for toggling the visibility of the layer
- An arrow symbol to collapse and expand the facilities card

In the middle of the facilities card is a legend indicating the group set representation.

Along the bottom of the facilities card from left to right are:

- An edit (pencil) button to open the layer configuration dialog
- A slider for modifying the layer transparency
- A more actions (three dots) button with additional options:
- A **data table** toggle button to show or hide the data table associated with the layer
- **Download data** allows you to download the data for this layer in GeoJSON format for use in other mapping software
- **Edit layer** is the same as edit button above
- **Remove layer** will remove this layer from the current map.

Create a facility layer

To create facility layer, choose **Facilities** on the ****Add layer**** selection. This opens the Facility layer configuration dialog.

1. In the **ORGANISATION UNITS** tab

Add new facility layer

Organisation Units
Style

- ▾ Sierra Leone
- Bo
- Bombali
- Bonthe
- Kailahun
- Kambia
- Kenema
- Koinadugu
- Kono
- Moyamba
- Port Loko
- Pujehun
- Tonkolili
- Western Area


Select levels

Facility X
▾


Select groups

▾


User organisation units



Main



Below



2 x below

Use associated geometry

▾

Cancel

Add layer

- Select the organisation unit level(s) and/or group(s) from the selection fields on the right hand side.
- Select the organisation units you want to include in the layer. It is possible to select either
- One or more specific organisation units, or
- A relative level in the organisation unit hierarchy, with respect to the user. By selecting a **User organisation unit** the map data will appear differently for users at different levels in the organisation unit hierarchy.
- The system administrator can set the default organisation unit level containing facilities in the **System Settings** app.
- **Use associated geometry**: This dropdown will only show if there are any additional geometry available for your organisation units. This is typically used to show facility catchment areas.

2. In the **STYLE** tab:

Add new facility layer

Organisation Units
Style

Labels

Size

●
 B
 I

Style by group set

Facility Type ▾

- CHC
- CHP
- Clinic
- Hospital
- MCHP

Buffer

Radius in meters

- Select any styling you wish to apply to the facilities.
- Show labels

Allows labels to be shown on the layer. Font size, weight and color can be modified here.
- Show buffer

Allows a visual buffer to be displayed on the layer around each facility. The radius of the buffer can be modified here. Buffer option is not available if associated geometry is used.
- Facilities can be styled an **organisation unit group set** using different icons. Select a group set from the list of organisation unit group sets defined for your DHIS2 instance. The system administrator can set the default organisation unit group set in the **System Settings** app.
- If no group set is selected, the facilities will be shown as filled circles. The color and the circle radius can be changed.

3. Click **ADD LAYER**.

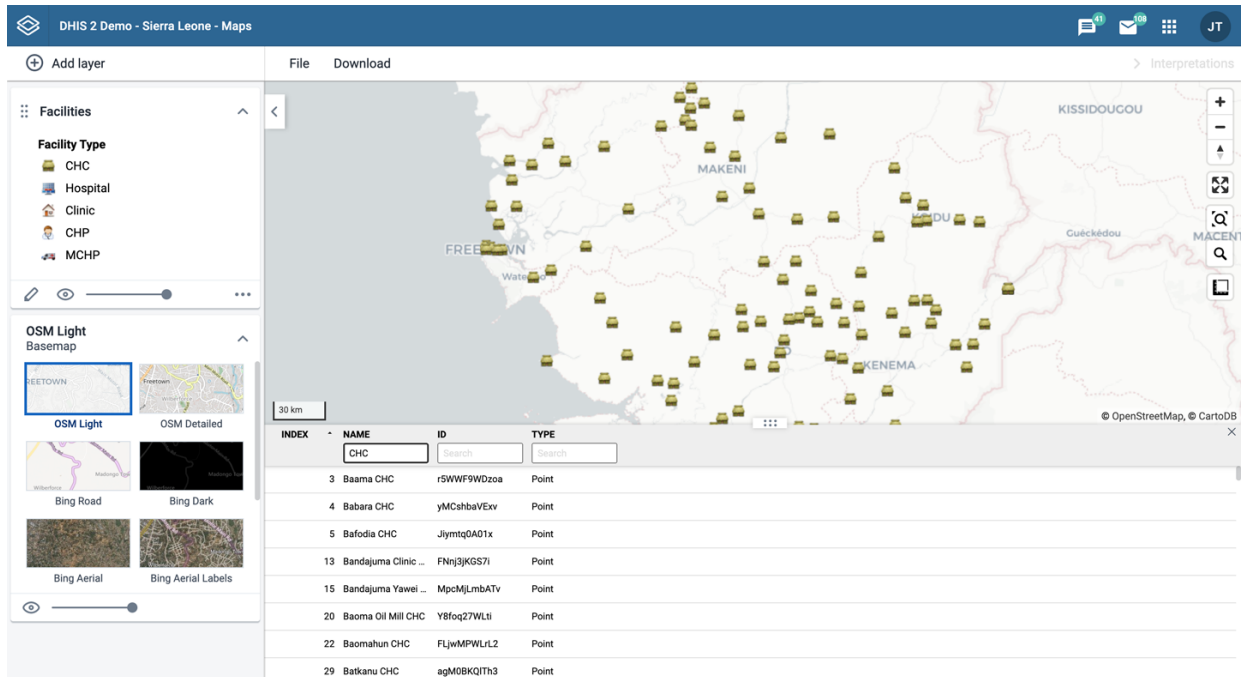
Create or modify a facility layer

1. In the layer panel, click the edit (pencil) icon on the facility layer card.
2. Modify the setting on the GROUP SET, ORGANISATION UNITS and STYLE tabs as desired.

3. Click **UPDATE LAYER**.

Filter values in a facility layer

Facility layers have a **data table** option that can be toggled on or off from the facility layer card.



The screenshot shows the DHIS 2 Maps application interface. On the left, there is a 'Facilities' panel with a 'Facility Type' filter set to 'CHC'. Below it, there are basemap options including OSM Light, OSM Detailed, Bing Road, Bing Dark, Bing Aerial, and Bing Aerial Labels. The main map area displays a map of Sierra Leone with numerous yellow CHC icons. A data table is open at the bottom of the map, showing a list of facilities with columns for INDEX, NAME, ID, and TYPE. The NAME column is filtered to show only 'CHC'.

INDEX	NAME	ID	TYPE
	CHC	<input type="text"/>	<input type="text"/>
3	Baama CHC	rSWWF9WDzoa	Point
4	Babara CHC	yMCshbaVEv	Point
5	Bafodia CHC	Jytmq0A01x	Point
13	Bandajuma Clinic ...	FNn3JKGS7i	Point
15	Bandajuma Yawel ...	MpcMjLmbATv	Point
20	Baoma Oil Mill CHC	Y8foq27WLi	Point
22	Baomahun CHC	FLjwMPWLR2	Point
29	Batkanu CHC	agMOBKQITh3	Point

The data table displays the data forming the facility layer.

- clicking on a title will sort the table based on that column; toggling between ascending and descending.
- entering text or expressions into the filter fields below the titles will apply those filters to the data, and the display will adjust according to the filter. The filters are applied as follows:
 - **NAME**
filter by name containing the given text
 - **ID**
filter by IDs containing the given text
 - **TYPE**
filter by GIS display types containing the given text

Note

Data table filters are temporary and are not saved with the map layers as part of the favourite.

Search for a facility

The NAME filter field in the data table provides an effective way of searching for individual facilities.

Open organisation unit profile

You can open the [organisation unit profile](#) in three ways:

1. Click on any of the organisation units shown on the map, and click the **View profile** button in the popup.
2. Right-click one of the organisation units on the map, and select **View profile** from the menu.
3. Click on an organisation unit row in the **data table**.

Remove facility layer

To clear all data in a facility layer:

1. In the layer card to the left, click the *more actions* (three dots) icon and then on **Remove layer**.

The layer is removed from the current map.

Manage org unit layers

The org unit layer displays the borders and locations of your organisation units. This layer is particularly useful if you are offline and don't have access to background maps.

The screenshot shows the DHIS 2 Maps app interface. On the left, the 'Organisation units' layer panel is visible, showing a list of layers including 'District', 'Chiefdom', 'OSM Light Basemap', 'OSM Light', 'OSM Detailed', 'Bing Road', 'Bing Dark', 'Bing Aerial', and 'Bing Aerial Labels'. The 'Organisation units' layer is selected. A popup window for 'Selenga' is displayed over the map, showing details such as 'Level: 3', 'Parent unit: Bo', and a 'View profile' button. On the right, the 'Organisation unit profile' for 'Selenga' is shown, displaying various statistics for the year 2021.

Year	Expected pregnancies	Total population < 5 years	Total Population	Total population < 1 year	Population of women of child bearing age (WRA)	BCG Coverage <1y	ANC 1 Coverage	FIC <1y
2021	248	918	5633	225	1152	83.6	91.1	70.7

Org unit layers are represented by layer cards in the layer panel such as:

Along the top of the org unit card from left to right are:

- A grab field to allow dragging and re-ordering layers with the mouse
- The **Organisation unit** title
- An arrow symbol to collapse and expand the org unit card

Along the bottom of the org unit card from left to right are:

- An edit (pencil) button to open the layer configuration dialog
- An eye symbol for toggling the visibility of the layer

- A slider for modifying the layer transparency
- A more actions (three dots) button with additional options:
- A **data table** toggle button to show or hide the data table associated with the layer
- **Download data** allows you to download the data for this layer in GeoJSON format for use in other mapping software
- **Edit layer** is the same as edit button above
- **Remove layer** will remove this layer from the current map.

Create an org unit layer

To create an org unit layer, choose **Org units** on the **Add layer** selection. This opens the org unit layer configuration dialog.

1. In the **ORGANISATION UNITS** tab

Add new org unit layer

Organisation Units
Style


- ▾ Sierra Leone
- Bo
- Bombali
- Bonthe
- Kailahun
- Kambia
- Kenema
- Koinadugu
- Kono
- Moyamba
- Port Loko
- Pujehun
- Tonkolili
- Western Area

Select levels


District X
Chiefdom X
▾

Select groups


User organisation units



Main



Below



2 x below

Use associated geometry

Cancel
Add layer

- select the organisation unit level(s) and/or group(s) from the selection fields on the right hand side.
- Select the organisation units you want to include in the layer. It is possible to select either
- One or more specific organisation units, or

- A relative level in the organisation unit hierarchy, with respect to the user. By selecting a **User organisation unit** the map data will appear differently for users at different levels in the organisation unit hierarchy.
- **Use associated geometry**: This dropdown will only show if there are any additional geometry available for your organisation units. This is typically used to show facility catchment areas.

2. In the **STYLE** tab:

Add new org unit layer

Organisation Units
Style

Labels

Size

Boundary color

▼

Point radius

Style by group set

Area ▼

Eastern Area

Northern Area

Southern Area

Western Area

Cancel

Add layer

- select any styling you wish to apply to the org units.
- Labels
 - Allows labels to be shown on the layer. Font style can be modified here.
- Boundary color
 - Allows the boundary or outline color of the organisation units to be changed.
- Point radius
 - Sets the base radius when point type elements, such as facilities, are presented on the org unit layer.

- Organisation units can be styled an **organisation unit group set** using different colors. Select a group set from the list of organisation unit group sets defined for your DHIS2 instance.

3. Click **ADD LAYER**.

Modify an org unit layer

1. In the layer panel, click the edit (pencil) icon on the org unit layer card.
2. Modify the setting on the ORGANISATION UNITS and STYLE tabs as desired.
3. Click **UPDATE LAYER**.

Filter values in an org unit layer

Org unit layers have a **data table** option that can be toggled on or off from the org unit layer card.

The data table displays the data forming the org unit layer.

- clicking on a title will sort the table based on that column; toggling between ascending and descending.
- entering text or expressions into the filter fields below the titles will apply those filters to the data, and the display will adjust according to the filter. The filters are applied as follows:

- **NAME**

filter by name containing the given text

- **LEVEL**

filter level by numbers and/or ranges, for example: 2,>3&\<8

- **PARENT**

filter by parent names containing the given text

- **ID**

filter by IDs containing the given text

- **TYPE**

filter by GIS display types containing the given text

Note

Data table filters are temporary and are not saved with the map layers as part of the favourite.

Search for an organisational unit

The NAME filter field in the data table provides an effective way of searching for individual organisational units displayed in the org unit layer.

Open organisation unit profile

You can open the [organisation unit profile](#) in three ways:

1. Click on any of the organisation units shown on the map, and click the **View profile** button in the popup.
2. Right-click one of the organisation units on the map, and select **View profile** from the menu.
3. Click on an organisation unit row in the **data table**.

Navigate between organisation hierarchies

You can modify the target of the org unit layer in the hierarchy without using the level/parent user interface.

1. Right-click one of the organisation units.
2. Select **Drill up one level** or **Drill down one level**.

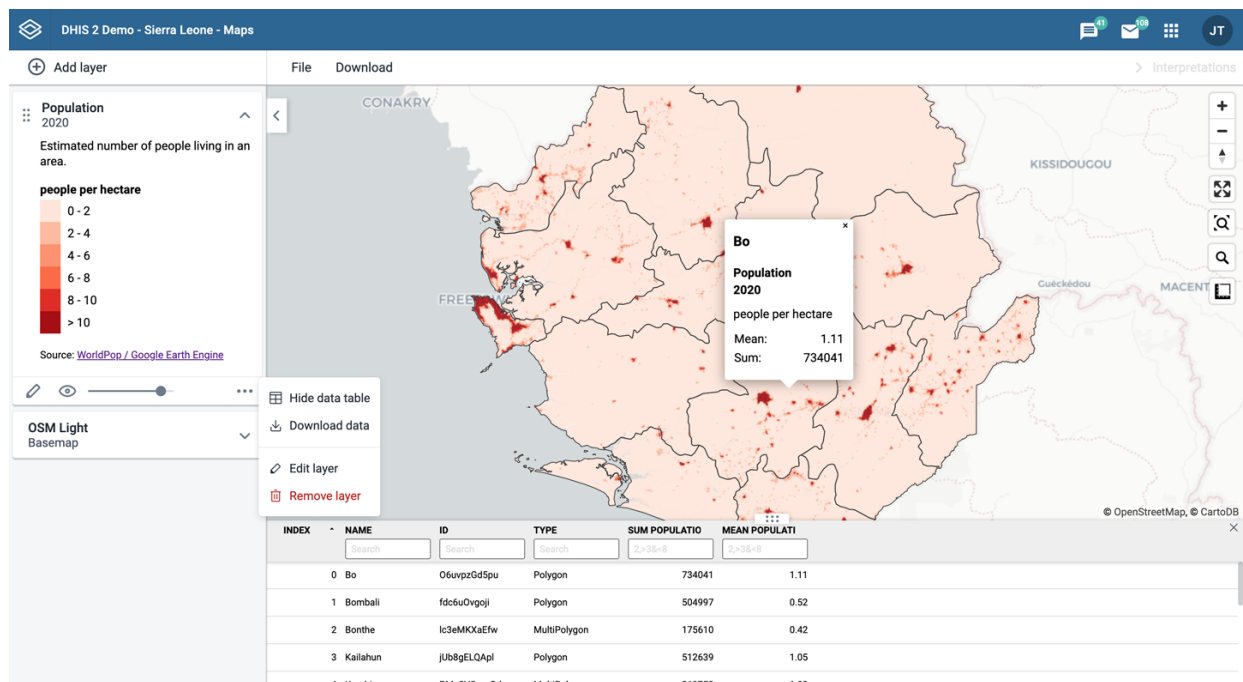
The drill down option is disabled if you are on the lowest level. Likewise the drill up option is disabled from the highest level.

