

# Trainer's Guide to Dashboards

---

## What is this guide?

This guide is a support document for DHIS2 Academy trainers for the session "Dashboards" This session follows the standard Academy training approach with

1. a live demo session where the trainer demonstrate and explain the features, and
2. a hands-on session with exercises where participants get to practice the same features.

This guide will help the trainer prepare for the live demo session. The "Live Demo step by step" section has a detailed walkthrough of all the steps to demonstrate with explanations and screenshots that should be easy to follow. Use that when preparing for the live demo session.

There is also a Quick Guide which lists the steps very briefly and this is meant as a lookup guide or "cheatsheet" WHILE doing the demo, to help the trainer remember all the steps and the flow of the demo.

## Learning objectives for this session

1. Describe how to navigate the dashboard
2. Demonstrate how to create and manage a dashboard
3. Demonstrate how to add previously created tables, charts and maps to the dashboard
4. Describe the concept of user org units as it applies to saved items in more detail
5. Describe how to share dashboards, with an emphasis on how user org units can supplement sharing

## Time Requirements

- Live Demo:
- Hands-on Exercises:
- Assignment:

## Background

## Preparations

## Best Practices

## Quick Guide

1. Using Dashboards
  1. Explain the dashboard interface using the HIV national dashboard
    1. Review the dashboard selection
    2. Apply an org unit filter
    3. Apply a period filter
    4. Review descriptions and interpretations using the dashboard item HIV - HIV Cascade
    5. Review how dashboards can be interacted with
    6. Show the print feature

7. Review how dashboards can be accessed via a mobile device
8. Show how you can use dashboards offline

### STOP - Perform Exercise 1

1. Create a new dashboard
2. Review all of the features that are available when creating a new dashboard (layout, description, adding items, etc.)
3. Add some of the EMIS items to the dashboard
4. Discuss the filter settings

### STOP - Perform Exercise 2

1. Discuss how dashboards can be re-used across many users via relative org units and sharing using the Malaria Burden Reduction dashboard
2. Login as the malaria user (malaria/District1#) in order to review the effect of the relative org units and sharing this has on the user's dashboards

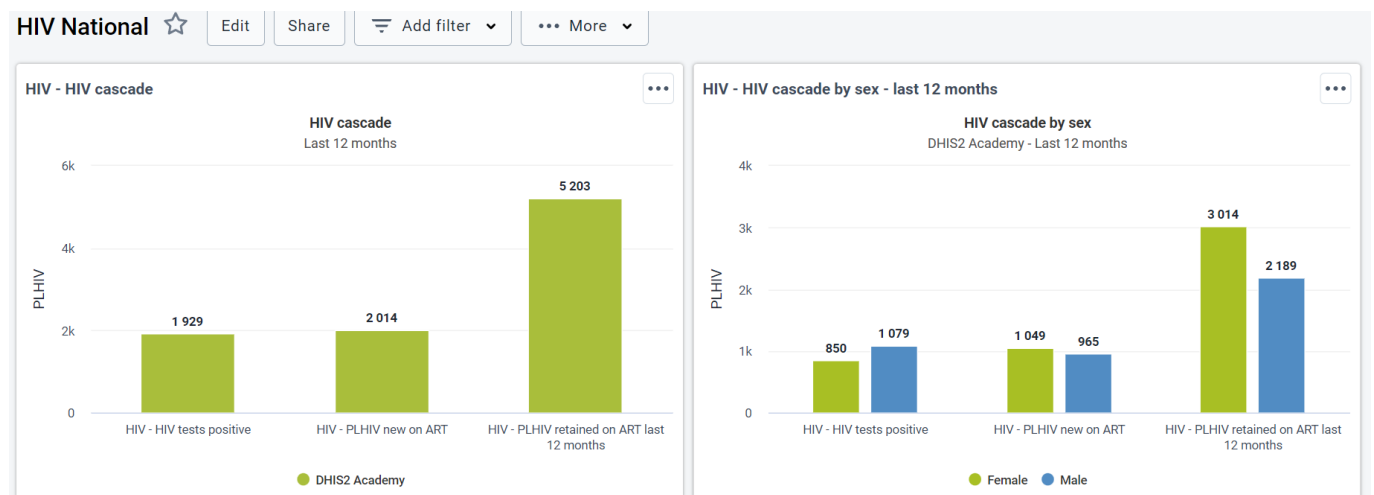
### STOP - Perform Exercise 3

## Live Demo step by step

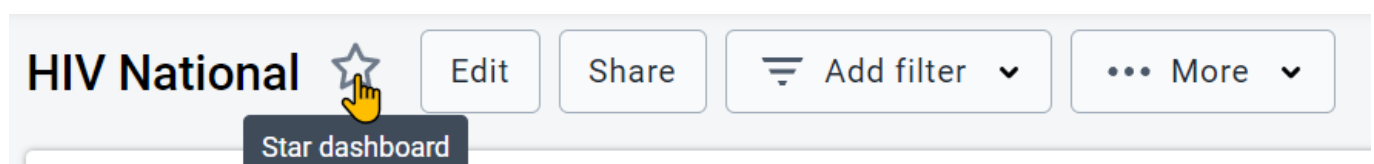
### Using Dashboards

#### Explain the dashboard interface

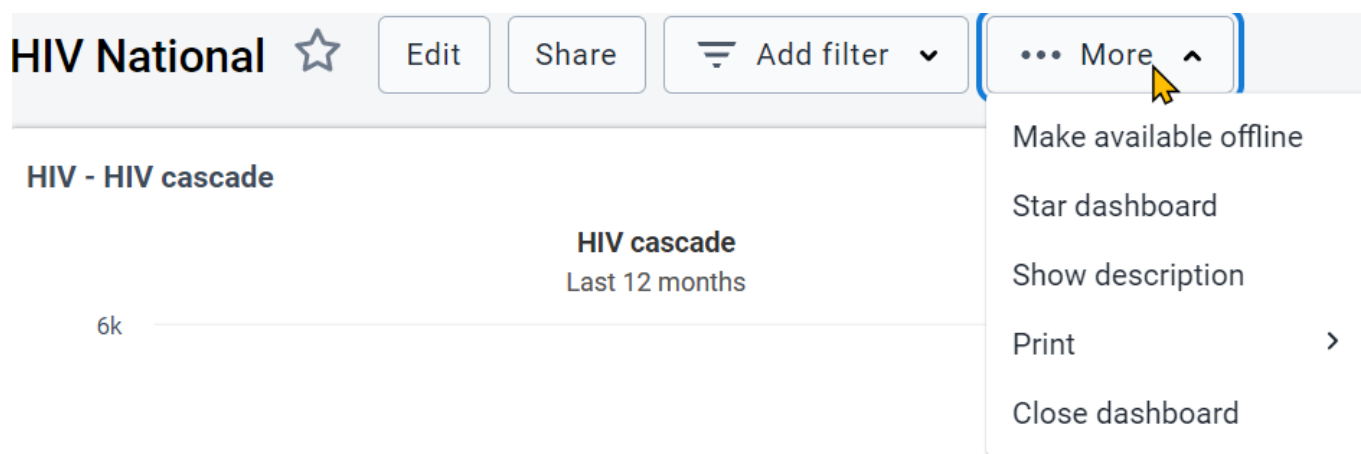
We can use the "HIV national" dashboard to explain the dashboard interface.



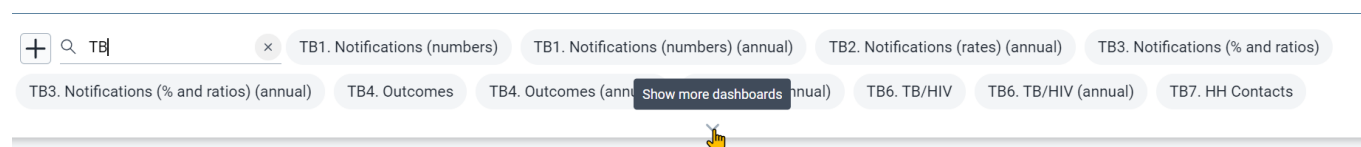
The top of the dashboard has the various dashboards the user has access to along with the search bar. Dashboards that have been "starred" appear first in the list of dashboards. You can 'star' the dashboard by using the star icon next to the name of the dashboard. You can also click on the "info" button to see a description of the dashboard.



The “more” button allows you to access several additional features, such as viewing the description and printing the dashboard.