Remove org unit layer

To clear all data in an org unit layer:

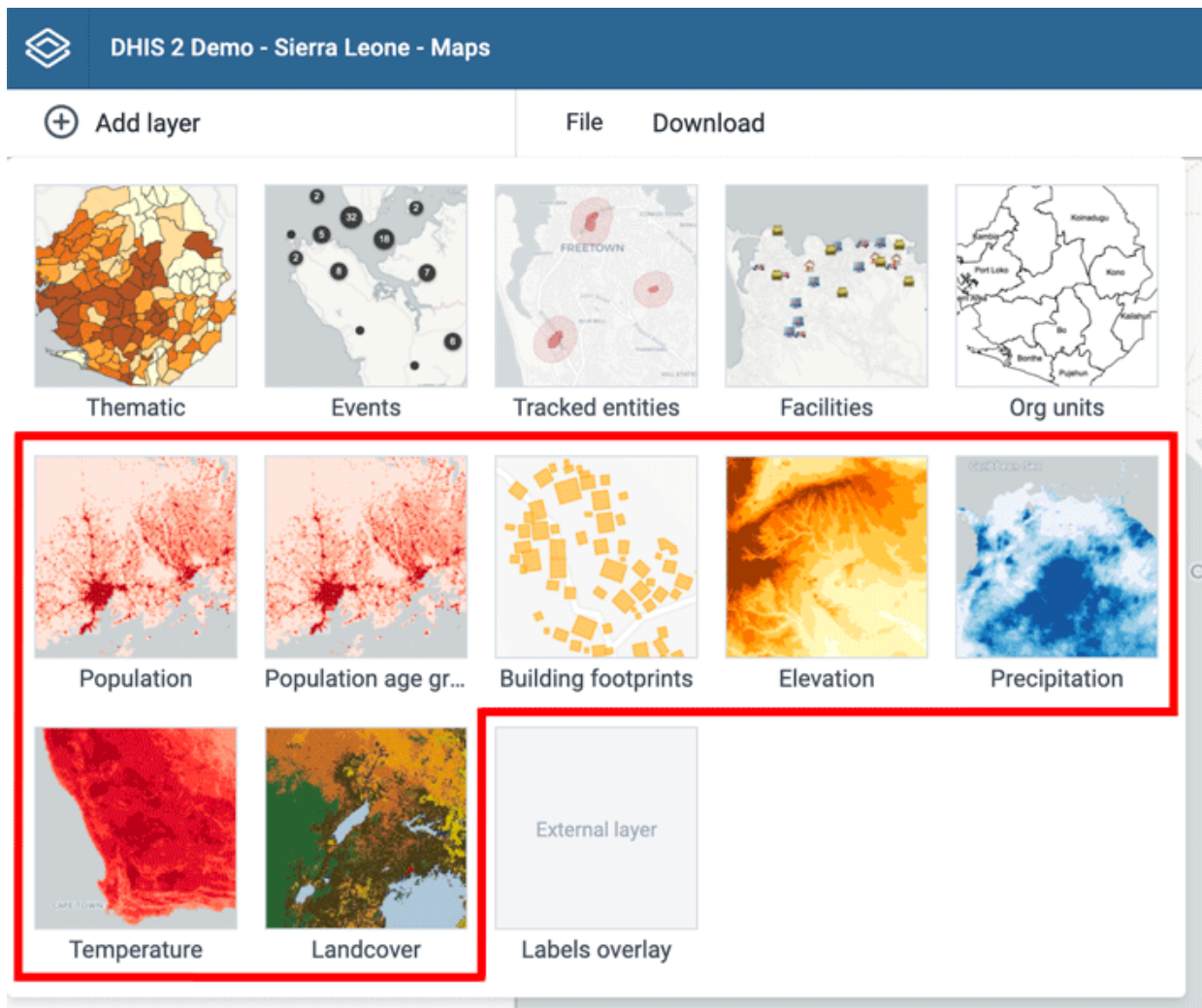
1. In the layer card to the left, click the *more actions* (three dots) icon and then on **Remove layer**.
The layer is removed from the current map.

Manage Earth Engine layer



The layers from Google Earth Engine let you display and aggregate external data to your organisation units. Use the population layer to calculate the number of people living in a district, or within a distance from a health facility. The elevation layer allows you to find the lowest, highest and mean elevation. Use the landcover layer to see the forest cover, croplands or urban areas, and calculate the percentage for each organisation unit.

The following layers are supported:



- **Population:** Detailed population data from WorldPop showing the estimated number of people living in an area. Available for yearly periods from 2000 and onwards.
- **Population age groups:** Estimated number of people living in an area, grouped by age and gender.
- **Building footprints:** The outlines of buildings derived from high-resolution satellite imagery. Only for the continent of Africa.
- **Elevation:** Elevation above sea level.
- **Precipitation:** The values are in millimeters within 5 days periods. Updated monthly, during the 3rd week of the following month. Collected from satellite and weather stations on the ground.
- **Temperature:** Land surface temperatures collected from satellite. Blank spots will appear in areas with a persistent cloud cover.
- **Land cover:** 17 distinct landcover types collected from satellites by NASA.

Create an Earth Engine layer

To create an Earth Engine layer, choose the desired layer from the **Add layer** selection. This opens the layer configuration dialog.

1. In the **DATA** tab:

Add new population age groups layer

Data
Period
Organisation Units
Style

ⓘ Estimated number of people living in an area, grouped by age and gender.
 Data will be calculated on Google Earth Engine for the chosen organisation units.
 Multiple aggregation methods are available. See the aggregation results by clicking map regions or viewing the data table. The results can also be downloaded.

Groups

Men 0 - 1 years ×
Women 0 - 1 years ×
▼

Aggregation method

Sum ×
Mean ×
▼

Unit: people per hectare

Source: [WorldPop / Google Earth Engine](#)

Cancel
Add layer

- For "population age groups" you can select the age/gender **groups** you would like to include when aggregating the data.
- Select the **aggregation methods** you would like to use when calculating values for the selected organisation units.
- **Sum**: Calculates the total number within each organisation unit. Recommended to use for the population layers.
- **Min**: Returns the minimum value in the layer unit displayed below the selection. For population layers it will be the minimum *people per hectare*. For elevation layer it will return the lowest elevation (meters above sea level).
- **Max**: Returns the maximum value in the layer unit. For population layers it will be the minimum *people per hectare*. For elevation layer it will return the highest elevation for each organisation unit.
- **Mean**: Returns the mean value in the layer unit. For population layers it will be the mean *people per hectare*. For precipitation layer it will be the mean rainfall in millimeters across the organisation unit.
- **Median**: Returns the mean value in the layer unit. For population layers it will be the median *people per hectare*. For temperature layer it will be the median °C during daytime for the organisation unit.
- **Standard deviation**: Returns the standard deviation value in the layer unit.

- **Variance:** Returns the variance value in the layer unit.

2. In the **PERIOD** tab

Add new population age groups layer

Data **Period** Organisation Units Style

Period

2020

Available periods are set by the source data

- Select the period for the data source. The available periods are set by data provider. There is only one period for the "population age groups" layer, while the "population" layer has yearly data available from 2000 and onwards. Precipitation data is available in 5 days periods, and temperature data for 8 days periods.

3. In the **ORG UNITS** tab:

Add new population age groups layer

Data
Period
Organisation Units
Style


- ▼ Sierra Leone
- ▶ Bo
- ▶ Bombali
- ▶ Bonthe
- ▶ Kailahun
- ▶ Kambia
- ▶ Kenema
- ▶ Koinadugu
- ▶ Kono
- ▶ Moyamba
- ▶ Port Loko
- ▶ Pujehun
- ▶ Tonkolili
- ▶ Western Area

Select levels


District ×
▼

Select groups


User organisation units



Main



Below



2 x below

Use associated geometry

Cancel
Add layer

- Select the organisation units you where you want to see aggregated data values. It is possible to select either
 - One or more specific organisation units, organisation unit levels in the hierarchy, organisation unit groups, or
 - A relative level in the organisation unit hierarchy, with respect to the user. By selecting a **User organisation unit** the map data will appear differently for users at different levels in the organisation unit hierarchy.
- **Use associated geometry**: This dropdown will only show if there are any additional geometry available for your organisation units. This is typically used to calculate values for facility catchment areas.
- **Building footprints**: Building counts are only available for smaller organisation unit areas.

4. In the **STYLE** tab

Add new population age groups layer


Data
Period
Organisation Units
Style

Unit: people per hectare

Min

Max

Steps



Legend preview

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- > 10

Buffer

Radius in meters

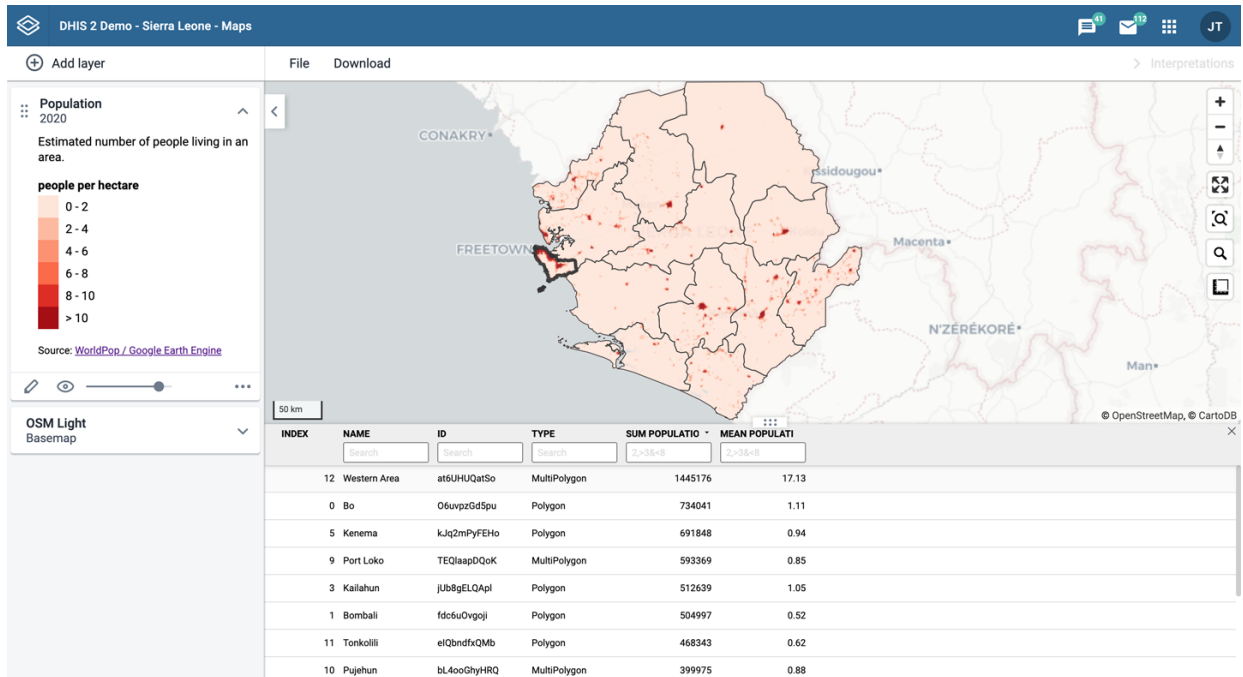
- Modify the parameters specific to the layer type.
- Adjust the legend range, steps and colors, as desired.
- If you select organisation units having a single point coordinate (facilities) you can set a radius buffer to calculate the data value within. A radius of 5000 meters will aggregate all values available within a 5 km distance from a facility. Buffer option is not available if associated geometry is used.

5. Click **ADD LAYER**.

Click on the map regions or facilities to see the aggregation result for that organisation unit.

Listing of data values

Earth Engine layers have a **data table** option that can be toggled on or off from the layer card.



The data table displays all the aggregated values for the organisation units selected.

- clicking on a title will sort the table based on that column; toggling between ascending and descending.

- entering text or expressions into the filter fields below the titles will apply those filters to the data, and the display will adjust according to the filter. The filters are applied as follows:

- NAME

filter by org unit name containing the given text

- ID

filter by event IDs containing the given text

- TYPE

filter by GIS display types containing the given text

- AGGREGATION VALUES

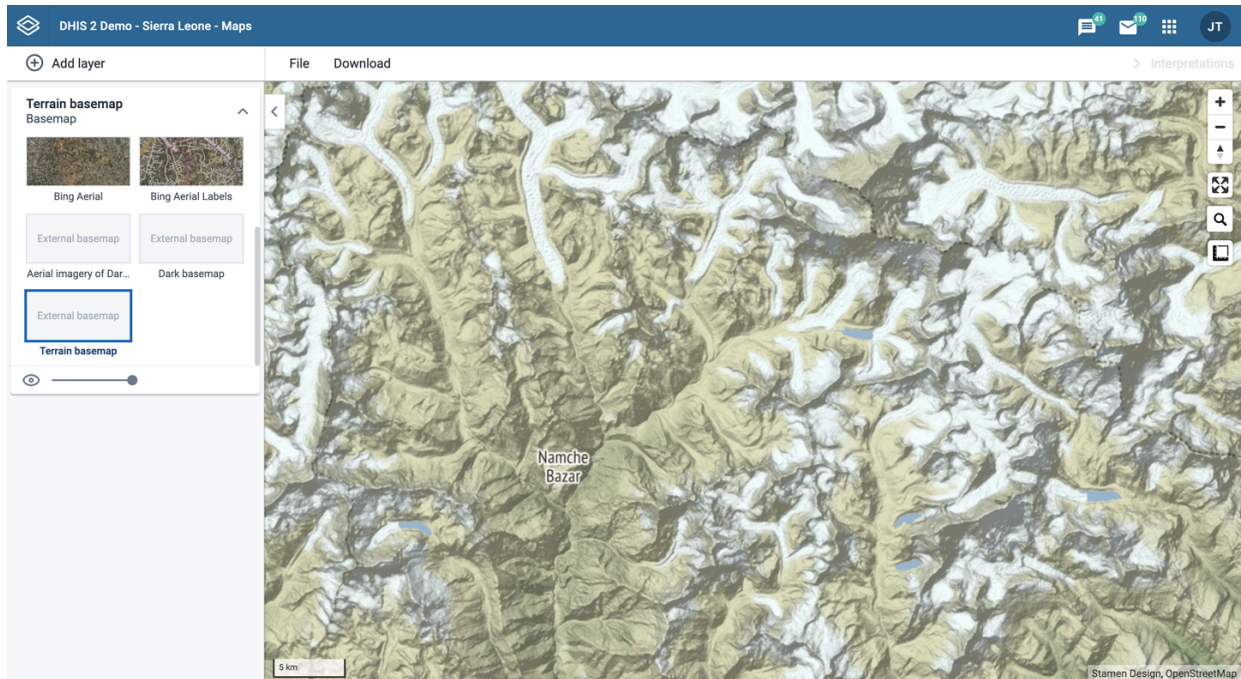
there is one column for each of the aggregation types selected

numeric data values can be filtered by given numbers, and/or ranges, for example: $2, >3 \& \lt 8$

Note

Data table filters are temporary and are not saved with the map layers.

Add external map layers



External map layers are represented as either:

- Basemaps

These are available in the **basemap** card in the layers panel and are selected as any other basemap.

- Overlays

These are available in the **Add layer** selection. Unlike basemaps, overlays can be placed above or below any other overlay layers.

Overlay layers are represented by additional layer *cards* in the layer panel such as:

Along the top of the overlay card from left to right are:

- A grab field to allow dragging and re-ordering layers with the mouse
- The title of the external map layer
- An arrow symbol to collapse and expand the overlay card

In the middle of the card is a legend if the layer has one.

Along the bottom of the overlay card from left to right are:

- A slider for modifying the layer transparency
- A delete (trash can) icon to remove the layer from the current thematic map.

Organisation unit profile

The screenshot displays the DHIS 2 Maps interface for Sierra Leone. The map shows various health facilities, with 'Yele CHC' highlighted. A pop-up window for 'Yele CHC' is visible, containing a 'View profile' button. On the right side, the 'Organisation unit profile' panel is open, showing detailed information for 'Yele CHC'.