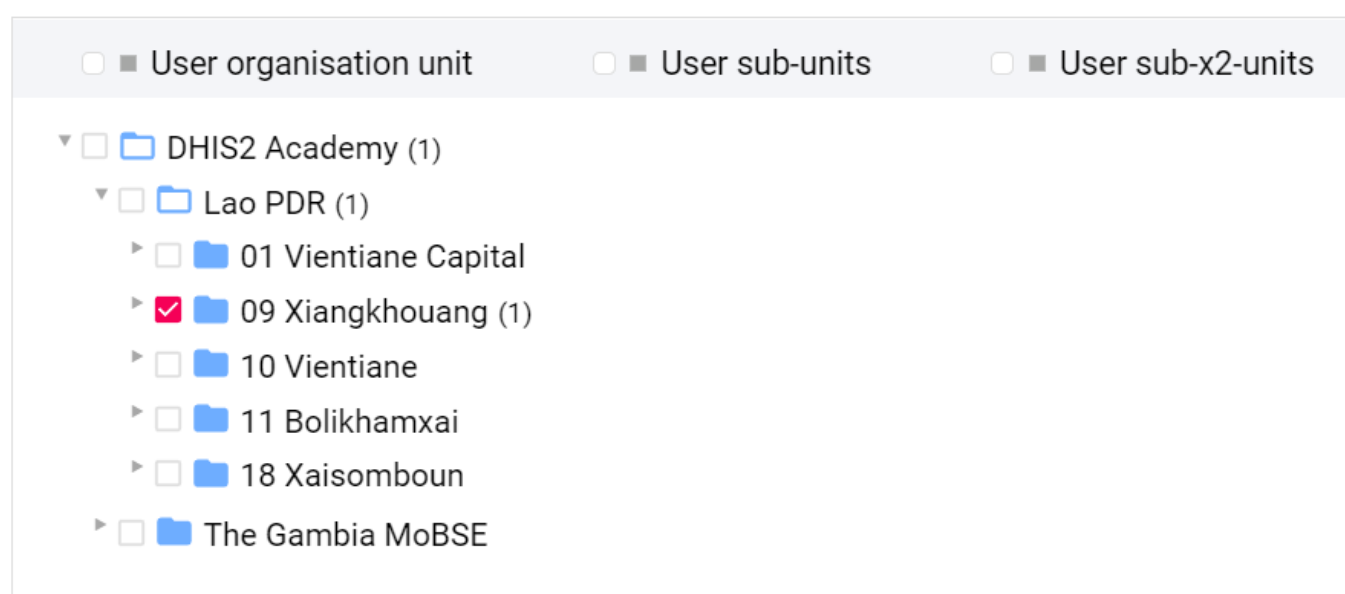
You can use the search bar to find particular dashboards. You can also expand the list of dashboards by using the “Show More” button or dragging the bar to be wider and include more dashboard items.



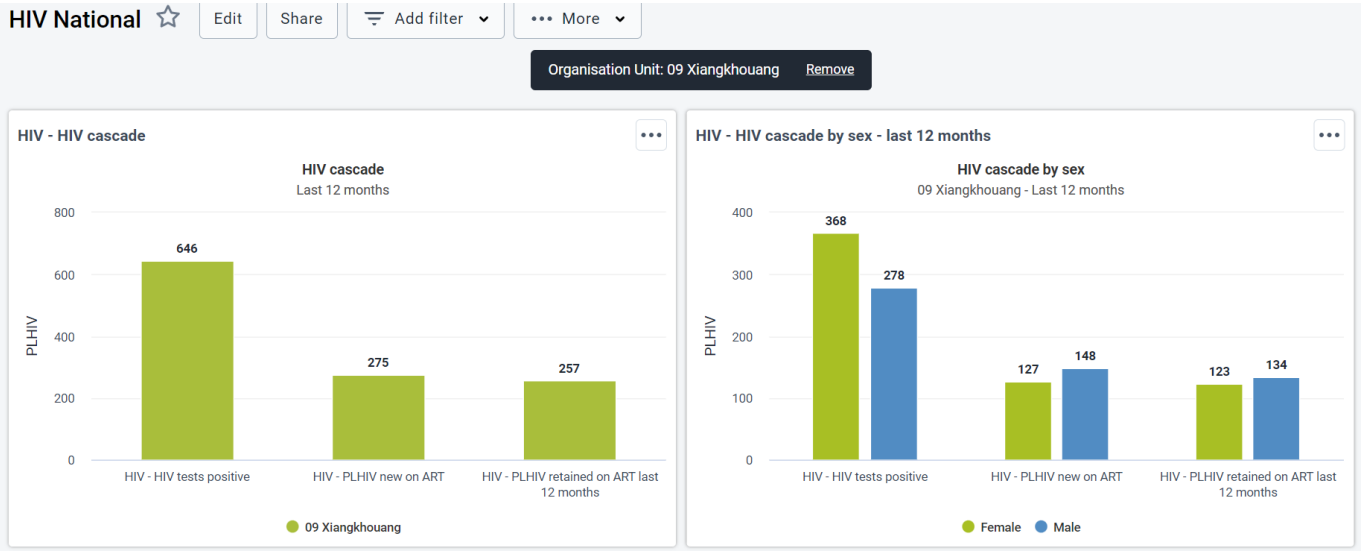
## Use the filter

Within the dashboard interface, we can decide which level of data we are seeing by using the filter. In the HIV National Dashboard, at the moment, all of the outputs are displaying data for for Lao. Select “Add filter” and “Organisation Unit” to apply an org unit filter. Select a province within the org unit filter and update the dashboard.

## Organisation Unit



All of the outputs will be updated to use the filter that you have applied. You will also see a message at the top of the dashboard showing the filter you have applied.



We can add other filters to the dashboard as well. This includes a period or data dimension. This feature is very useful as it filters all of the items on the dashboard at once. For example, you could also add a filter for the period, only viewing the a specific month of data.

Period

Relative periodsFixed periods

Period type

Year

Monthly

2022

January 2022

February 2022

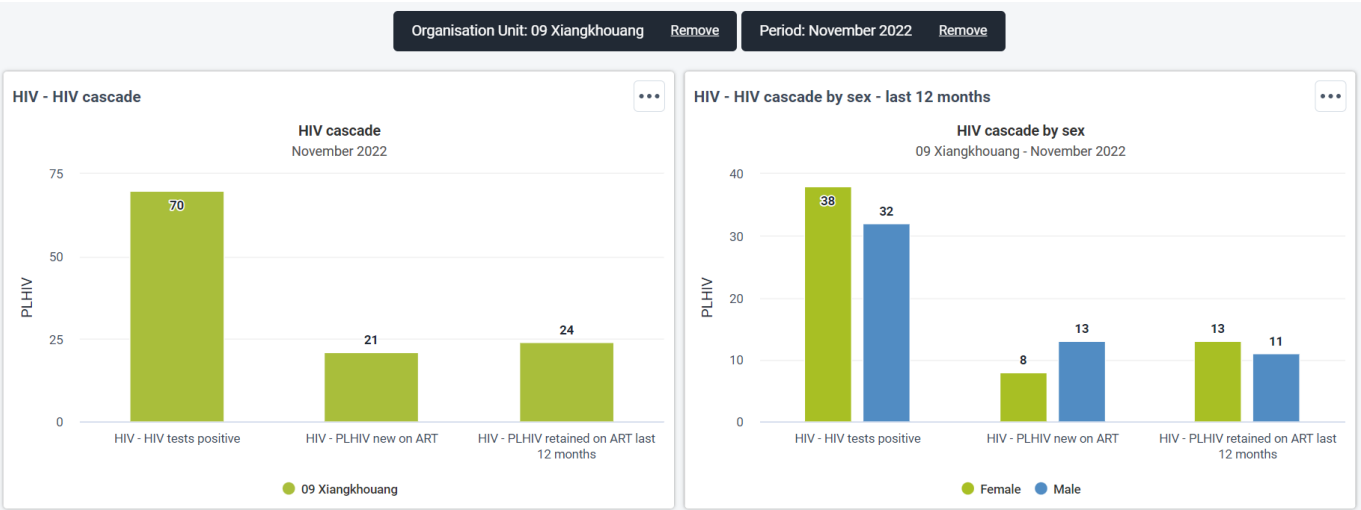
March 2022

➔

Selected Periods

November 2022

This will update all of the items on the dashboard to include data from the options you have filtered out only.

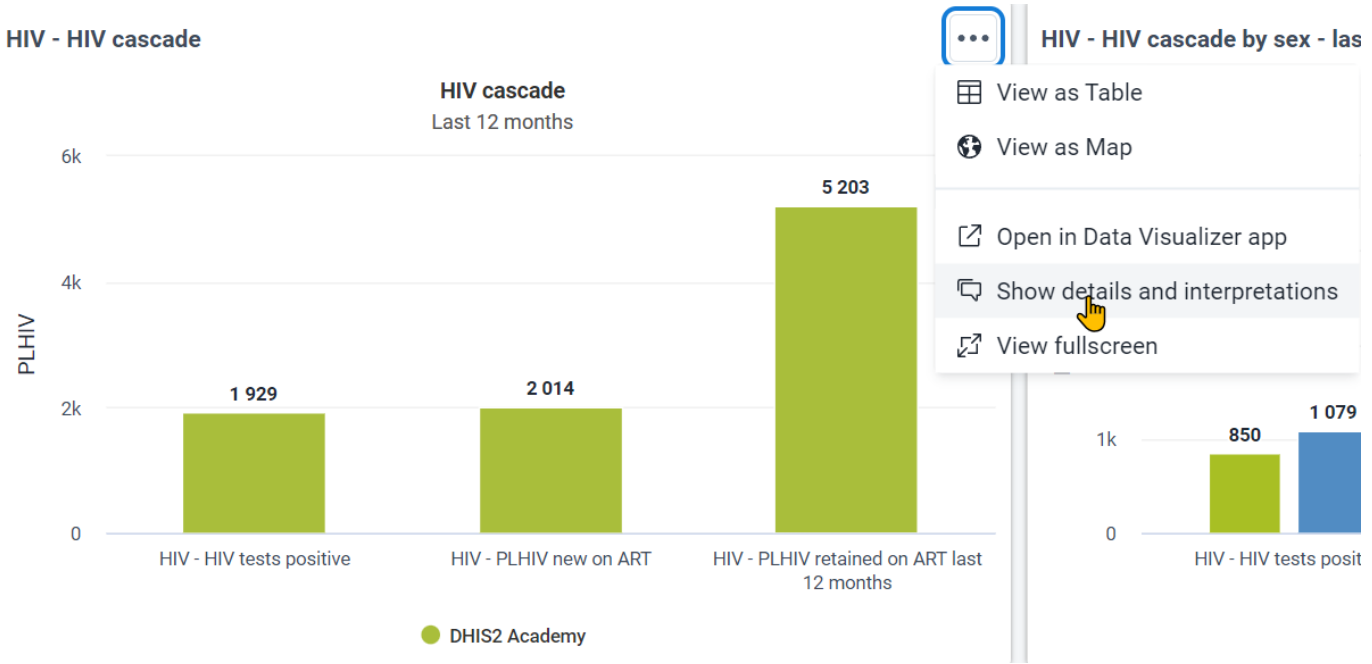


You can remove these filters by clicking on the “Remove” text next to the filter on the top of the dashboard.

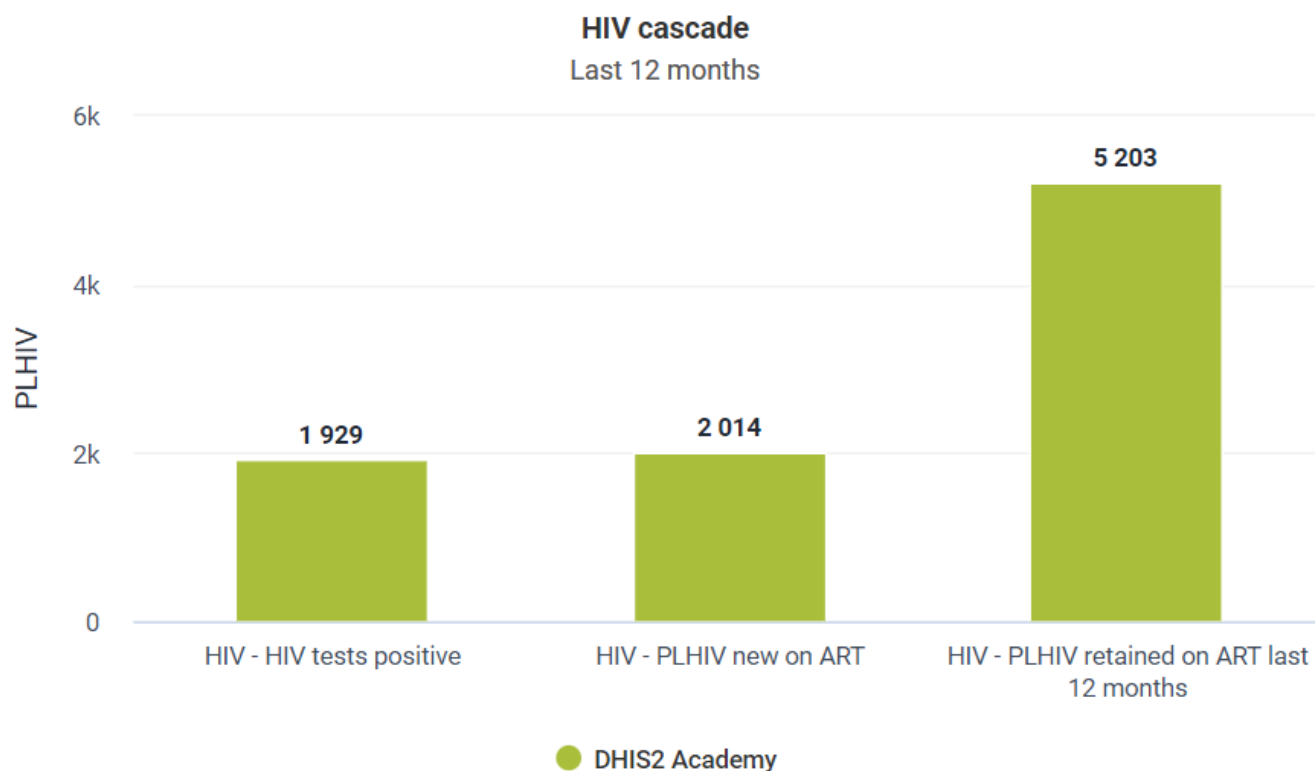
Discuss how descriptions and interpretations are added to the dashboard

Select the chart HIV - HIV Cascade from the HIV National dashboard. When we save an item, we are asked for a description. This description appears in the panel within each app and can also appear within the dashboard item. It is recommended that all outputs have a description attached to them.

To show the description, select the menu icon for the dashboard item followed by "Show interpretations and details."



## HIV - HIV cascade



## Visualization details



HIV positive tests, PLHIV newly on ART and PLHIV retained on treatment over the past 12 months. For monitoring HIV programme effectiveness for test and treat policy and retention on treatment over time.



**Owner:** Thai Nguyen

**Created:** Aug 6, 2018

**Last updated:** Nov 2, 2022

**Views:** 0

**Sharing:** Public: Read

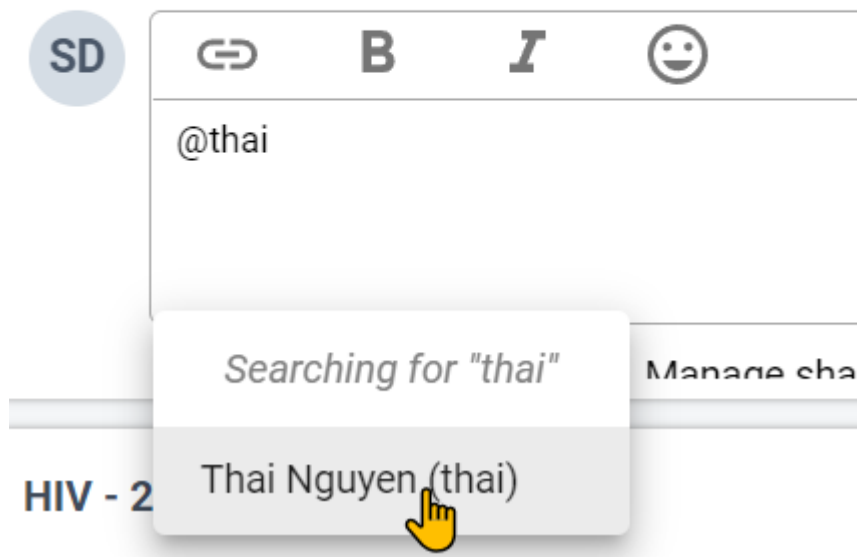
## Interpretations



You can also add interpretations directly on the dashboard. When making these interpretations, you can directly tag individuals in your comment. They will receive a notification in the messages app and e-mail if it is configured.