Organisation unit profile	
Yele CHC	
Level:	Facility (4)
Parent:	Gbonkonlenken
Facility Ownership	Public facilities
Facility Type	CHC
Code	OU_268207
Short name	Yele CHC
Opening date	1970-01-01
Longitude	-11.8329
Latitude	8.4141
ID	sesv0eXlJbQ
2021	
Expected pregnancies	271
Total population < 5 years	1004
Total Population	6162
Total population < 1 year	246
Population of women of child bearing age (WRA)	1260

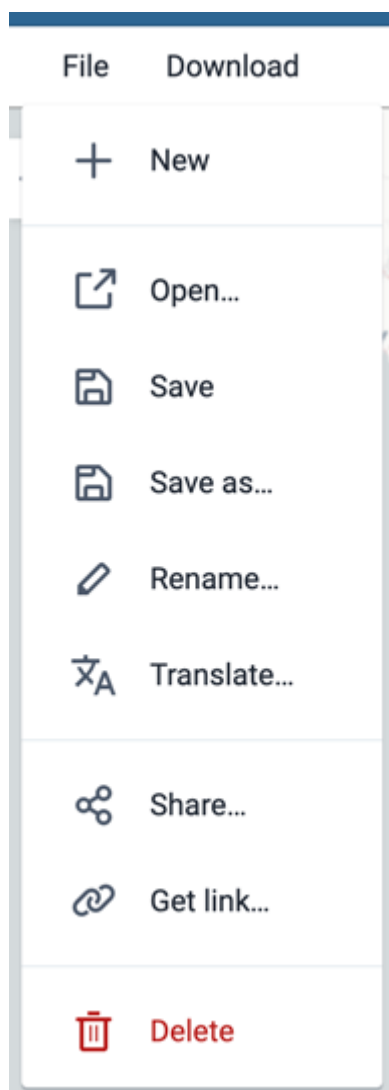
The organisation unit profile shows detailed information about each organisation unit. You can open the profile from org unit, facility and thematic layers.

You can open the organisation unit profile in three ways:

1. Click on any of the organisation units shown on the map, and click the **View profile** button in the popup.
2. Right-click one of the organisation units on the map, and select **View profile** from the menu.
3. Click on an organisation unit row in the **data table**.

The profile will show on the right side of the map. The profile contents is set by the system administrator.

File menu



Use the **File menu** to manage your maps. Several menu items will be disabled until you open or save a map.

Saving your maps makes it easy to restore them later. It also gives you the opportunity to share them with other users as an interpretation or put it on the dashboard. You can save all types of layer configurations as a favorite.

Create a new map

Click **File > New**.

NB! This will clear the current map layers you have without saving.

Open a new map

1. Click **File > Open**. A dialog box opens with a list of maps.
2. Find the favorite you want to open. You can either use \< and > or the search field to find a saved map. The list is filtered on every character that you enter. You can filter the list by selecting **Show all**, **Created by me** or **Created by others**.
3. Click the name of the map you want to open.

Save a map

When you have created a map it is convenient to save it for later use:

1. Click **File > Save**.
2. Enter a **Name** (required) and a **Description** (optional) the first time you save a map.
3. Click **SAVE**.

Save a copy of a map

1. Click **File > Save as...**
2. Enter a **Name** (required) and a **Description** (optional) for the map.
3. Click **SAVE**.

Rename a map

1. Click **File > Rename**.
2. Enter a new **Name** and/or **Description** for your map.
3. Click **RENAME**. The map is updated.

Translate a map

1. Click **File > Translate**.
2. Select the **Locale** (language) your translation.
3. Enter a translated **Name** and **Description**. The original text will show below the field.
4. Click **SAVE**.

Modify sharing settings for a map

After you have created a map and saved it, you can share the map with everyone or a user group. To modify the sharing settings:

1. Click **File > Share**. The sharing settings dialog opens.
2. In the text box, search for the name of the user or group you want to share your favorite with and select it.

The chosen user or group is added to the list of recipients.

Repeat the step to add more user groups.

3. If you want to allow external access, select the corresponding box.

Note that in order for logged in and not logged in users to have access, you must also allow public access.

4. For each user group, choose an access setting. The options are:

- None (for default groups only, as they cannot be removed)
- Can view
- Can edit and view

- Click **CLOSE** to close the dialog.

Get the link to a map

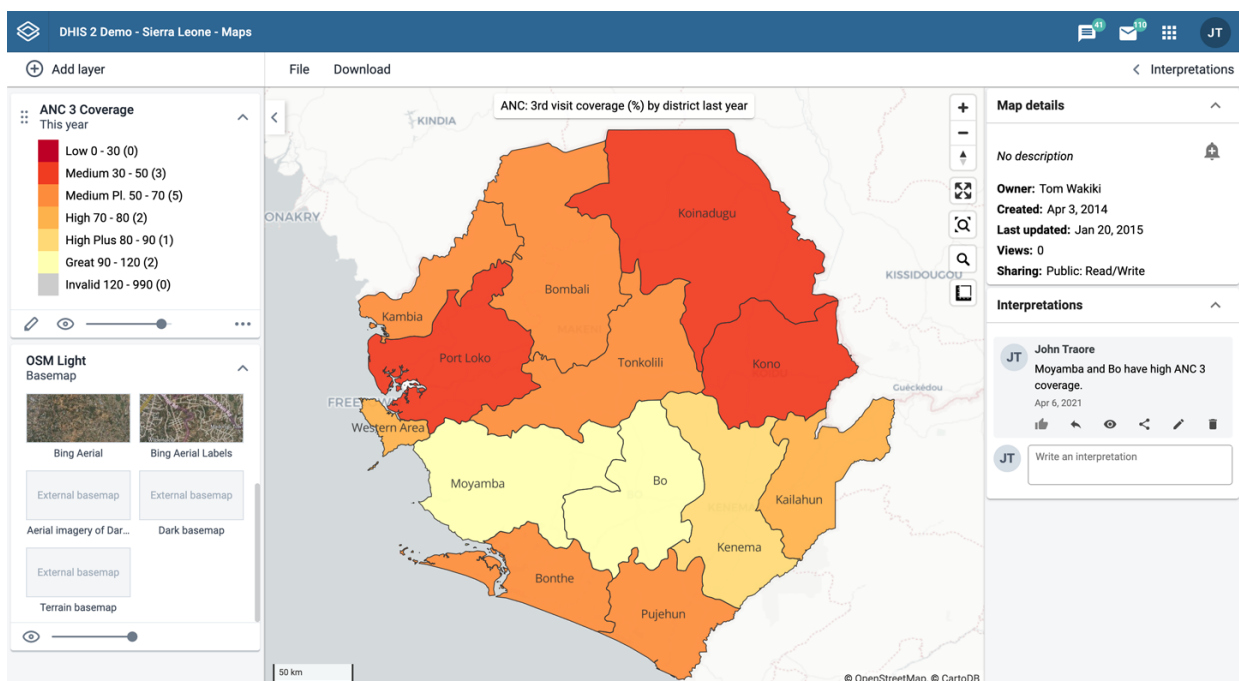
- Click **File** > **Get link**. A link dialog opens.
- Copy the link.

Delete a map

- Click **File** > **Delete**. A confirmation dialog is displayed.
- Click **DELETE** to confirm that you want to delete the favorite. Your map is deleted and the layers are cleared from the view.

Map interpretations

An interpretation is a description of a map at a given period. This information is visible in the **Dashboard app**. Click **Interpretations** in the top right of the workspace to open the interpretations panel. The button is only clickable if the map is saved.



View interpretations based on relative periods

To view interpretations for relative periods, such as a year ago:

- Open a favorite with interpretations.
- Click **Interpretations** in the top right of the workspace to open the interpretations panel.
- Click an interpretation. Your map displays the data and the date based on when the interpretation was created. To view other interpretations, click them.

Write interpretation for a map

To create an interpretation, you first need to create a map and save it. If you've shared your map with other people, the interpretation you write is visible to those people.

- Open a favorite with interpretations.

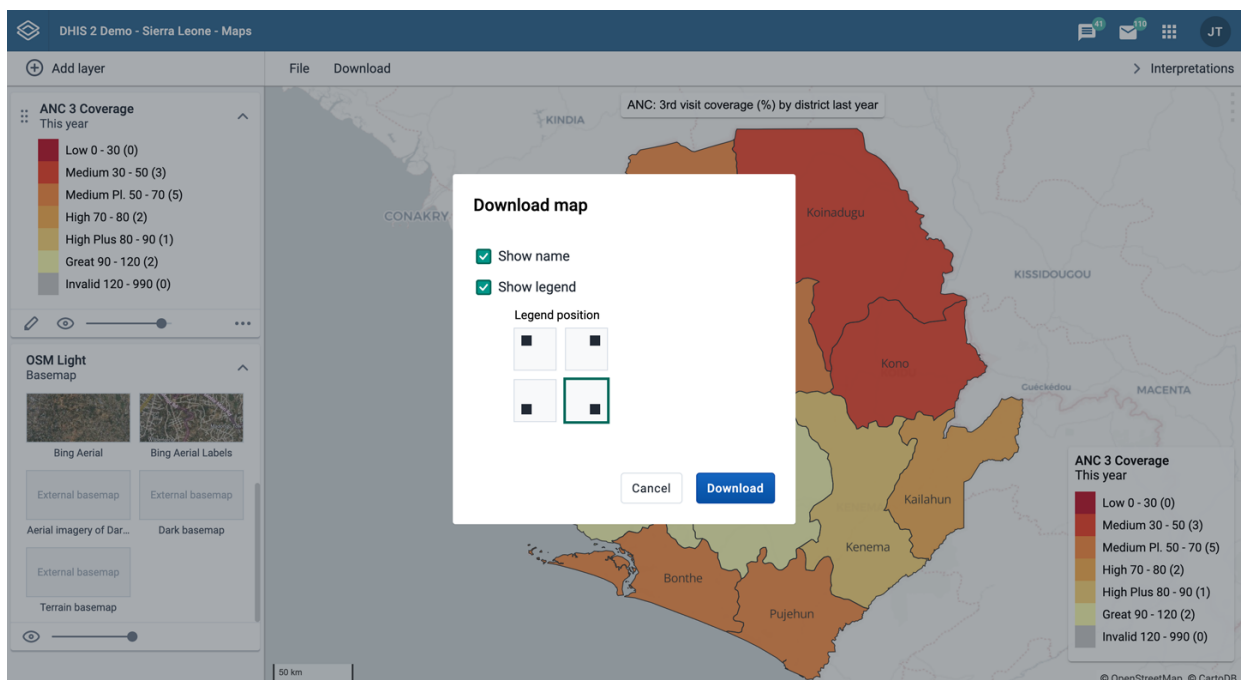
2. Click **Interpretations** in the top right of the workspace to open the interpretations panel.
3. A text field will appear with a placeholder "Write an interpretation" for users that have read access to the favorite.
4. In the text field, type a comment, question or interpretation. You can also mention other users with '@username'. Start by typing '@' plus the first letters of the username or real name and a mentioning bar will display the available users. Mentioned users will receive an internal DHIS2 message with the interpretation or comment. You can see the interpretation in the **Dashboard app**.
5. Click **SAVE** if you want your interpretation to have the same sharing settings as the map.
Click **SAVE & SHARE** if you want to change the sharing settings (see below) for your interpretation.

Change sharing settings for an interpretation

1. Click an interpretation (see how to view an interpretation above).
2. Click **Share** below the interpretation. The sharing settings dialog opens.
3. Search for and add a users and user groups that you want to share your map with.
4. Change sharing settings for the users you want to modify:
 - **Can edit and view:** Everyone can view and edit the object.
 - **Can view only:** Everyone can view the object.
 - **No access:** The public won't have access to the object. This setting is only applicable to Public access.
5. Click **CLOSE** when sharing settings are updated.

Save a map as an image

You can download your map as an image by clicking on the Download button in the top menu

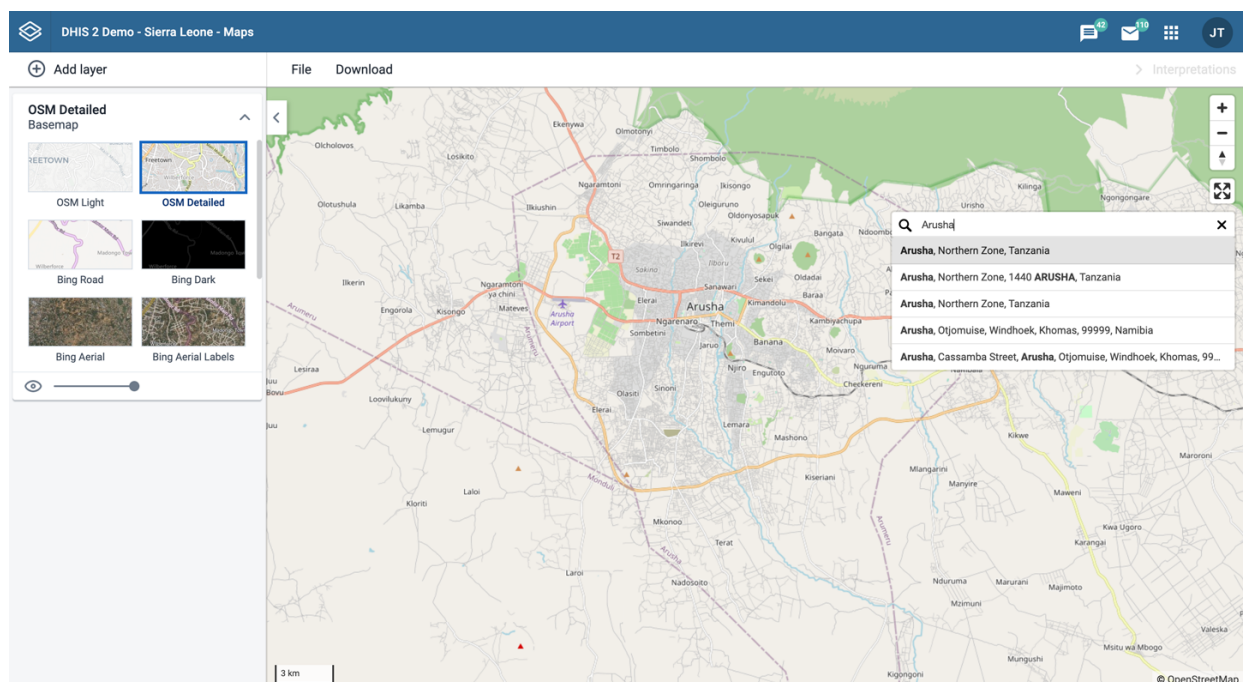


Map download is not supported in Internet Explorer or Safari, we recommend to use Google Chrome or Firefox.

1. Select if you want to include the map name or not. This option is only available if the map is saved.
2. Select if you want to include the map legend. You can position the legend in one of the 4 corners of your map.
3. Click **Download** to download your map.

Search for a location

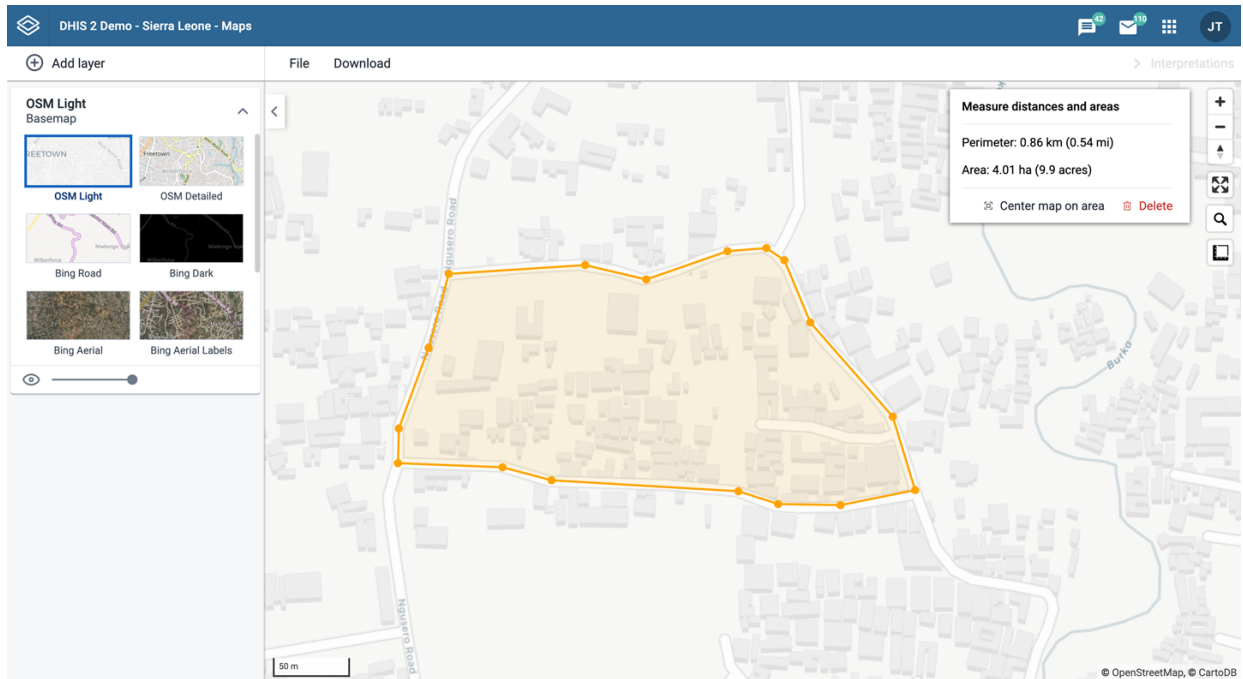
The place search function allows you to search for almost any location or address. This function is useful in order to locate for example sites, facilities, villages or towns on the map.