## Interpretations

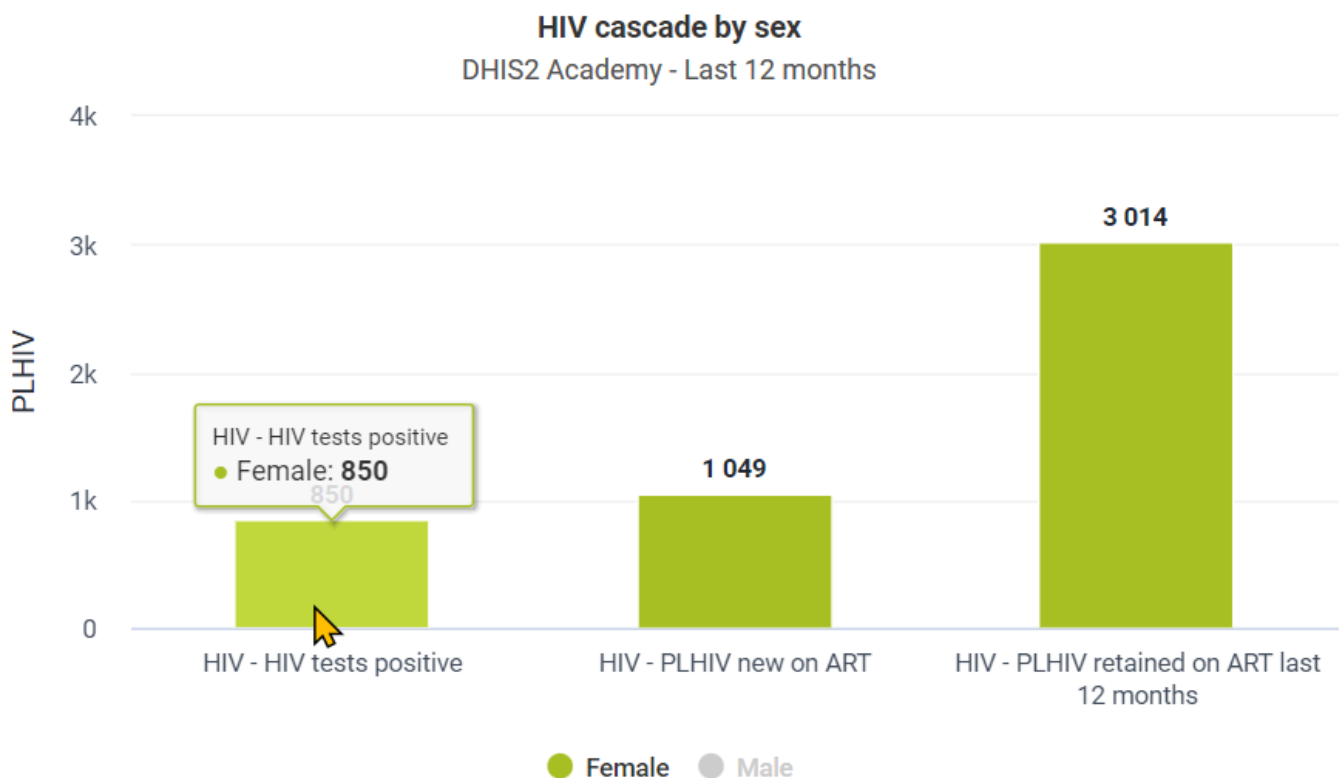
No interpretations



### Review the interactivity of dashboard items

Dashboard items are meant to be interactive. This is true of charts, maps, and tables. De-select the male disaggregation on the chart HIV - HIV cascade by sex - last 12 months chart. This will cause those items to disappear. You can add it back in before proceeding. Hovering over items in the chart will also show a small description of the chart item.

#### HIV - HIV cascade by sex - last 12 months



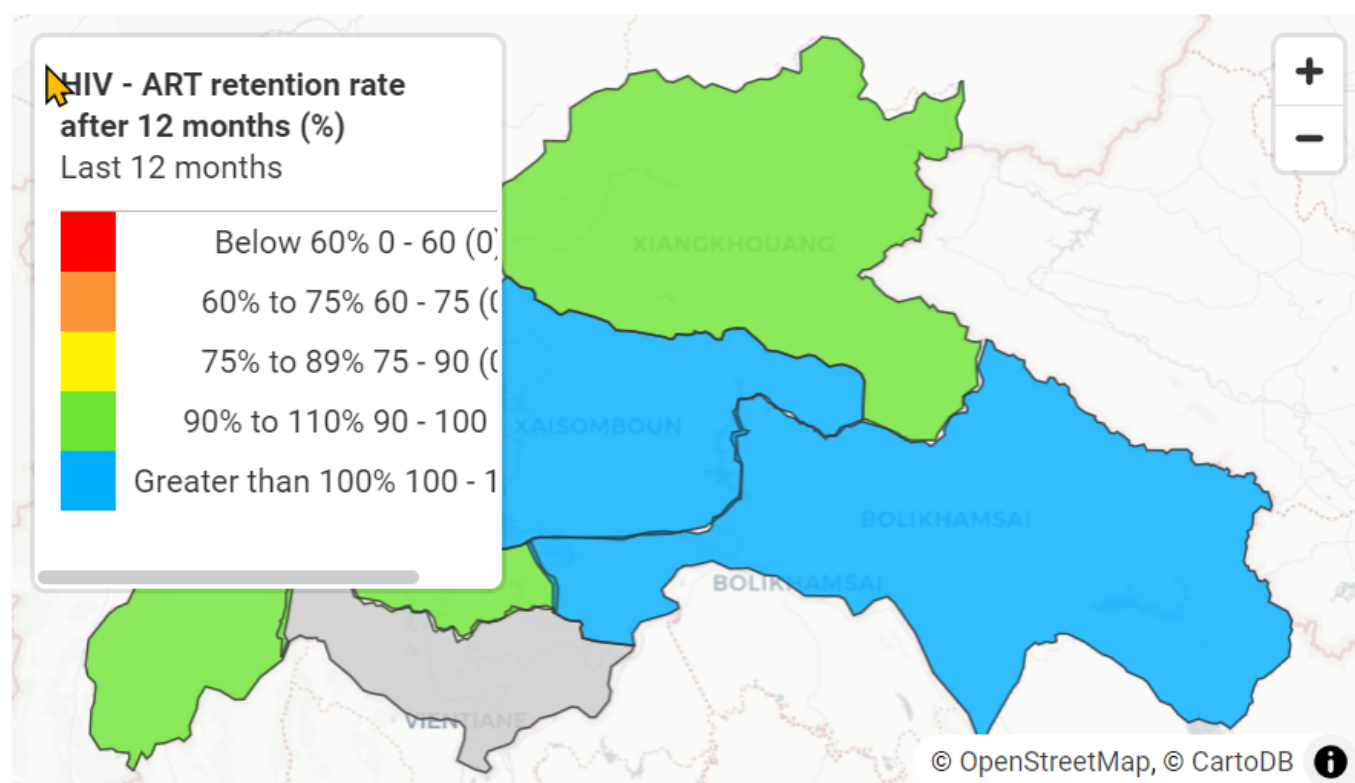
Tables allow you to sort them within the dashboard. You can do this by selecting a column heading within a table.