1. On the right side of the Maps window, click the magnifier icon.
2. Type the location you're looking.
A list of matching locations appear as you type.
3. From the list, select a location. A pin indicates the location on the map.

Measure distances and areas in a map

1. In the upper left part of the map, put the cursor on the **Measure distances and areas (ruler)** icon and click **Create new measurement**.
2. Add points to the map.
3. Click **Finish measurement**.



Get the latitude and longitude at any location

Right-click a point on the map and select **Show longitude/latitude**. The values display in a pop-up window.

See also

- [Manage legends](#)

Analyze data in pivot tables

About the Pivot Table app

With the **Pivot Table** app, you can create pivot tables based on all available data dimensions in DHIS2. A pivot table is a dynamic tool for data analysis which lets you summarize and arrange data according to its dimensions. Examples of data dimensions in DHIS2 are:

- data dimension itself (for example data elements, indicators and events)
- periods (representing the time period for the data)
- organisation hierarchy (representing the geographical location of the data)

From these dimensions you can freely select *dimension items* to include in the pivot table. You can create additional dimensions in DHIS2 with the group set functionality. This allows for different aggregation pathways, such as aggregation by "Partner" or facility type.

A pivot table can arrange data dimensions on *columns*, *rows*, and as *filters*. When you place a data dimension on columns, the pivot table will display one column per dimension item. If you place multiple data dimensions on columns, the pivot table displays one column for all combinations of the items in the selected dimensions. When you place a data dimension on rows, the pivot table displays one row per dimension item in a similar fashion. The dimensions you select as filters will not be included in the pivot table, but will aggregate and filter the table data based on the selected filter items.

Tip

- You must select at least one dimension on columns or rows.
- You must include at least one period.
- Data element group sets and reporting rates can't appear in the same pivot table.
- A pivot table can't contain more than the maximum number of analytic records which have been specified in the system settings. The maximum number of records could also be constrained by the maximum RAM which is available to your browser. You will be prompted with a warning if your requested table exceeds a particular size. From this prompt, you can either cancel the request or continue building the table. Consider making smaller tables instead of one table which displays all of your data elements and indicators together.
- The **Pivot Table** app supports drill-down and up for periods and organisation unit. This means that you can for example drill down from yearly periods to quarters, months and weeks inside a pivot table. You can also drill down from the global organisation unit to countries, provinces and facilities.

Create a pivot table

1. Open the **Pivot Table** app.
2. In the menu to the left, select the dimension items you want to analyse, for example data elements or indicators.
3. Click **Layout** and arrange the data dimensions as columns, rows and filters.

You can keep the default selection if you want.

4. Click **Update**.

In this example, indicators are listed as columns and periods as rows.

Periods / Data	BCG doses given	Fully Immunized child	Measles doses given	OPV3 doses given	Penta3 doses given	Total
October 2014	16 691	14 065	15 763	14 006	14 106	74 631
November 2014	17 400	14 812	16 679	15 866	16 034	80 791
December 2014	13 634	11 743	11 798	10 292	10 812	58 279
January 2015	20 031	14 579	16 379	14 446	14 646	80 081
February 2015	20 483	15 732	18 208	15 992	16 245	86 660
March 2015	19 396	16 200	17 563	15 304	15 600	84 063
April 2015	20 410	15 526	17 422	15 335	15 790	84 483
May 2015	22 402	17 765	19 386	16 711	17 191	93 455
June 2015	23 243	15 762	17 875	16 143	16 601	89 624
July 2015	21 589	15 705	17 063	16 741	16 622	87 720
August 2015	20 485	17 499	19 144	18 024	18 247	93 399
September 2015	21 130	17 841	19 645	17 924	18 108	94 648
Total	236 894	187 229	206 925	186 784	190 002	1 007 834

Select dimension items

The left menu lists sections for all available data dimensions. From each section you can select any number of dimension items. As an example, you can open the section for data elements and select any number of data elements from the available list. You can select an item by marking it and clicking on the arrow in the section header or simply double-clicking on the item. Before you can use a data dimension in your pivot table you must at least select one dimension item. If you arrange a dimension as columns or rows but do not select any dimension items, the dimension is ignored.

You must choose at least one data dimension type to create a pivot table. The available types are described in this table:

Data dimension types

Data dimension type	Definition	Examples
Indicators	An indicator is a calculated formula based on data elements.	Coverage of immunization across a specific district.
Data elements	Represents the phenomenon for which data has been captured.	Number of malaria cases; number of BCG doses given.
Data sets	A collection of data elements grouped for data collection. You can select : * Reporting rates: the percentage of actual reports compared to the expected number of reports * Reporting rates on time: the reporting rates based on timely form submissions. A timely submission must happen within a number of days after the reporting period. * Actual reports: the actual number of reports * Actual reports on time: the actual number of reports based on timely form submissions. A	Reporting rates for immunization and morbidity forms.

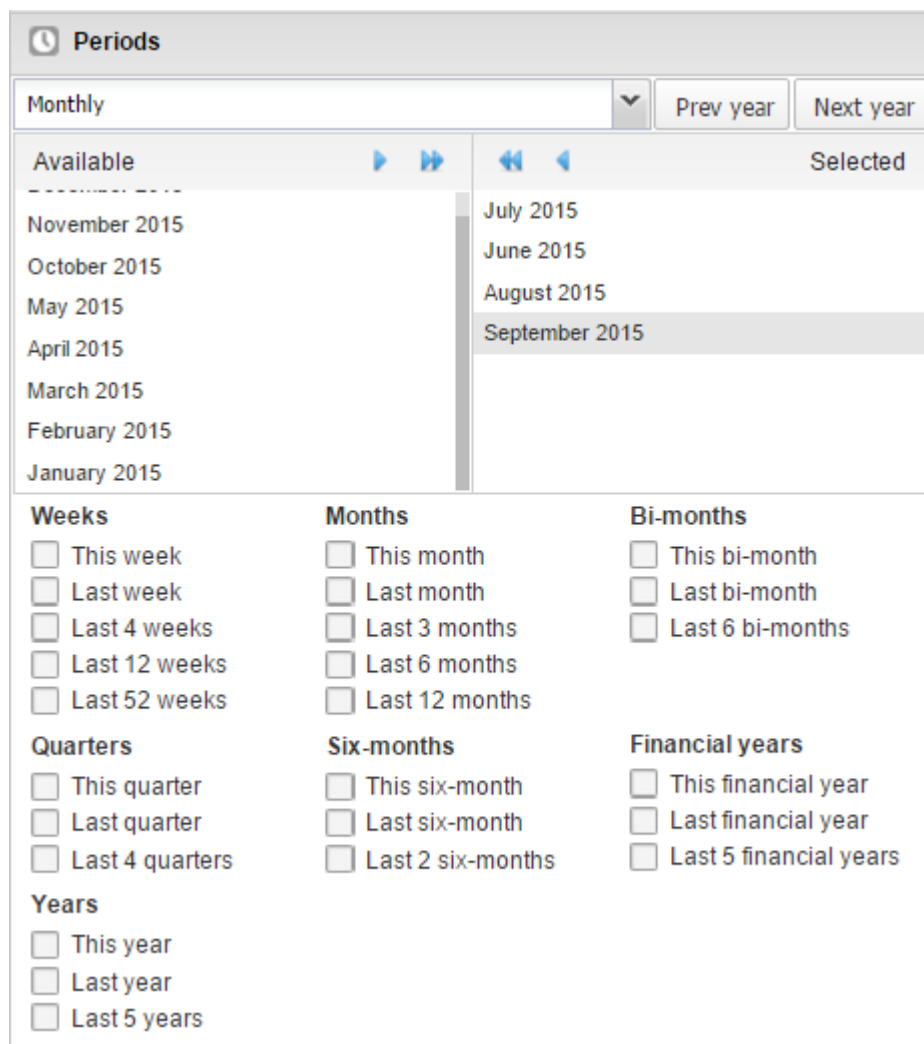
Data dimension type	Definition	Examples
	timely submission must happen within a number of days after the reporting period. * Expected reports: the number of expected reports based on organisation units where the data set and the reporting frequency has been assigned.	
Event data items	A data element that is part of a program representing events that have been captured.	Average weight and height for children in a nutrition program.
Program indicators	A calculated formula based on data elements in a program representing events.	Average BMI score for children in a nutrition program.

You can combine these dimensions to display for example aggregate data with reporting rates, or event data items together with program indicators, all in the same pivot tables. For the "data element" data dimension, you are also able to select "Totals" and "Details", which will allow you to view different category combination options together on the same pivot table.

For the period dimension you can choose between using fixed periods or relative periods. An example of a fixed period is "January 2012". To select fixed periods start by selecting a period type from the period type list. You can then select periods from the list of available periods.

Relative periods are periods relative to the current date. Examples of relative periods are "Last month", "Last 12 months", "Last 5 years". Relative periods can be selected by ticking the check-boxes next to each period. The main advantage of using relative periods is that when you save a pivot table favorite, it will stay updated with the latest data as time goes by without the need for constantly updating it.

For the organisation unit dimension you can select any number of organisation units from the hierarchy. To select all organisation units below a specific parent organisation unit, right click and click "Select all children". To manually select multiple organisation units, click and hold the **Ctrl** key while clicking on organisation units. You can tick "User org unit", "User sub-units" or "User sub-x2-units" in order to dynamically insert the organisation unit or units associated with your user account. This is useful when you save a pivot table favorite and want to share it with other users, as the organisation units linked with the other user's account will be used when viewing the favorite.



Periods

Monthly ▼ Prev year Next year

Available ▶▶ ◀◀ Selected

November 2015
October 2015
May 2015
April 2015
March 2015
February 2015
January 2015

July 2015
June 2015
August 2015
September 2015

Weeks

This week
 Last week
 Last 4 weeks
 Last 12 weeks
 Last 52 weeks

Months

This month
 Last month
 Last 3 months
 Last 6 months
 Last 12 months

Bi-months

This bi-month
 Last bi-month
 Last 6 bi-months

Quarters

This quarter
 Last quarter
 Last 4 quarters

Six-months

This six-month
 Last six-month
 Last 2 six-months

Financial years

This financial year
 Last financial year
 Last 5 financial years

Years

This year
 Last year
 Last 5 years

Dynamic dimensions can consist of organisation unit group sets, data element group sets, or category option group sets which have been configured with the type of "Disaggregation". Once the group sets have been configured, they will be come available in the pivot tables, and can be used as additional analysis dimensions, for instance to analyse aggregate data by Type of organisation unit or Implementing partner. Dynamic dimensions work the same as fixed dimensions.

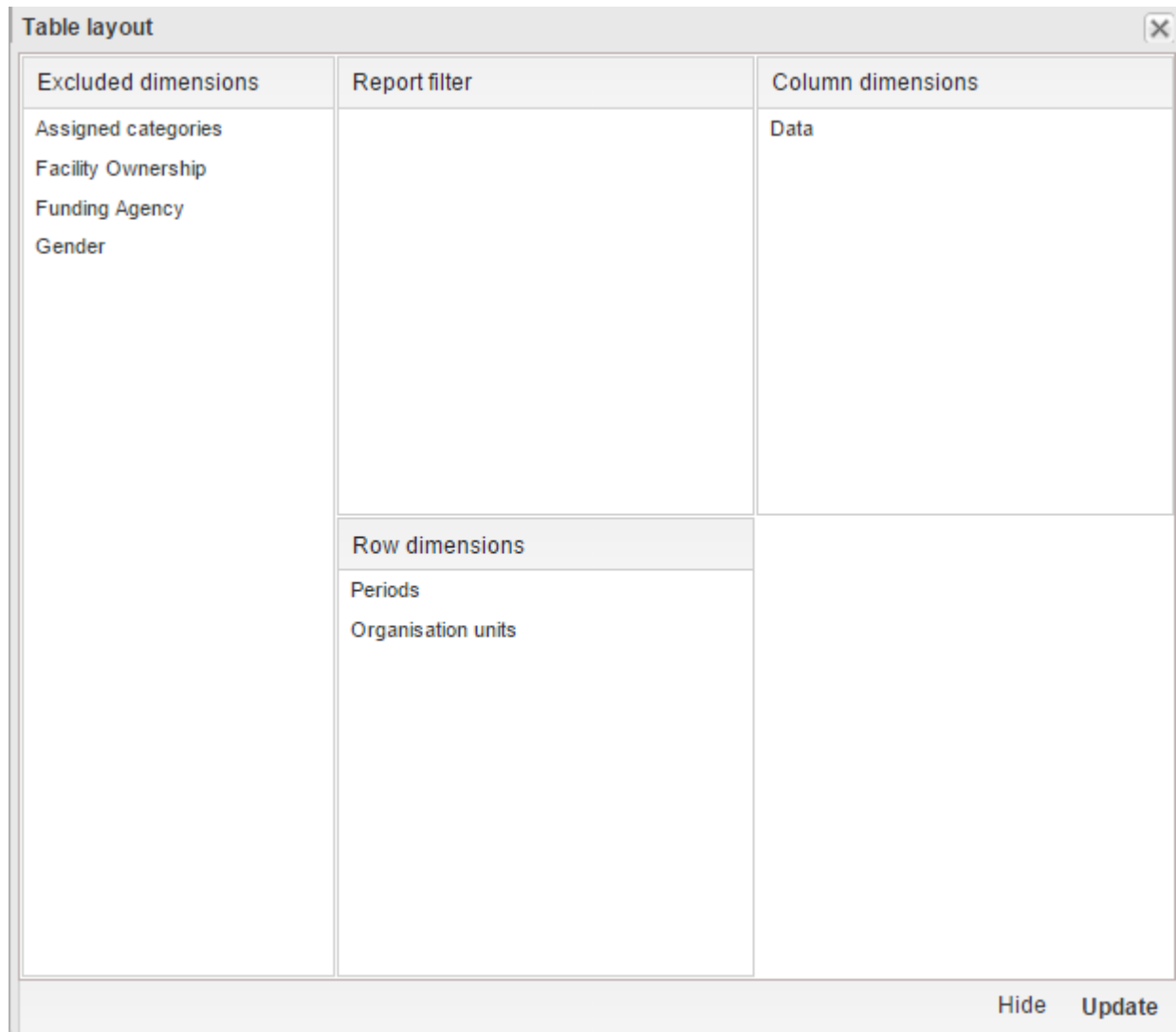
Tip

Some dynamic dimensions may contain many items. This can cause issues with certain browsers due to the length of the URL when many dimension members are selected. A special "All" check box is available for dynamic dimensions, which allows you to include all available dimensions implicitly in your pivot table, without specifying each and every dimension member.

Modify pivot table layout

After selecting data dimensions it is time to arrange your pivot table. Click "Layout" in the top menu to open the layout screen. In this screen you can position your data dimensions as table columns, rows or filters by clicking and dragging the dimensions from the dimensions list to the respective column, row and filter lists. You can set any number of dimensions in any of the lists. For instance, you can click on "Organisation units" and drag it to the row list in order to position the organisation unit dimension as table rows. Note that indicators, data elements and data set reporting rates are part of the common "Data" dimension and will be displayed together in the pivot table. For instance, after

selecting indicators and data elements in the left menu, you can drag "Organisation Unit" from the available dimensions list to the row dimension list in order to arrange them as rows in the pivot table.