### HIV - ART performance by sub-orgunits

ART performance						
Last 12 months						
Organisation unit / Data	HIV - PLHIV new on ART	HIV - PLHIV currently on ART	HIV - Ratio of new on ART to newly diagnosed (%)	HIV - ART retention rate after 12 months (%)	HIV - PLHIV tested that are virologically suppressed (%)	HIV - HIV viral load testing coverage annualized (%)
18 Xaisomboun	82	11.6	89.1	101.8	100	543.1
09 Xiangkhouang	275	69.7	42.6	95.9	97.4	497.8
11 Bolikhamxai	280	44.8	78.9	108.8	81.3	642.9
10 Vientiane	410	94.1	49	95.5	92.7	537.7
01 Vientiane Capital	967	5 160.6		3 427	95.7	828.7

While maps allow you to show the legend, hover over thematic layers to see a more detailed description of the item you are reviewing

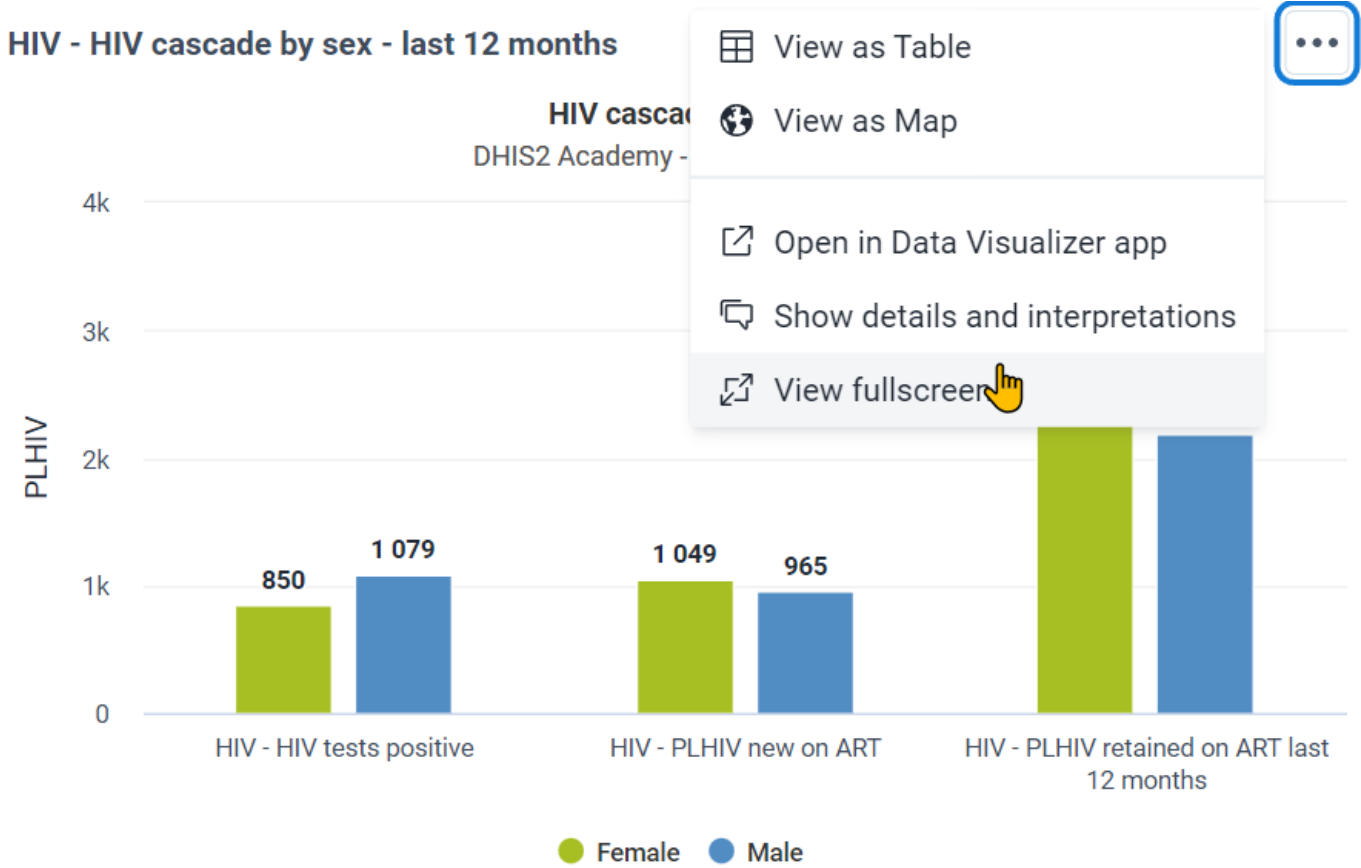
### HIV - ART retention rate (12 months)



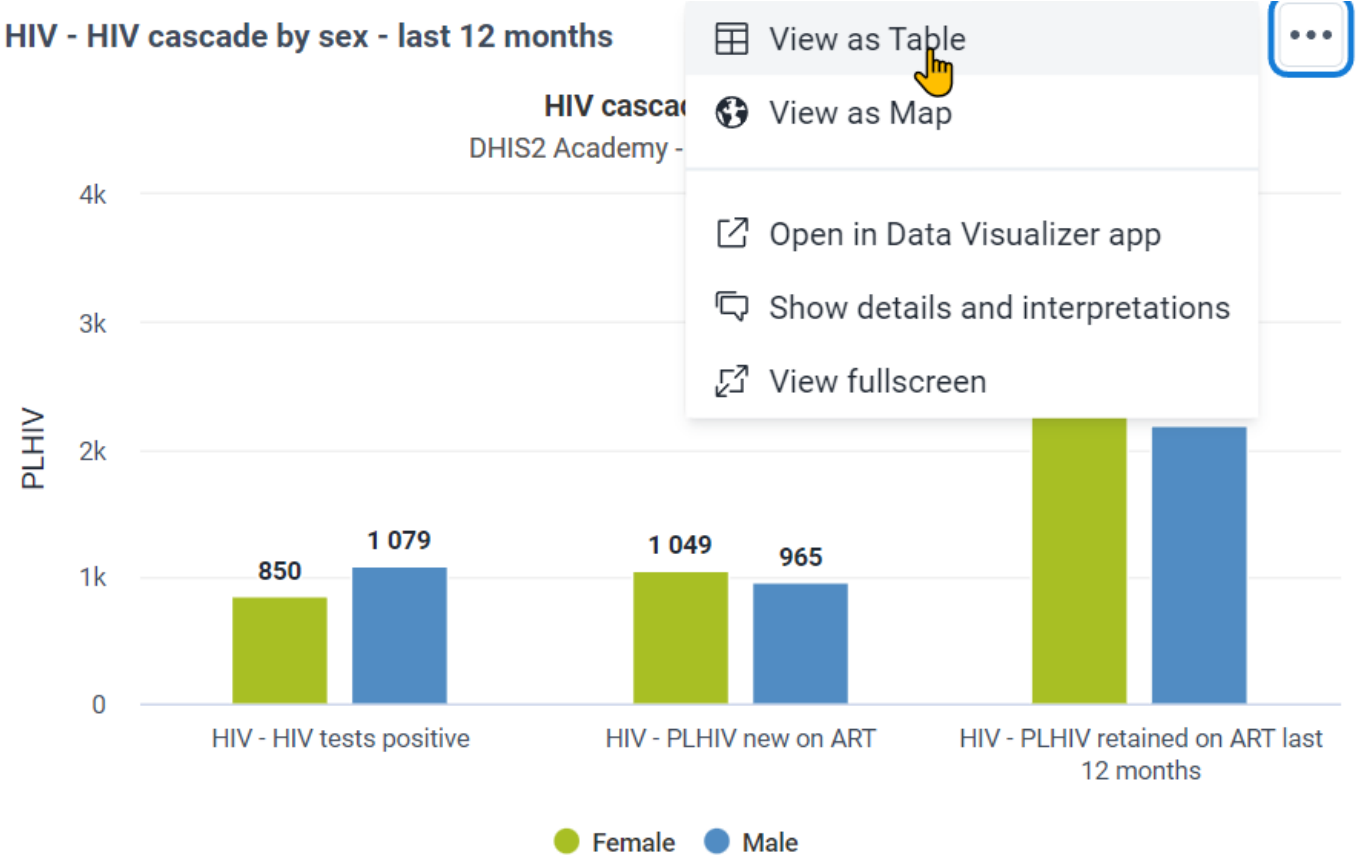
Note that all items (maps, tables, charts) can now be viewed in full screen by using the menu option. This may be useful if you want to focus on a specific dashboard item. You can do this by selecting the "View fullscreen"





option in the menu for a dashboard item.



Dashboard items also allow for you to change between different output types. View the chart HIV - HIV cascade by sex - last 12 months. You can change it to a table as an example.