After you have set up your pivot table you can click "Update" to render your pivot table, or click "Hide" to hide the layout screen without any changes taking effect. Since we in our example have selected both the period and organisation unit dimension as rows, the pivot table will generate all combinations of the items in these dimensions and produce a table like this:

Periods	Organisation units / Data	BCG doses given	Fully immunized child	Measles doses given	OPV3 doses given	Penta3 doses given	Total
June 2015	Bo	2 405	1 427	1 512	1 535	1 544	8 423
	Bombali	1 585	1 168	1 228	1 183	1 200	6 364
	Bonthe	779	472	515	541	534	2 841
		4 769	3 067	3 255	3 259	3 278	17 628
July 2015	Bo	2 255	1 351	1 382	1 559	1 492	8 039
	Bombali	1 438	1 219	1 252	1 300	1 303	6 512
	Bonthe	650	597	623	593	560	3 023
		4 343	3 167	3 257	3 452	3 355	17 574
August 2015	Bo	2 283	2 092	2 148	2 127	2 073	10 723
	Bombali	1 613	1 255	1 332	1 318	1 318	6 836
	Bonthe	792	621	650	641	667	3 371
		4 688	3 968	4 130	4 086	4 058	20 930
September 2015	Bo	2 392	1 508	2 067	1 732	1 737	9 436
	Bombali	1 526	1 344	1 432	1 337	1 403	7 042
	Bonthe	615	792	684	622	651	3 364
		4 533	3 644	4 183	3 691	3 791	19 842
Total		18 333	13 846	14 825	14 488	14 482	75 974

Change the display of your pivot table

1. Open the **Pivot Table** app.
2. Create a new pivot table or open a favorite.
3. Click **Options**.
4. Set the options as required.

Pivot table options

	Option	Description
Data	Show column totals	Displays total values in the table for each row and column, as well as a total for all values in the table.
	Show row totals	
	Show column sub-totals	Displays subtotals in the table for each dimension. If you only select one dimension, subtotals will be hidden for those columns or rows. This is because the values will be equal to the subtotals.
	Show row sub-totals	
	Show dimension labels	Shows the dimension names as part of the pivot tables.
	Hide empty rows	Hides empty rows from the table. This is useful when you look at large tables where a big part of the dimension items don't have data in order to keep the table more readable.
	Hide empty columns	Hides empty columns from the table. This is useful when you look at large tables where a big part of the dimension items

	Option	Description
		don't have data in order to keep the table more readable.
	Skip rounding	Skips the rounding of data values, offering the full precision of data values. Can be useful for finance data where the full dollar amount is required.
	Aggregation type	The default aggregation operator can be over-ridden here, by selecting a different aggregation operator. Some of the aggregation types are Count, Min and Max .
	Number type	<p>Sets the type of value you want to display in the pivot table: Value, Percentage of row or Percentage of column.</p> <p>The options Percentage of row and Percentage of column mean that you'll display values as percentages of row total or percentage of column total instead of the aggregated value. This is useful when you want to see the contribution of data elements, categories or organisation units to the total value.</p>
	Measure criteria	<p>Allows for the data to be filtered on the server side.</p> <p>You can instruct the system to return only records where the aggregated data value is equal, greater than, greater or equal, less than or less or equal to certain values.</p> <p>If both parts of the filter are used, it's possible to filter out a range of data records.</p>
Events	Include only completed events	Includes only completed events in the aggregation process. This is useful for example to exclude partial events in indicator calculations.
Organisation units	Show hierarchy	Shows the name of all ancestors for organisation

	Option	Description
		<p>units, for example "Sierra Leone / Bombali / Tamabaka / Sanya CHP" for Sanya CHP.</p> <p>The organisation units are then sorted alphabetically which will order the organisation units according to the hierarchy.</p> <p>When you download a pivot table with organisation units as rows and you've selected Show hierarchy, each organisation unit level is rendered as a separate column. This is useful for example when you create Excel pivot tables on a local computer.</p>
Legend	Apply legend	<p>Applies a legend to the values. This mean that you can apply a colour to the values.</p> <p>Select By data item to color the table cells individually according to each data element or indicator.</p> <p>You configure legends in the Maintenance app.</p>
	Style	<p>Colors the text or background of cells in pivot tables based on the selected legend.</p> <p>You can use this option for scorecards to identify high and low values at a glance.</p>
Style	Display density	<p>Controls the size of the cells in the table. You can set it to Comfortable, Normal or Compact.</p> <p>Compact is useful when you want to fit large tables into the browser screen.</p>
	Font size	<p>Controls the size of the table text font. You can set it to Large, Normal or Small.</p>
	Digit group separator	<p>Controls which character to separate groups of digits or</p>

	Option	Description
		"thousands". You can set it to Comma, Space or None .
General	Table title	Type a title here to display it above the table.
Parameters (for standard reports only)	Note You create standard reports in the Reports app. In the Pivot Table app you set which parameters the system should prompt the user for.	
	Reporting period	Controls whether to ask user to enter a report period.
	Organisation unit	Controls whether to ask user to enter an organisation unit.
	Parent organisation unit	Controls whether to ask user to enter a parent organisation unit.
	Include regression	Includes a column with regression values to the pivot table.
	Include cumulative	Includes a column with cumulative values to the pivot table.
	Sort order	Controls the sort order of the values.
	Top limit	Controls the maximum number of rows to include in the pivot table.

5. Click **Update**.

Manage favorites

Saving your charts or pivot tables as favorites makes it easy to find them later. You can also choose to share them with other users as an interpretation or display them on the dashboard.

You view the details and interpretations of your favorites in the **Pivot Table**, **Data Visualizer**, **Event Visualizer**, **Event Reports** apps. Use the **Favorites** menu to manage your favorites.

Open a favorite

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

Save a favorite

1. Click **Favorites > Save as**.

-
2. Enter a **Name** and a **Description** for your favorite. The description field supports a rich text format, see the interpretations section for more details.
 3. Click **Save**.

Rename a favorite

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

Write an interpretation for a favorite

An interpretation is a link to a resource with a description of the data at a given period. This information is visible in the **Dashboard** app. To create an interpretation, you first need to create a favorite. If you've shared your favorite with other people, the interpretation you write is visible to those people.

1. Click **Favorites > Write interpretation**.
2. In the text field, type a comment, question or interpretation. You can also mention other users with '@username'. Start by typing '@' plus the first letters of the username or real name and a mentioning bar will display the available users. Mentioned users will receive an internal DHIS2 message with the interpretation or comment. You can see the interpretation in the **Dashboard** app.

It is possible to format the text with **bold**, *italic* by using the Markdown style markers * and _ for **bold** and *italic* respectively. Keyboard shortcuts are also available: Ctrl/Cmd + B and Ctrl/Cmd + I. A limited set of smilies is supported and can be used by typing one of the following character combinations: :) :-): (: -(:+1 :-1. URLs are automatically detected and converted into a clickable link.

3. Search for a user group that you want to share your favorite with, then click the + icon.
4. Change sharing settings for the user groups you want to modify.
 - **Can edit and view**: Everyone can view and edit the object.
 - **Can view only**: Everyone can view the object.
 - **None**: The public won't have access to the object. This setting is only applicable to **Public access**.
5. Click **Share**.

Subscribe to a favorite

When you are subscribed to a favorite, you receive internal messages whenever another user likes/creates/updates an interpretation or creates/update an interpretation comment of this favorite.

1. Open a favorite.
2. Click >>> in the top right of the workspace.
3. Click on the upper-right bell icon to subscribe to this favorite.

Create a link to a favorite

1. Click **Favorites > Get link**.

2. Select one of the following:

- **Open in this app:** You get a URL for the favorite which you can share with other users by email or chat.
- **Open in web api:** You get a URL of the API resource. By default this is an HTML resource, but you can change the file extension to ".json" or ".csv".

Delete a favorite

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

View interpretations based on relative periods

To view interpretations for relative periods, such as a year ago:

1. Open a favorite with interpretations.
2. Click >>> in the top right of the workspace.
3. Click an interpretation. Your chart displays the data and the date based on when the interpretation was created. To view other interpretations, click them.

Download data from a pivot table

Download table layout data format

To download the data in the current pivot table:

1. Click **Download**.
2. Under **Table layout**, click the format you want to download: Microsoft Excel, CSV or HTML.

The data table will have one column per dimension and contain names of the dimension items.

Tip

When you download a pivot table with organisation units as rows and you've selected **Show hierarchy** in **Table options**, each organisation unit level is rendered as a separate column. This is useful for example when you create Excel pivot tables on a local computer.

Tip

You can create a pivot table in Microsoft Excel from the downloaded Excel file.

Download plain data source format

You can download data in the current pivot table in JSON, XML, Excel, and CSV as plain data formats with different identification schemes (ID, Code, and Name). The data document uses identifiers of the dimension items and opens in a new browser window to display the URL of the request to the Web API in the address bar. This is useful for developers of apps and other client modules based on the DHIS2 Web API or for those who require a plain data source, for instance for import into statistical packages.

To download plain data source formats:

1. Click **Download**.
2. Under **Plain data source**, click the format you want to download.

Available formats

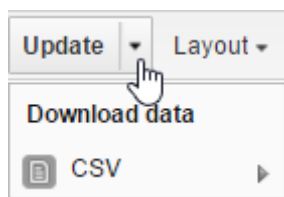
Format	Action	Description
JSON	Click JSON	Downloads JSON format based on ID property. You can also download JSON format based on Code or Name property.
XML	Click XML	Downloads XML format based on ID property. You can also download XML format based on Code or Name property.
Microsoft Excel	Click Microsoft Excel	Downloads XML format based on ID property. You can also download Microsoft Excel format based on Code or Name property.
CSV	Click CSV	Downloads CSV format based on ID property. You can also download CSV format based on Code or Name property.
JRXML	Put the cursor on Advanced and click JRXML	Produces a template of a Jasper Report which can be further customized based on your exact needs and used as the basis for a standard report in DHIS2.
Raw data SQL	Put the cursor on Advanced and click Raw data SQL	Provides the actual SQL statement used to generate the pivot table. You can use it as a data source in a Jasper report, or as the basis for an SQL view.

Download a CSV format without rendering data in the web browser

You can download data in CSV format directly without rendering the data in the web browser. This helps to reduce any constraints in the system settings that has been set with regards to the maximum number of analytic records. This lets you download much larger batches of data that you can use for later offline analysis.

To download data in CSV format without first rendering data in the web browser:

1. Click the arrow beside **Update**.



2. Click **CSV** to download the format based on ID property.

The file downloads to your computer.

Tip

You can also download CSV format based on **Code** or **Name** property.

Embed a pivot table in an external web page

Certain analysis-related resources in DHIS2, like pivot tables, charts and maps, can be embedded in any web page by using a plug-in. You will find more information about the plug-ins in the Web API chapter in the *DHIS2 Developer Manual*.

To generate a HTML fragment that you can use to display the pivot table in an external web page:

1. Click **Embed**.
2. Click **Select** to highlight the HTML fragment.

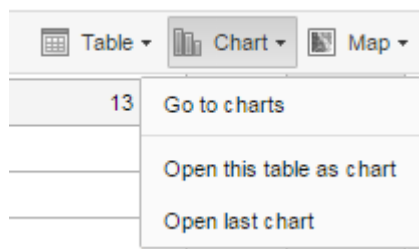
Visualize pivot table data as a chart or a map

When you have made a pivot table you can switch between pivot table, chart and map visualization of your data.

Open a pivot table as a chart

1. Click **Chart > Open this table as chart**.

Your current pivot table opens as a chart.



Open a pivot table selection as a chart

If you want to visualize a small part of your pivot table as a chart you can click directly on a value in the table instead opening the whole table.

1. In the pivot table, click a value.

547	1 374	4 995	483
1 347	1 802	7 487	876
1 892			1 025
450			279
463	885	3 385	542
1 700	1 643	6 852	587
28 157	27 208	124 892	9 660

2. To verify the selection, hold the cursor over **Open selection as chart**. The highlighted dimension headers in the table indicate what data will be visualized as a chart.

3. Click **Open selection as chart**.

Open a pivot table as a map

1. Click **Chart > Open this table as map**

Your current pivot table opens as a map.

Open a pivot table selection as a map

1. In the pivot table, click a value.

A menu displays.

2. Click **Open selection as map**.

Your selection opens as a map.

Using the Event Reports app

About the Event Reports app

Aggregated values Show aggregated event report		Events Show individual event overview		<<< Update Layout Options Favorites Download Share >>>						
Data				May 2015	June 2015	July 2015	August 2015	September 2015	October 2015	November 2015
Periods Fixed and relative periods Select period type Prev year Next year Available Selected	Bo	Male	Discharged	58	60	61	70		54	72
			Died	55	51	62	64	88	60	
			Absoonded	71	62	70	51	70	69	
		Female	Discharged	38	47	70	76	62	70	
			Discharged	60	46	60	73	65	65	
			Died	63	57	51	53	62	63	
				Absoonded	72	52	67	68	52	65
				Transferred	56	64	62	66	53	69
					473	439	503	521	504	533
	Bombali	Male	Discharged	53	58	51	49	41	52	
			Died	55	48	53	48	39	47	
			Absoonded	59	53	47	56	37	36	
Female		Transferred	43	43	55	47	37	49		
		Discharged	54	56	48	64	44	44		
		Died	51	58	50	51	49	53		
			Absoonded	45	49	51	52	44	45	
			Transferred	52	39	55	56	45	58	
				412	404	410	423	338	384	
Bonthe	Male	Discharged	28	29	29	30	28	20		
		Died	34	23	33	24	24	30		
		Absoonded	35	27	30	42	23	32		
	Female	Discharged	26	35	29	34	28	20		
		Discharged	31	25	28	28	27	23		
		Died	20	27	34	19	34	29		
			Absoonded	37	38	33	29	24	29	
			Transferred	29	26	33	20	21	32	
				240	230	249	226	207	215	
Male	Discharged	47	44	23	53	47	28			
	Died	38	28	44	32	46	24			
	Absoonded	30	44	37	33	41	47			

With the **Event Reports** app you can analyse events in two types of reports:

- Aggregated event reports: Pivot table-style analysis with aggregated numbers of events

By selecting **Aggregated values** from the top-left menu you can use the **Event Reports** app to create pivot tables with aggregated numbers of events. An event report is always based on a program. You can do analysis based on a range of dimensions. Each dimension can have a corresponding filter. Dimensions can be selected from the left-side menu. Similar to the pivot tables app, aggregated event reports may be limited by the amount of RAM accessible by the browser. If your requested table exceeds a set size, you will receive a warning prompt asking whether or not you want to continue.

- Individual event reports: Lists of events

By selecting **Events** from the top-left menu you can use the **Event Reports** app to make searches or queries for events based on a flexible set of criteria. The report will be displayed as a table with one row per event. Each dimension can be used as a column in the table or as a filter. Each dimension can have a criteria (filter). Data elements of type option set allows for "in" criteria, where multiple options can be selected. Numeric values can be compared to filter values using greater than, equal or less than operators.

Create an event report

1. Open the **Event Reports** app.
2. Select **Aggregated values** or **Events**.
3. In the menu to the left, select the meta data you want to analyse.
4. Click **Layout** and arrange the dimensions.

You can keep the default selection if you want.

5. Click **Update**.

Select dimension items

An event report is always based on a program and you can do analysis based on a range of dimensions. For programs with category combinations, you can use program categories and category option group sets as dimensions for tables and charts. Each dimension item can have a corresponding filter.

1. Select data elements:

1. Click **Data**.
2. Select a program and a program stage.

The data elements associated with the selected program are listed under **Available**. Each data element acts as a dimension.

3. Select the data elements you need by double-clicking their names.

Data elements can be filtered by type (Data elements, Program attributes, Program indicators) and are prefixed to make them easily recognizable.

After selecting a data element, it is visible under **Selected data items**.

4. (Optional) For each data element, specify a filter with operators such as "greater than", "in" or "equal" together with a filter value.

2. Select periods.

1. Click **Periods**.
2. Select one or several periods.

You have three period options: relative periods, fixed periods and start/end dates. You can combine fixed periods and relative periods in the same chart. You cannot combine fixed periods and relative periods with start/end dates in the same chart. Overlapping periods are filtered so that they only appear once.

- Fixed periods: In the **Select period type** box, select a period type. You can select any number of fixed periods from any period type. Fixed periods can for example be "January 2014".
- Relative periods: In the lower part of the **Periods** section, select as many relative periods as you like. The names are relative to the current date. This means that if the current month is March and you select **Last month**, the month of February is included in the chart. Relative periods has the advantage that it keeps the data in the report up to date as time goes.
- Start/end dates: In the list under the **Periods** tab, select **Start/end dates**. This period type lets you specify flexible dates for the time span in the report.

3. Select organisation units.

1. Click **Organisation units**.
2. Click the gearbox icon.

3. Select a **Selection mode** and an organisation unit.

There are three different selection modes:

Selection modes

Selection mode	Description
Select organisation units	<p>Lets you select the organisation units you want to appear in the chart from the organization tree.</p> <p>Select User org unit to disable the organisation unit tree and only select the organisation unit that is related to your profile.</p> <p>Select User sub-units to disable the organisation unit tree and only select the sub-units of the organisation unit that is related to your profile.</p> <p>Select User sub-x2-units to disable the organisation unit tree and only select organisation units two levels down from the organisation unit that is related to your profile.</p> <p>This functionality is useful for administrators to create a meaningful "system" favorite. With this option checked all users find their respective organisation unit when they open the favorite.</p>
Select levels	<p>Lets you select all organisation units at one or more levels, for example national or district level.</p> <p>You can also select the parent organisation unit in the tree, which makes it easy to select for example, all facilities inside one or more districts.</p>
Select groups	<p>Lets you select all organisation units inside one or several groups and parent organisation units at the same time, for example hospitals or chiefdoms.</p>

4. Click **Update**.

Select series, category and filter

You can define which data dimension you want to appear as columns, rows and filters in the pivot table. Each data element appears as individual dimensions and can be placed on any of the axes.

Note

Data elements of continuous value types (real numbers/decimal numbers) can only be used as filters, and will automatically be positioned as filters in the layout dialog. The reason for this is that continuous number cannot be grouped into sensible ranges and used on columns and rows.

1. Click **Layout**.
2. Drag and drop the dimensions to the appropriate space.
3. Click **Update**.

Change the display of your table

You can customize the display of an event report.

1. Click **Options**.
2. Set the options as required. Available options are different between aggregated event reports and individual event reports.

Event reports options

	Option	Description	Available for report type
Data	Show column totals	Displays totals at the end of each column in the pivot table.	Aggregated event report
	Show column sub-totals	Displays sub-totals for each column in the pivot table.	Aggregated event report
	Show row totals	Displays totals at the end of each row in the pivot table.	Aggregated event report
	Show row sub-totals	Displays sub-totals for each row in the pivot table.	Aggregated event report
	Show dimension labels	Displays labels for dimensions.	Aggregated event report
	Hide empty rows	Hides empty rows in the pivot table.	Aggregated event report
	Hide n/a data	Hides data tagged as N/A from the chart.	Aggregated event report
	Include only completed events	Includes only completed events in the aggregation process. This is useful when you want for example to exclude partial events in indicator calculations.	Aggregated event report Individual event report
	Limit	Sets a limit of the maximum number of rows that you can	Aggregated event report

	Option	Description	Available for report type
		display in the table, combined with a setting for showing top or bottom values.	
	Output type	Defines the output type. The output types are Event , Enrollment and Tracked entity instance .	Aggregated event report
	Program status	Filters data based on the program status: All , Active , Completed or Cancelled .	Aggregated event report
	Event status	Filters data based on the event status: All , Active , Completed , Scheduled , Overdue or Skipped .	Aggregated event report
Organisation units	Show hierarchy	Includes the names of all parents of each organisation unit in labels.	Aggregated event report
Style	Display density	Controls the size of the cells in the table. You can set it to Comfortable , Normal or Compact . Compact is useful when you want to fit large tables into the browser screen.	Aggregated event report Individual event report
	Font size	Controls the size of the table text font. You can set it to Large , Normal or Small .	Aggregated event report Individual event report
	Digit group separator	Controls which character to separate groups of digits or "thousands". You can set it to Comma , Space or None .	Aggregated event report Individual event report

3. Click **Update**.

Download chart data source

You can download the data source behind an event report in HTML, JSON, XML, Microsoft Excel or CSV formats.

1. Click **Download**.
2. Under **Plain data source**, click the format you want to download.

Available formats

Format	Description
HTML	Creates HTML table based on selected meta data
JSON	Downloads data values in JSON format based on selected meta data
XML	Downloads data values in XML format based on selected meta data
Microsoft Excel	Downloads data values in Microsoft Excel format based on selected meta data
CSV	Downloads data values in CSV format based on selected meta data

Manage favorites

Saving your charts or pivot tables as favorites makes it easy to find them later. You can also choose to share them with other users as an interpretation or display them on the dashboard.

You view the details and interpretations of your favorites in the **Pivot Table**, **Data Visualizer**, **Event Visualizer**, **Event Reports** apps. Use the **Favorites** menu to manage your favorites.

Open a favorite

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

Save a favorite

1. Click **Favorites > Save as**.
2. Enter a **Name** and a **Description** for your favorite. The description field supports a rich text format, see the interpretations section for more details.
3. Click **Save**.

Rename a favorite

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

Write an interpretation for a favorite

An interpretation is a link to a resource with a description of the data at a given period. This information is visible in the **Dashboard** app. To create an interpretation, you first need to create a favorite. If you've shared your favorite with other people, the interpretation you write is visible to those people.

1. Click **Favorites > Write interpretation**.

2. In the text field, type a comment, question or interpretation. You can also mention other users with '@username'. Start by typing '@' plus the first letters of the username or real name and a mentioning bar will display the available users. Mentioned users will receive an internal DHIS2 message with the interpretation or comment. You can see the interpretation in the **Dashboard** app.

It is possible to format the text with **bold**, *italic* by using the Markdown style markers * and _ for **bold** and *italic* respectively. Keyboard shortcuts are also available: Ctrl/Cmd + B and Ctrl/Cmd + I. A limited set of smilies is supported and can be used by typing one of the following character combinations: :) :-) :(:-(:+1 :-1. URLs are automatically detected and converted into a clickable link.

3. Search for a user group that you want to share your favorite with, then click the + icon.

4. Change sharing settings for the user groups you want to modify.

- **Can edit and view:** Everyone can view and edit the object.
- **Can view only:** Everyone can view the object.
- **None:** The public won't have access to the object. This setting is only applicable to **Public access**.

5. Click **Share**.

Subscribe to a favorite

When you are subscribed to a favorite, you receive internal messages whenever another user likes/creates/updates an interpretation or creates/update an interpretation comment of this favorite.

1. Open a favorite.

2. Click >>> in the top right of the workspace.

3. Click on the upper-right bell icon to subscribe to this favorite.

Create a link to a favorite

1. Click **Favorites > Get link**.

2. Select one of the following:

- **Open in this app:** You get a URL for the favorite which you can share with other users by email or chat.
- **Open in web api:** You get a URL of the API resource. By default this is an HTML resource, but you can change the file extension to ".json" or ".csv".

Delete a favorite

1. Click **Favorites > Delete**.

2. Click **OK**.

View interpretations based on relative periods

To view interpretations for relative periods, such as a year ago:

1. Open a favorite with interpretations.
2. Click >>> in the top right of the workspace.
3. Click an interpretation. Your chart displays the data and the date based on when the interpretation was created. To view other interpretations, click them.

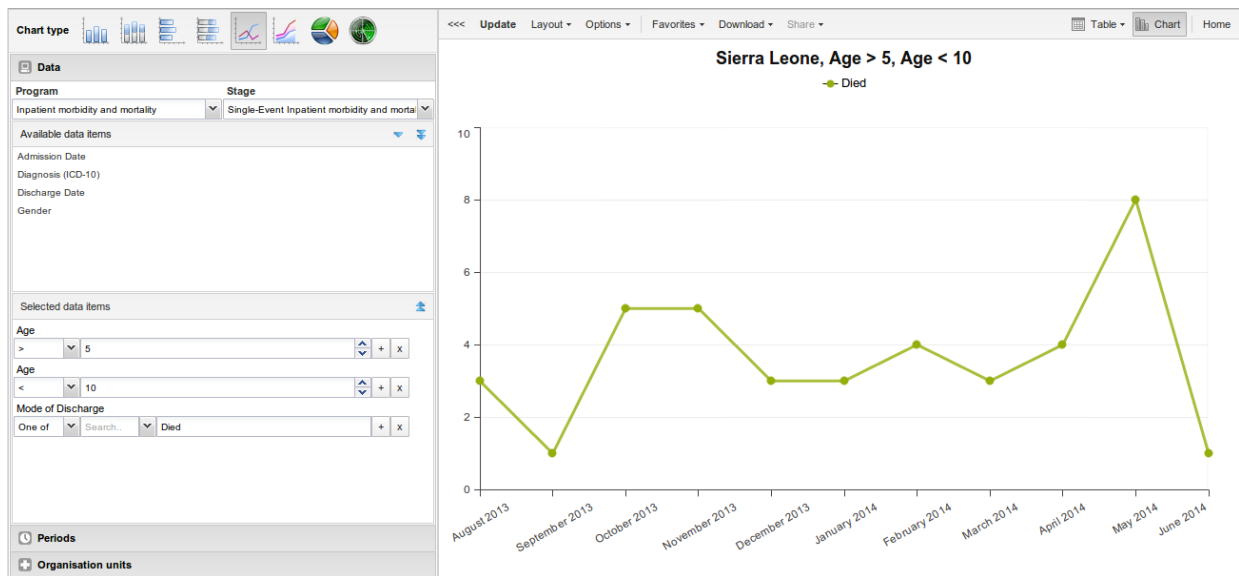
Visualize an event report as a chart

When you have made an event report you can open it as a chart:

Click **Chart > Open this chart as table**.

Using the Event Visualizer app

About the Event Visualizer app



With the **Event Visualizer** app, you can create charts based on event data.

Create a chart

1. Open the **Event Visualizer** app and select a chart type.
2. In the menu to the left, select the meta data you want to analyse.
3. Click **Layout** and arrange the dimensions.

You can keep the default selection if you want.

4. Click **Update**.

Select a chart type

The **Event Visualizer** app has eight different chart types, each with different characteristics. To select a chart type:

1. In **Chart type**, click the chart type you need.

Chart types

Chart type	Description
Column chart	Displays information as vertical rectangular columns with lengths proportional to the values they represent. Useful when you want to, for example, compare performance of different districts.
Stacked column chart	Displays information as vertical rectangular columns, where bars representing multiple categories are stacked on top of each other.

Chart type	Description
	Useful when you want to, for example, display trends or sums of related data elements.
Bar chart	Same as column chart, only with horizontal bars.
Stacked bar chart	Same as stacked column chart, only with horizontal bars.
Line chart	<p>Displays information as a series of points connected by straight lines. Also referred to as time series.</p> <p>Useful when you want to, for example, visualize trends in indicator data over multiple time periods.</p>
Area chart	<p>Is based on line chart, with the space between the axis and the line filled with colors and the lines stacked on top of each other.</p> <p>Useful when you want to compare the trends of related indicators.</p>
Pie chart	<p>Circular chart divided into sectors (or slices).</p> <p>Useful when you want to, for example, visualize the proportion of data for individual data elements compared to the total sum of all data elements in the chart.</p>
Radar chart	Displays data on axes starting from the same point. Also known as spider chart.

2. Click **Update**.

Select dimension items

An event chart is always based on a program and you can do analysis based on a range of dimensions. For programs with category combinations, you can use program categories and category option group sets as dimensions for tables and charts. Each dimension item can have a corresponding filter. You select dimension items from the left-side menu.

1. Select data elements:

1. Click **Data**.

2. Select a program and a program stage.

The data elements associated with the selected program are listed under **Available**. Each data element acts as a dimension.

3. Select the data elements you need by double-clicking their names.

Data elements can be filtered by type (Data elements, Program attributes, Program indicators) and are prefixed to make them easily recognizable.

After selecting a data element, it is visible under **Selected data items**.

4. (Optional) For each data element, specify a filter with operators such as "greater than", "in" or "equal" together with a filter value.

2. Select periods.

1. Click **Periods**.
2. Select one or several periods.

You have three period options: relative periods, fixed periods and start/end dates. You can combine fixed periods and relative periods in the same chart. You cannot combine fixed periods and relative periods with start/end dates in the same chart. Overlapping periods are filtered so that they only appear once.

- **Fixed periods:** In the **Select period type** box, select a period type. You can select any number of fixed periods from any period type. Fixed periods can for example be "January 2014".
- **Relative periods:** In the lower part of the **Periods** section, select as many relative periods as you like. The names are relative to the current date. This means that if the current month is March and you select **Last month**, the month of February is included in the chart. Relative periods has the advantage that it keeps the data in the report up to date as time goes.
- **Start/end dates:** In the list under the **Periods** tab, select **Start/end dates**. This period type lets you specify flexible dates for the time span in the report.

3. Select organisation units.

1. Click **Organisation units**.
2. Click the gearbox icon.
3. Select a **Selection mode** and an organisation unit.

There are three different selection modes:

Selection modes

Selection mode	Description
Select organisation units	<p>Lets you select the organisation units you want to appear in the chart from the organization tree.</p> <p>Select User org unit to disable the organisation unit tree and only select the organisation unit that is related to your profile.</p> <p>Select User sub-units to disable the organisation unit tree and only select the sub-units of the organisation unit that is related to your profile.</p> <p>Select User sub-x2-units to disable the organisation unit tree and only select organisation units two levels down from the organisation unit that is related to your</p>

Selection mode	Description
	<p>profile.</p> <p>This functionality is useful for administrators to create a meaningful "system" favorite. With this option checked all users find their respective organisation unit when they open the favorite.</p>
Select levels	<p>Lets you select all organisation units at one or more levels, for example national or district level.</p> <p>You can also select the parent organisation unit in the tree, which makes it easy to select for example, all facilities inside one or more districts.</p>
Select groups	<p>Lets you select all organisation units inside one or several groups and parent organisation units at the same time, for example hospitals or chiefdoms.</p>

4. Click **Update**.

Select series, category and filter

You can define which data dimension you want to appear as series, category and filter. Each data element appears as individual dimensions and can be placed on any of the axes. Series and category panels can only have one dimension at the time.

Note

Data elements of continuous value types (real numbers/decimal numbers) can only be used as filters, and will automatically be positioned as filters in the layout dialog. The reason for this is that continuous number cannot be grouped into sensible ranges and used on columns and rows.

1. Click **Layout**.
2. Drag and drop the dimensions to the appropriate space. Only one dimension can be in each section.
3. Click **Update**.

Change the display of your chart

You can customize the display of an event report.

1. Click **Options**.
2. Set the options as required.

Chart options

Option	Description	
Data	Show values	

Option	Description	
		Displays values as numbers on top of each series.
	Use 100% stacked values	Displays 100 % stacked values in column charts.
	Use cumulative values	Displays cumulative values in line charts.
	Hide n/a data	Hides data tagged as N/A from the chart.
	Include only completed events	Includes only completed events in the aggregation process. This is useful when you want for example to exclude partial events in indicator calculations.
	Hide empty categories	<p>Hides the category items with no data from the chart.</p> <p>None: doesn't hide any of the empty categories</p> <p>Before first: hides missing values only before the first value</p> <p>After last: hides missing values only after the last value</p> <p>Before first and after last: hides missing values only before the first value and after the last value</p> <p>All: hides all missing values</p> <p>This is useful for example when you create column and bar charts.</p>
	Trend line	Displays the trend line which visualizes how your data evolves over time. For example if performance is improving or deteriorating. Useful when periods are selected as category.
	Target line value/title	Displays a horizontal line and title (optional) at the given domain value. Useful for example when you want to compare your performance to the current target.

Option	Description	
	Base line value/title	Displays a horizontal line and title (optional) at the given domain value. Useful for example when you want to visualize how your performance has evolved since the beginning of a process.
	Sort order	Allows you to sort the values on your chart from either low to high or high to low.
	Output type	Defines the output type. The output types are Event , Enrollment and Tracked entity instance .
	Program status	Filters data based on the program status: All , Active , Completed or Cancelled .
	Event status	Filters data based on the event status: All , Active , Completed , Scheduled , Overdue or Skipped .
Axes	Range axis min/max	Defines the maximum and minimum value which will be visible on the range axis.
	Range axis tick steps	Defines the number of ticks which will be visible on the range axis.
	Range axis decimals	Defines the number of decimals which will be used for range axis values.
	Range axis title	Type a title here to display a label next to the range axis (also referred to as the Y axis). Useful when you want to give context information to the chart, for example about the unit of measure.
	Domain axis title	Type a title here to display a label below the domain axis (also referred to as the X axis). Useful when you want to give context information to the chart, for example about the period type.
General	Hide chart legend	Hides the legend and leaves more room for the chart itself.
	Hide chart title	Hides the title (default or custom) of your chart.
	Chart title	

Option	Description	
		Type a title here to display a custom title above the chart. If you don't enter a title, the default title is displayed.
	Hide chart subtitle	Hides the subtitle of your chart.
	Chart subtitle	Type a subtitle here to display a custom subtitle above the chart but below the title. If you don't enter a subtitle, no subtitle is displayed in the chart.