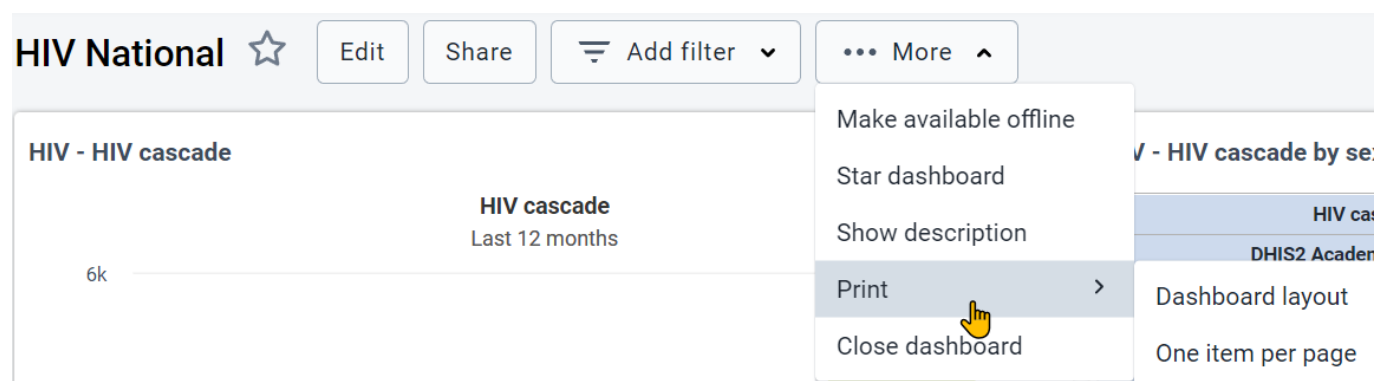
## HIV - HIV cascade by sex - last 12 months

HIV cascade by sex		
DHIS2 Academy - Last 12 months		
	Female 	Male 
HIV - HIV tests positive	850	1 079
HIV - PLHIV new on ART	1 049	965
HIV - PLHIV retained on ART last 12 months	3 014	2 189

### Printing Dashboards

From version 2.35 onwards DHIS2 supports printing of dashboards. To perform this click on the 'More' button at the top of the dashboard next to the 'Add filter' button.

In the sub-menu that appears we have 2 options.



- Dashboard layout - will print in the same layout as it appears in the DHIS2 dashboard (eg: can have more than one dashboard item per row)
- One item per page - will print only one dashboard item per page and that item will occupy the entire page

Once you click on either of the options above, a print preview window will open. The following points are recommended for best print results.

- Use Chrome, Firefox or Edge web browser
- Wait for all dashboard items to load before printing
- Use A4 landscape paper size and default margin settings in the browser print dialog

You will see a preview of the dashboard print out after selecting one of the print options

Print Preview: dashboard layout

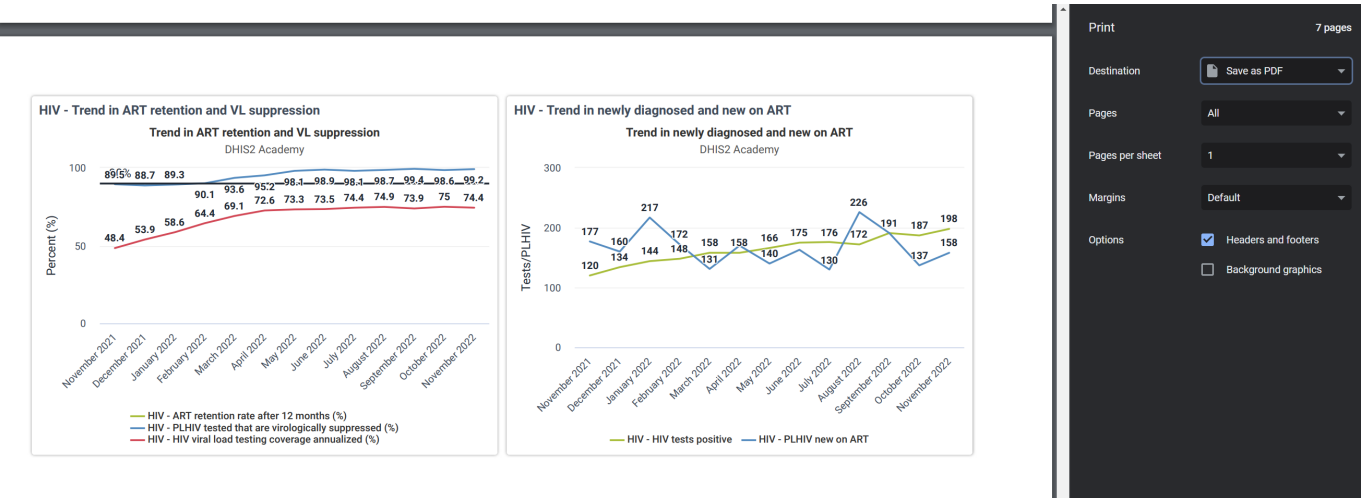
For best print results:

- Use Chrome or Edge web browser
- Wait for all dashboard items to load before printing
- Use A4 landscape paper size, default margin settings and turn on background graphics in the browser print dialog

HIV National

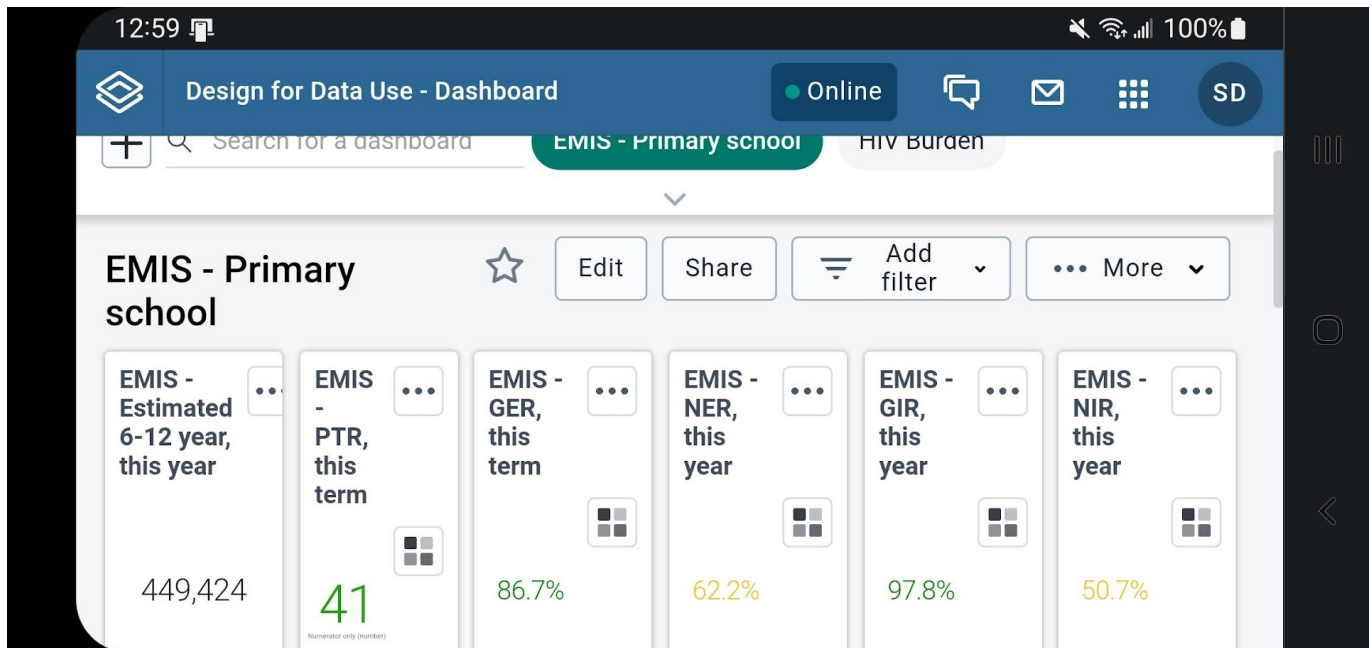
Once all the dashboard items are finished loading, click on the 'Print' button on the right top corner.

In the next window, select the printer you want as the 'Destination' and click on the 'Print' button on the bottom of the window. Note that this means you can also print to PDF if you would like.