3. Click **Update**.

Download a chart as an image or a PDF

After you have created a chart you can download it to your local computer as an image or PDF file.

1. Click **Download**.
2. Under **Graphics**, click **PNG (.png)** or **PDF (.pdf)**.

The file is automatically downloaded to your computer. Now you can for example embed the image file into a text document as part of a report.

Download chart data source

You can download the data source behind a chart in HTML, JSON, XML, Microsoft Excel or CSV formats. The data document uses identifiers of the dimension items and opens in a new browser window to display the URL of the request to the Web API in the address bar. This is useful for developers of apps and other client modules based on the DHIS2 Web API or for those who require a plan data source, for instance for import into statistical packages.

To download plain data source formats:

1. Click **Download**.
2. Under **Plain data source**, click the format you want to download.

Available formats

Format	Description
HTML	Creates HTML table based on selected meta data
JSON	Downloads data values in JSON format based on selected meta data
XML	Downloads data values in XML format based on selected meta data
Microsoft Excel	Downloads data values in Microsoft Excel format based on selected meta data
CSV	Downloads data values in CSV format based on selected meta data

Manage favorites

Saving your charts or pivot tables as favorites makes it easy to find them later. You can also choose to share them with other users as an interpretation or display them on the dashboard.

You view the details and interpretations of your favorites in the **Pivot Table**, **Data Visualizer**, **Event Visualizer**, **Event Reports** apps. Use the **Favorites** menu to manage your favorites.

Open a favorite

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

Save a favorite

1. Click **Favorites** > **Save as**.
2. Enter a **Name** and a **Description** for your favorite. The description field supports a rich text format, see the interpretations section for more details.
3. Click **Save**.

Rename a favorite

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

Write an interpretation for a favorite

An interpretation is a link to a resource with a description of the data at a given period. This information is visible in the **Dashboard** app. To create an interpretation, you first need to create a favorite. If you've shared your favorite with other people, the interpretation you write is visible to those people.

1. Click **Favorites** > **Write interpretation**.
2. In the text field, type a comment, question or interpretation. You can also mention other users with '@username'. Start by typing '@' plus the first letters of the username or real name and a mentioning bar will display the available users. Mentioned users will receive an internal DHIS2 message with the interpretation or comment. You can see the interpretation in the **Dashboard** app.

It is possible to format the text with **bold**, *italic* by using the Markdown style markers * and _ for **bold** and *italic* respectively. Keyboard shortcuts are also available: Ctrl/Cmd + B and Ctrl/Cmd + I. A limited set of smilies is supported and can be used by typing one of the following character combinations: :) :-) :(:-(: +1 :-1. URLs are automatically detected and converted into a clickable link.

3. Search for a user group that you want to share your favorite with, then click the + icon.
4. Change sharing settings for the user groups you want to modify.
 - **Can edit and view**: Everyone can view and edit the object.
 - **Can view only**: Everyone can view the object.

-
- **None:** The public won't have access to the object. This setting is only applicable to **Public access**.

5. Click **Share**.

Subscribe to a favorite

When you are subscribed to a favorite, you receive internal messages whenever another user likes/creates/updates an interpretation or creates/update an interpretation comment of this favorite.

1. Open a favorite.
2. Click >>> in the top right of the workspace.
3. Click on the upper-right bell icon to subscribe to this favorite.

Create a link to a favorite

1. Click **Favorites > Get link**.
2. Select one of the following:
 - **Open in this app:** You get a URL for the favorite which you can share with other users by email or chat.
 - **Open in web api:** You get a URL of the API resource. By default this is an HTML resource, but you can change the file extension to ".json" or ".csv".

Delete a favorite

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

View interpretations based on relative periods

To view interpretations for relative periods, such as a year ago:

1. Open a favorite with interpretations.
2. Click >>> in the top right of the workspace.
3. Click an interpretation. Your chart displays the data and the date based on when the interpretation was created. To view other interpretations, click them.

Visualize a chart as a pivot table

When you have made a chart you can open it as a pivot table:

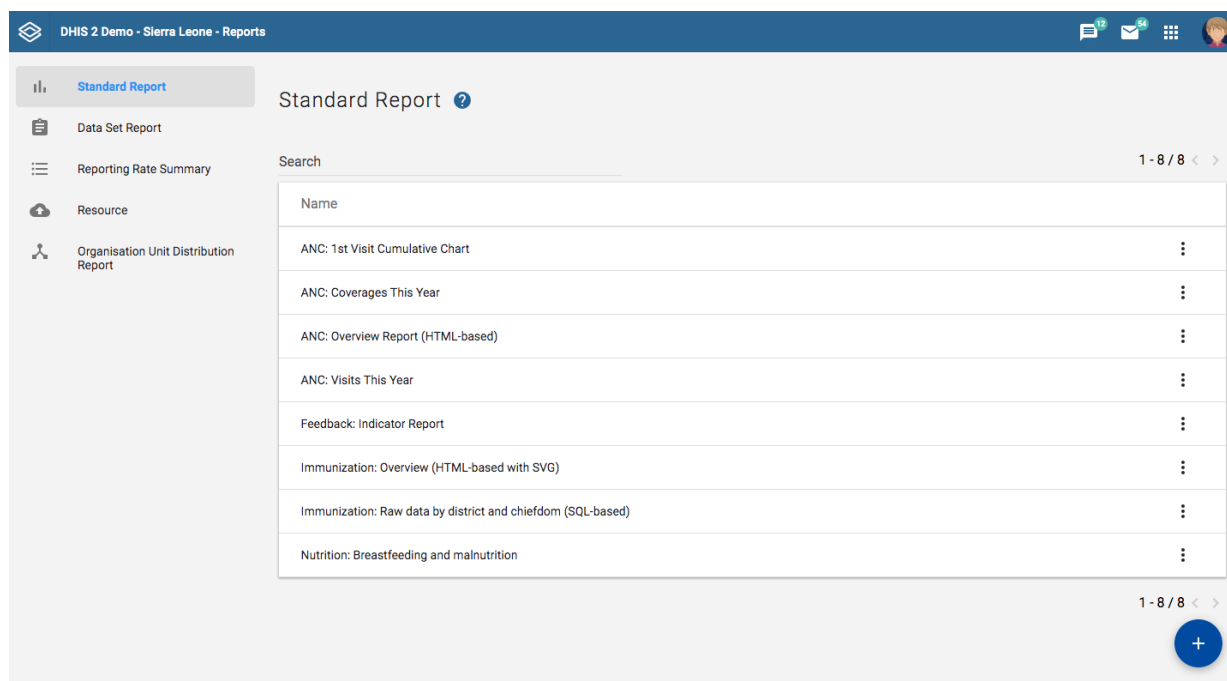
Click **Chart > Open this chart as table**.

Reporting functionality in the reports app

The reports app allows for canned, standard reports, data set reports, resources and org unit distribution reports.

Using standard reports

You access the available reports by navigating to Apps->Reports. In the report menu in the left bar, click Standard Report. A list of all pre-defined reports will appear in the main window.



You run/view a report by clicking on the triple-dot icon of the report and then selecting "Create" from the contextual menu. If there are any pre-defined parameters, you will see a report parameter window where you must fill in the values needed for orgunit and/or reporting month, depending on what has been defined in the underlying report table(s). Click on "Generate Report" when you are ready. 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. You can save the file and keep it locally on your computer for later use.

Using dataset reports

Dataset reports are printer friendly views of the data entry screen filled with either raw or aggregated data.

You can access data set reports from Apps->Reports.

A Criteria window will appear where you fill in the details for your report:

Dataset: The data set you want to display.

Report period: The actual period you want data for. This can be aggregated as well as raw periods. This means that you can ask for a quarterly or annual report even though the data set is collected monthly. A data set's period type (collection frequency) is defined in data set maintenance. First select the period type (Monthly, Quarterly, Yearly etc.) in the drop down next to Prev and Next buttons, and then select one of the available periods from the dropdown list below. Use Prev and Next to jump one year back or forward.

Use data for selected unit only: Use this option if you want a report for an orgunit that has children, but only want the data collected directly for this unit and not the data collected by its children. If you want a typical aggregated report for an orgunit you do not want to tick this option.

Report Organisation unit: Here you select the orgunit you want the report for. This can be at any level in the hierarchy as the data will be aggregated up to this level automatically (if you do not tick the option above).

When you are done filling in the report criteria you click on "Generate". The report will appear as HTML in a printer-friendly format. Use the print and save as functions in the browser to print or save (as HTML) the report. You can also export the data set report in Excel and PDF formats.

Using reporting rate summary

Access the reporting rate summary from the Apps->Reports menu. Reporting rate summaries will show how many datasets (forms) that have been submitted by organisation unit and period.

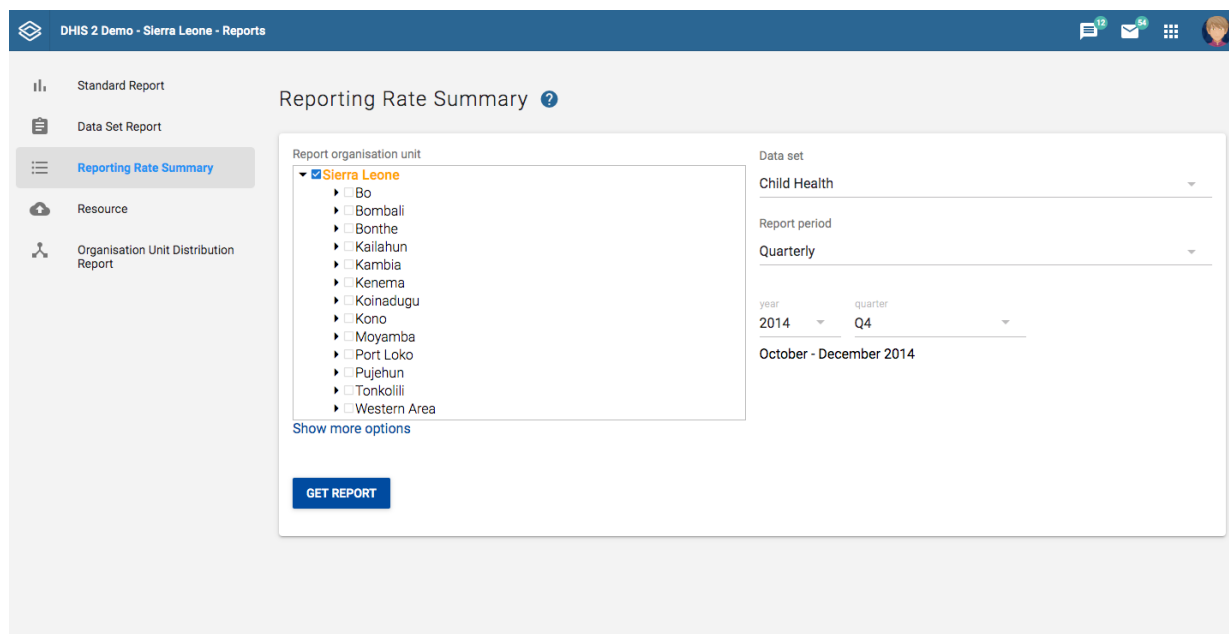
The reporting rate calculation is based on complete data set registrations. A complete data set registration refers to a user marking a data entry form as complete, typically by clicking the complete button in the data entry screen, hereby indicating to the system that she considers the form to be complete. This is i.e. a subjective approach to calculating completeness.

The reporting rate summary will for each row show a range of measures:

- **Actual reports:** Indicates the number of data entry complete registrations for the relevant data set.
- **Expected reports:** Indicates how many data entry complete registrations are expected. This number is based on the number of organisation units the relevant data set has been assigned to (enabled for data entry).
- **Reporting rate:** The percentage of reports registered as complete based on the number expected.
- **Reports on time:** Same as actual reports, only reports registered as complete within the maximum number of days after the end of the reporting period. This number of days after reporting period can be defined per data set in the data set management.
- **Reporting rate on time:** Same as percentage, only reports registered as complete on time used as numerator.

To run the report you can follow these steps:

- Select an orgunit from the tree.
- Select a data set.
- Select a period type and a period from the list of available periods for that period type.
- The report will then be rendered. Change any of the parameters above and click "Get report" again see the corresponding results.



Using resources

The resource tool allows you to upload both files from your local computer to the DHIS server and to add links to other resources on the Internet through URLs. If cloud storage is configured for your system, resources will be saved there.

To create a new resource:

1. Open the **Reports** app and click **Resource**.
2. Click **Add new**.
3. Enter a **Name**.
4. Select a **Type: Upload file** or **External URL**.
5. Click **Save**.

Using organisation unit distribution reports

You can access the Orgunit Distribution reports from the left side menu in the Apps->Reports.

Orgunit distribution reports are reports that show how the orgunits are distributed on various properties like type and ownership, and by geographical areas.

The result can be presented in a table-based report or in a chart.

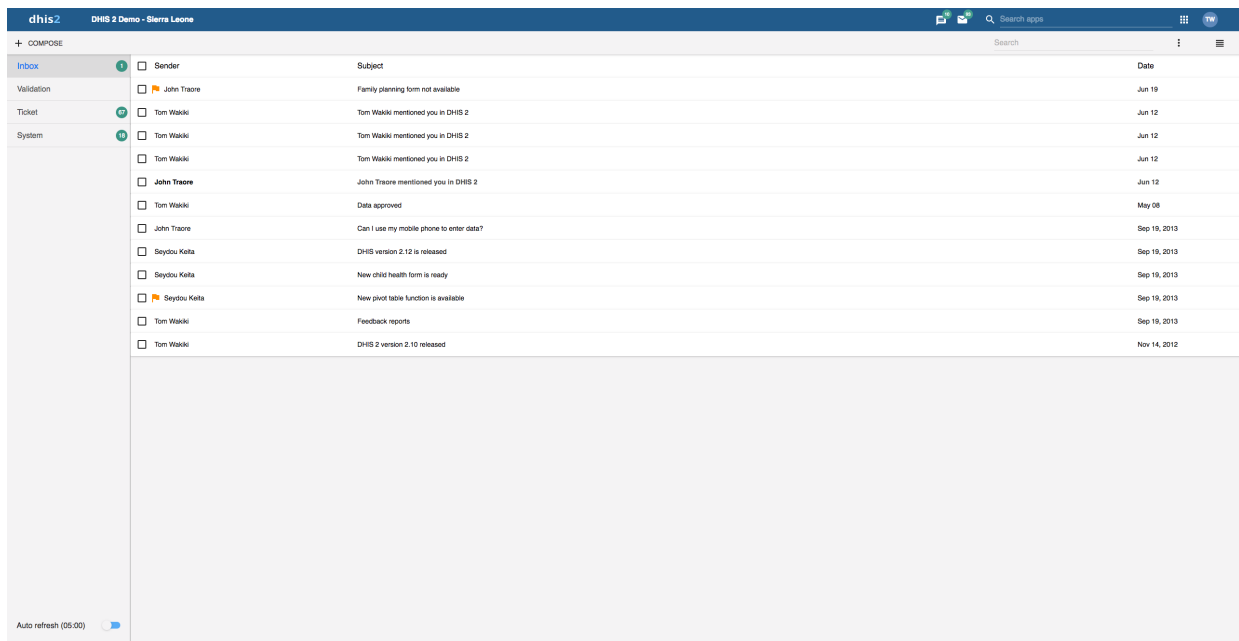
Running a report:

To run a report first select an orgunit in the upper left side orgunit tree. The report will be based on orgunits located under the selected orgunit. The select the orgunit group set that you want to use, typically these are Type, Ownership, Rural/Urban, but can be any user-defined orgunit group set. The you can click on either Get Report to get the table-based presentation or Get chart to get the same result in a chart. You can also download the table-based report as Excel or CSV.

The screenshot shows the DHIS 2 Reports application interface for Sierra Leone. The top navigation bar includes the DHIS 2 logo, the text 'DHIS 2 Demo - Sierra Leone - Reports', and notification icons. A left sidebar contains a menu with options: Standard Report, Data Set Report, Reporting Rate Summary, Resource, and Organisation Unit Distribution Report (which is highlighted). The main content area is titled 'Organisation Unit Distribution Report' and features a 'Report organisation unit' section with a tree view. Under 'Sierra Leone', the 'Bo' region is selected. Other regions listed include Bombali, Bonthe, Kailahun, Kambia, Kenema, Koinadugu, Kono, Moyamba, Port Loko, Pujehun, Tonkolili, and Western Area. To the right, there is a 'Group Set' section with a dropdown menu currently showing 'Facility Ownership'. At the bottom of the report selection area, there are two buttons: 'GET REPORT' and 'GET CHART'.

Messaging

About messages and feedback messages



Within DHIS2 you can send messages and feedback messages to users, user groups and organisation units. When you send a feedback message, it is routed to a particular user group called the feedback recipient group. If you are a member of this user group, you have access to feedback handling tools. You can, for example, set the status of an incoming feedback to "Pending" while you are waiting for information.

In addition to the user-to-user and feedback messages, depending on your configuration the system will also send you system-generated messages. These messages could be triggered by different events, including system or background job failures and validation analysis results. Feedback handling tools are also available for validation results and the priority will be set to the importance of the validation rule violated.

To visit the app click **message icon in header bar** or find the **Messaging** app in the app search box.

Note

Messages and feedback messages are not sent to users' e-mail addresses, the messages only appear within DHIS2.

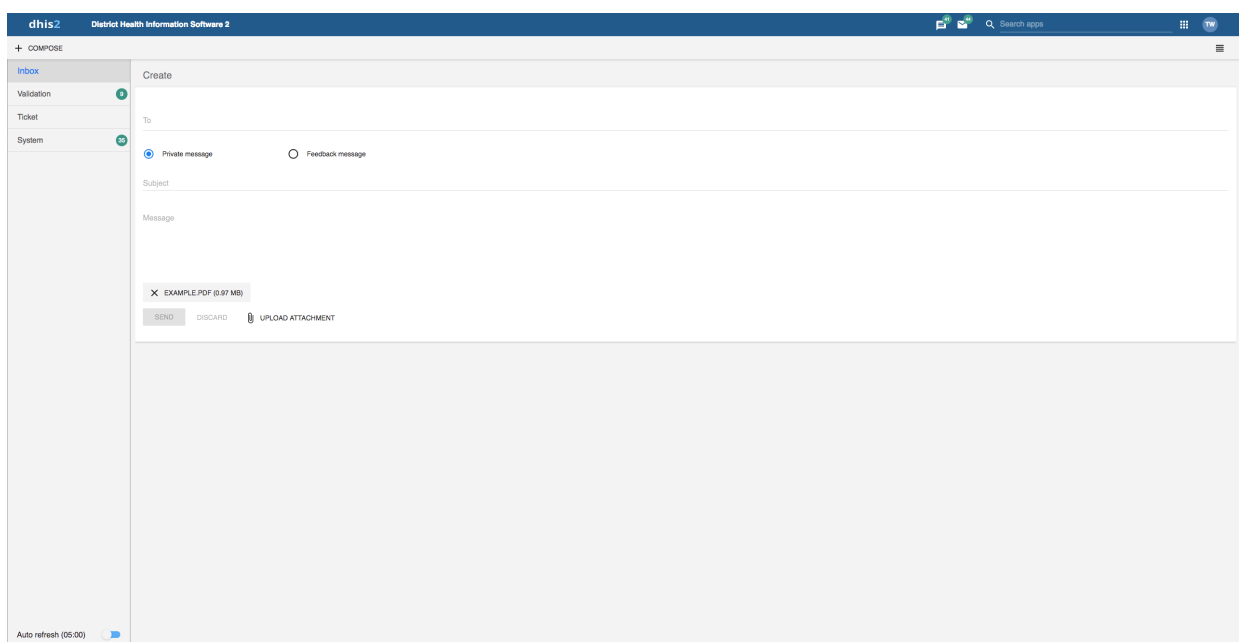
With 2.30 we introduced a new messaging app which offers a richer messaging experience. Specifically:

- Switch between list view and compact view by clicking the icon in the top right corner.
 - The list view is simplistic and gives a good overview of all messages and is especially suited for feedback and validation messages.
 - The compact view is a modern way of view messages where the user has more information in one view, hence viewing and replying several messages is easier.

The first screenshot in this section displays list view, while the screenshot in section **Read a message** displays the compact view.

- A new search field is added which enables the user to search for messages. The search filters messages on different message attributes; subject, text and senders. This implies that you are able to narrow down the message conversation list by entering a search.
- A auto refresh feature is added so that the app fetches new messages at a set interval, every 5 minutes. This feature is disabled by default.
- For every message conversation you are able to add participants to the conversation. This is very useful if you want input on that particular conversation or if someone should also see the information. It is not possible to delete participants from a conversation.

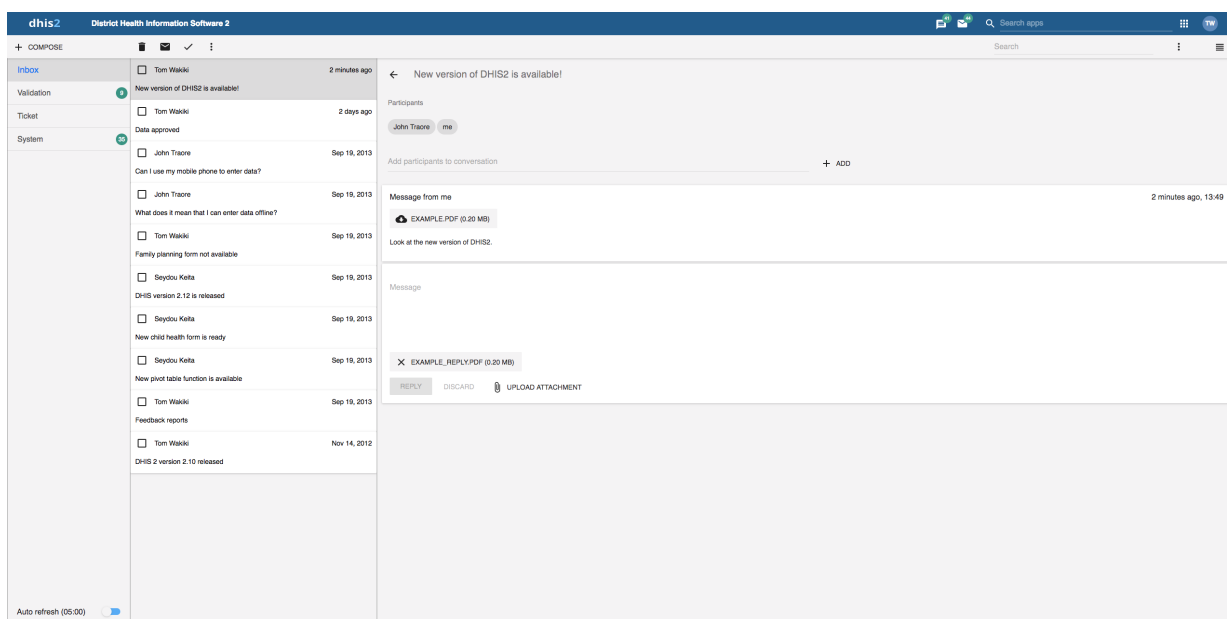
Create a message



The screenshot shows the 'dhis2' interface for creating a message. The top navigation bar includes the 'dhis2' logo, 'District Health Information Software 2', and a search bar. A sidebar on the left contains navigation options: 'Compose', 'Inbox', 'Validation', 'Ticket', and 'System'. The main content area is titled 'Create' and features a 'To' field with radio buttons for 'Private message' (selected) and 'Feedback message'. Below this is a 'Subject' field and a large 'Message' text area. An attachment 'EXAMPLE.PDF (0.97 MB)' is shown with 'SEND', 'DISCARD', and 'UPLOAD ATTACHMENT' buttons. At the bottom left, there is an 'Auto refresh (05:00)' toggle switch.

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**.

Read a message



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.

Create a feedback message

1. Follow the steps as for creating a message, only selecting **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.

Attachments

With 2.31 we introduced attachments to messages. When creating or replying to a message conversation you have the possibility to add attachments. Currently there are no limitations to type or size of the file.

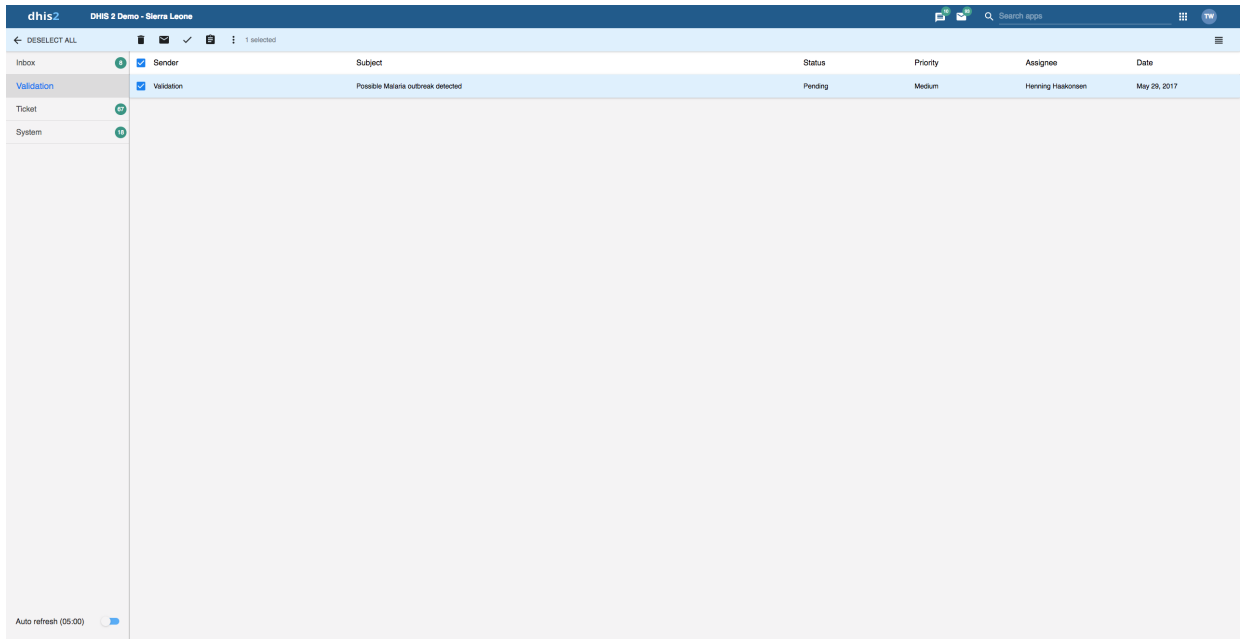
Manage validation and feedback messages

Note

You will only see feedback messages and have access to the extended handling tools if you are a member of the user group that is set up to handle feedback messages.

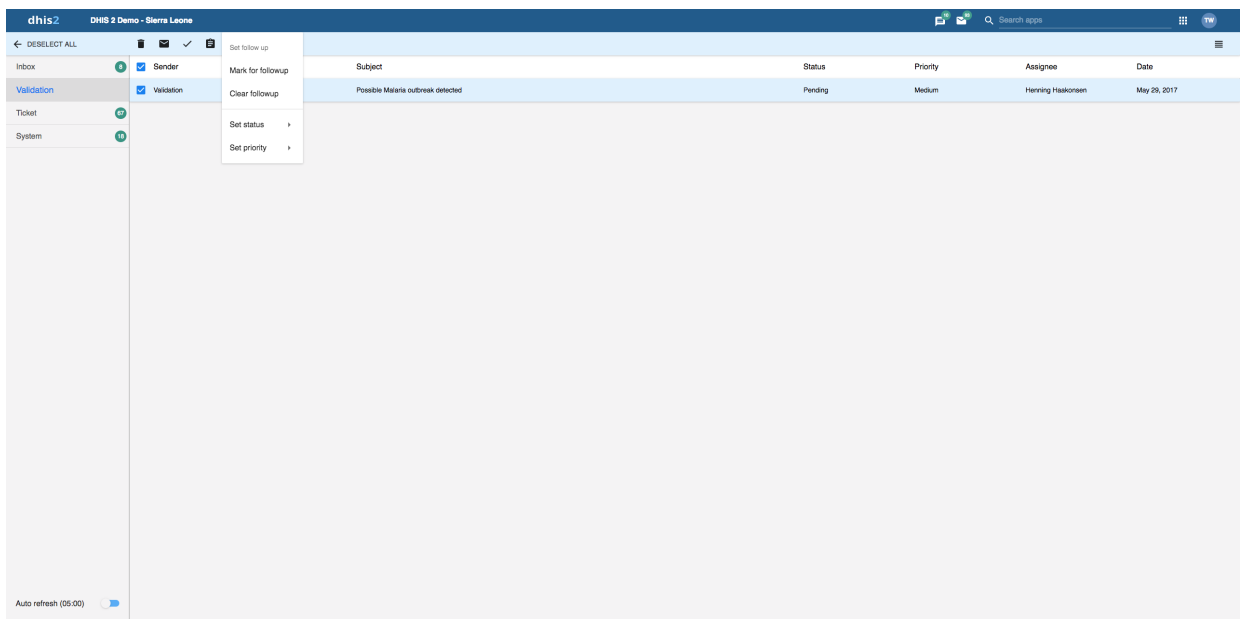
With the new app you manage extended tools for tickets and validation messages through the icon menu which appears when viewing a message or checking of messages in the conversation list.

All messages selected



All Messages Selected

All messages selected and extended choice picker selected



All messages selected and extended choice picker selected

You will receive feedback messages to your **Ticket** folder and validation messages to your **Validation** folder. For feedback and validation messages you have the following options in addition to the messages options:

Feedback handling tools

Function	Description
Priority	You can mark a feedback/validation message with different priorities: None , Low , Medium or High .

Function	Description
	<p>Setting the priority makes it easier to keep track of which feedback message you need resolved first, and which feedback messages that can wait.</p>
<p>Status</p>	<p>All feedback/validation messages get the status Open when created.</p> <p>To keep track of existing feedback messages, you can change the status to Pending, Invalid or Solved.</p> <p>You can filter feedback/validation messages based on their status with the two drop down menus in the internal header bar.</p>
<p>Assigned to</p>	<p>You can assign a feedback message to any member of the user group that is set up to handle feedback messages.</p> <p>You can assign a validation message to any user in the system.</p> <p>- means that you haven't assigned a user to the feedback message.</p>
<p>Internal reply</p>	<p>When you work in a feedback handling team you might want to discuss the feedback before sending an answer to the sender. You can keep this discussion in the same message conversation as the feedback itself.</p> <p>To send a reply that within the feedback handling user group, click INTERNAL REPLY.</p>

Configure feedback message function

To configure the feedback message function, you must:

1. Create a user group (for example "Feedback message recipients") that contains all the users who should receive feedback messages.
2. Open the **System Settings** app and click **General > Feedback recipients** and select the user group you created in the previous step.

Set user account preferences

In **Edit user profile**, you can add personal information to your profile such as your email address, mobile phone number, date of birth, profile picture and more. When you send messages, the person receiving the message can see these profile details. You can also provide account names for various direct messaging services, which will be used by the system.

In **Edit user settings**, you can change the display language of DHIS2 and the language of the database. The database language is the translated content of the metadata, such as data elements and indicators. You can also choose a display style, and enable or disable SMS and email notifications. If you wish to, you can choose to display a short name, such as "Joe" in the analysis modules, rather than your full name.

In **Edit account settings**, you can reset your password and setup 2-Factor authentication. Setting up 2-Factor authentication will require you to download the Google Authenticator app on your mobile device.

In the **View full profile** section, you find a summary of your profile details. This section includes a few fields that you cannot edit yourself, such as user roles and user organisation units.

In **Manage personal access tokens** you can view the existing personal access tokens, revoke existing tokens and generate new ones. Personal access tokens are an alternative to using passwords for authentication and useful for providing (restricted) access to scripts and external applications. Note that the values of newly generated personal access tokens are only visible right after generating.

In the **About DHIS2** section, you find a list of details about the DHIS2 instance.