Accessing Dashboards from a Mobile Device

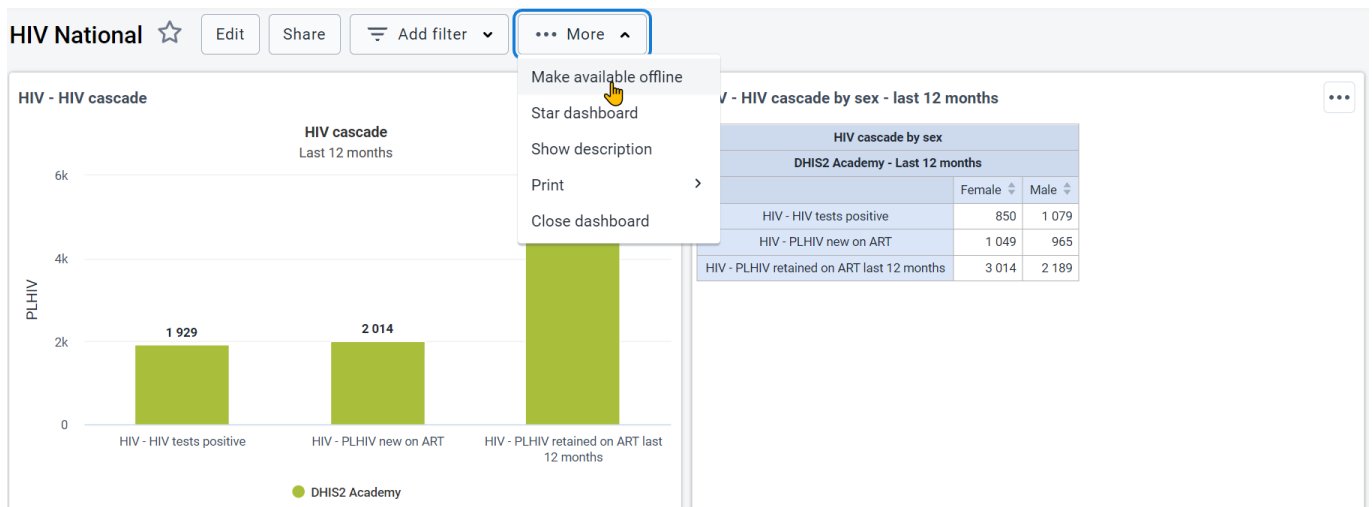
From 2.36, dashboards can be accessed via a mobile device without any additional customization requirements. You can just log in via your mobile device using a mobile browser and the dashboard will adjust its layout to fit the items accordingly. Both portrait and landscape orientations are supported.



### Making dashboards available offline

Dashboard can be made available to work offline. They will be stored in cache. As long as the person does not log out of DHIS2 while online/offline, they will be able to access the offline dashboard.

To save a dashboard offline select More -> Make available offline

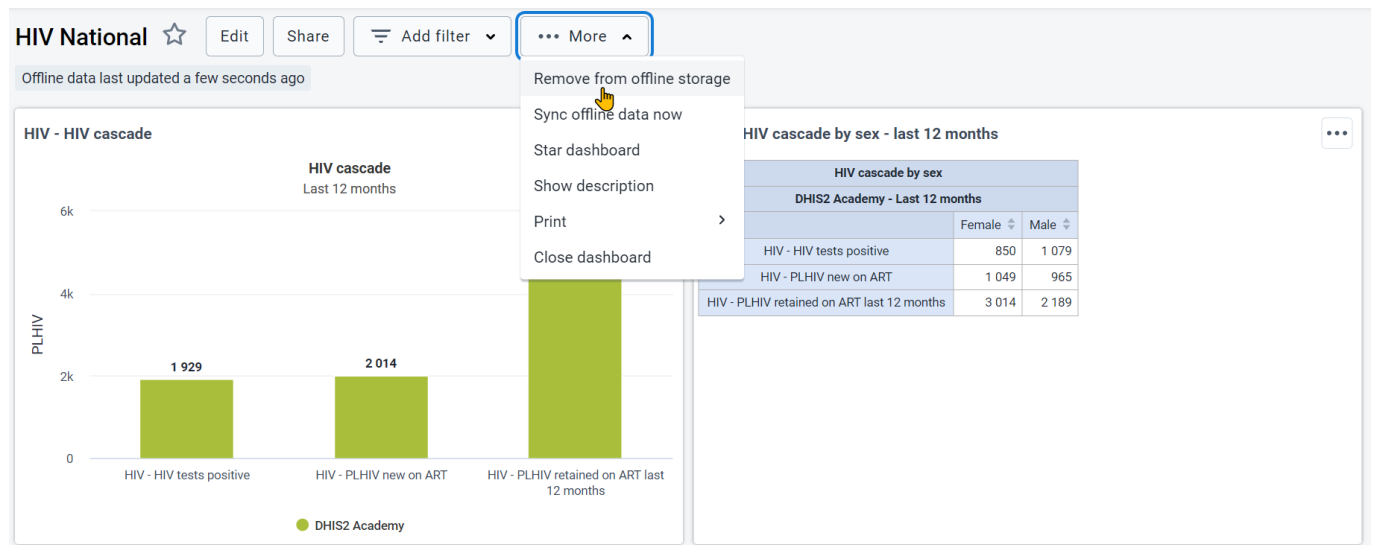


The dashboard will download to your cache and you will see an indicator beside the name of the saved dashboard.



Now, if you go offline, you will be able to access this dashboard as long as you do not log out of DHIS2. You can even close the tab/browser as long as you have saved the link to access it next time.

If you no longer want the dashboard stored offline, you can turn this off via the menu



## STOP - Perform Exercise 1

### Creating Dashboards

Review slide 6-8 in the presentation:

<https://docs.google.com/presentation/d/1Fbg5utWr4SkUovy9aliPKdzDvvHAzRtCbxN6MyFo2eM/edit?usp=sharing>

This will discuss adding new items to the dashboard.

### Create a new dashboard

To add a new dashboard, click on the "+" sign at the top of the dashboard page.

Outline the steps required in order to add the item to the dashboard. You can use some of existing examples from the termly tool (EMIS) or health use cases.

**Analytics Tools - Dashboard**

Save changes Print preview

**Add the Dashboard Title**

Dashboard title  
Untitled dashboard

**Add the Dashboard Description**

Dashboard description

**Choose your layout style**

Layout  
Freeflow Change layout

Add new items to  
End of dashboard Start of dashboard

**Search for objects from here: Saved tables, charts, maps, ....**

Search for items to add to this dashboard  
Search for visualizations, reports and more

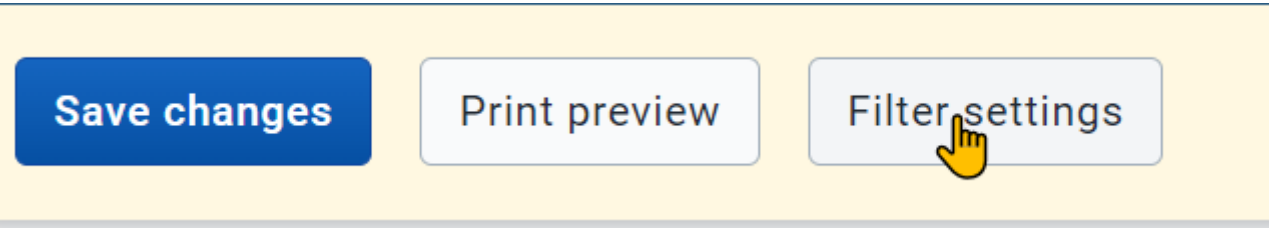
**After adding, drag and drop, then adjust to fit the desired size both vertically and horizontally.**

**SND\_HIV - HIV tests performed - Public Facilities - Last 3 years**

HIV tests performed within public facilities								
Sex	Female				Male			
	2018	2019	2020	2021	2018	2019	2020	2021
Organisation unit / Period	2018	2019	2020	2021	2018	2019	2020	2021
Cardinal Hospital Gateway PHC	2 395	2 880	2 209	2 077	1 499	1 862	1 380	1 295
Crow Health Centre	4 042	4 859	3 707	3 532	2 554	3 038	2 386	2 245
Hawk Primary Health Centre	1 021	1 193	918	822	830	983	741	741
Ostrich Health Centre	3 702	4 392	3 374	3 167	2 357	2 791	2 176	1 995
Owl Dispensary	338	452	319	306	289	370	275	240
Peacock Dispensary	292	315	263	229	223	261	207	196
Pigeon Primary Health Centre	1 092	1 356	1 020	940	890	1 091	872	794
Robin Primary Health Centre	1 158	1 398	1 041	983	962	1 133	874	844
Woodpecker Health Centre	2 340	2 978	2 217	2 111	1 540	1 802	1 418	1 276

Discuss the filter settings

Note that there are now some additional options for managing the dashboard filter settings. As an example, you may want to remove the category filters or only include the category filters relevant for the dashboard items you have added. Do this by accessing “Filter settings” when creating or editing a dashboard.



From here, you can select which filters you want to include in the dashboard. This can help in reducing confusion as you can ensure that only filters that will work with the dashboard are included and can limit the options for the end-user based on the information you want them to see.

Dashboard filter settings

Dashboards can be filtered by dimensions to change the data shown. By default, all dimensions are available as filters. Alternatively, only selected dimensions can be made available on a dashboard.

- ☐ Allow filtering by all dimensions
- ☒ Only allow filtering by selected dimensions

Available Filters

Admin Levels

Age in years (0-14, 15+, unknown)

Age in years (0-4, 5-14, 15+)

Age in years (0-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65+, unknown)

EMIS Sc - Levels

IPD/OPD

Malaria burden

Ownership

Population Estimates

Pregnant women/others

Results/Targets

Sex (Male/Female)

→→

→

←←

←

Selected Filters

Period

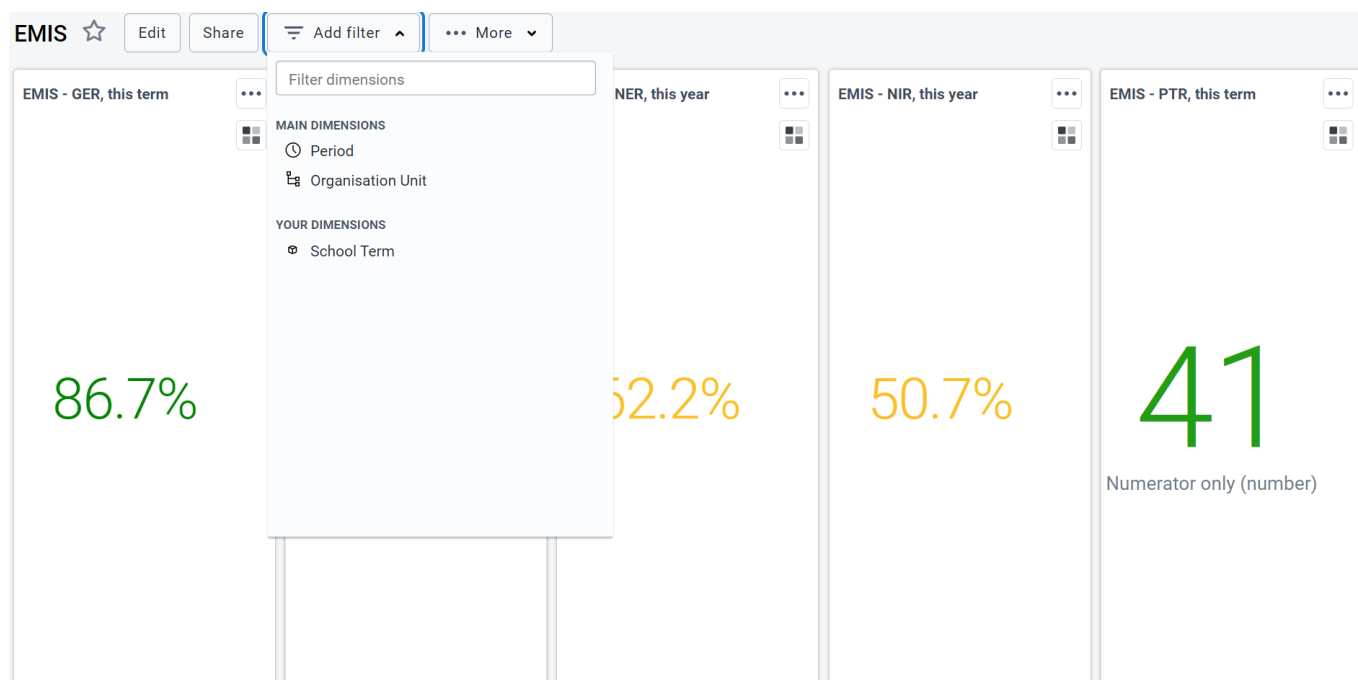
Organisation Unit

School Term

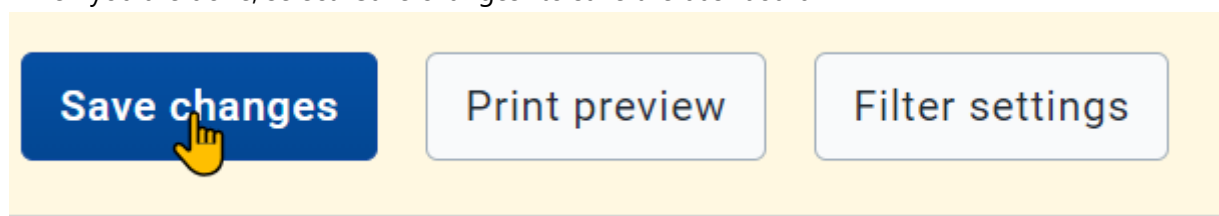
Cancel

Confirm

These changes get applied to the “Add filter” button after you have saved the changes for the dashboard you are working on.



When you are done, select "Save changes" to save the dashboard



## STOP - Perform Exercise 2

### Re-Using Dashboards Across Many Users

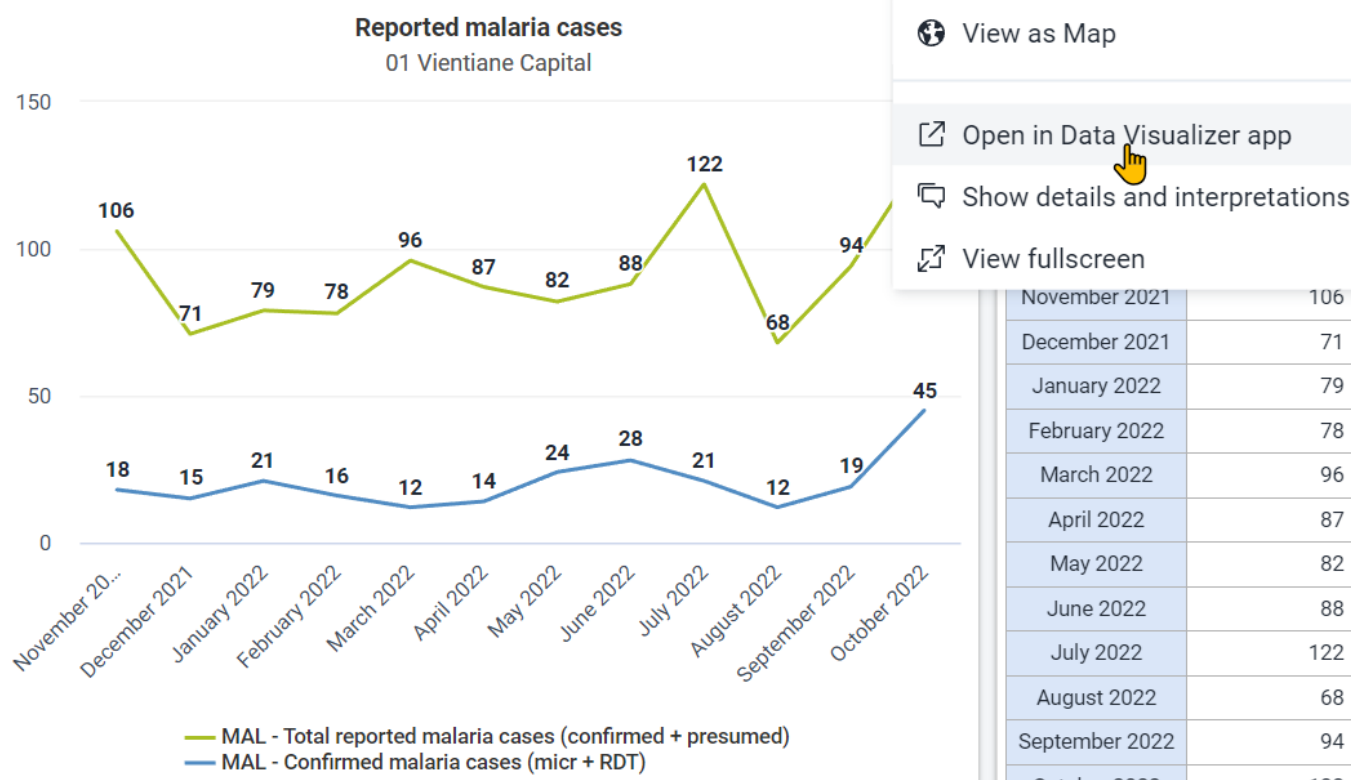
#### Review user org units

We can now review user organisation units and sharing.

Let us do this by reviewing one of the already available WHO dashboards ("Malaria Burden Reduction")

You can open up one of these outputs to discuss this function. This example uses the output MAL - Reported malaria cases.

## MAL - Reported malaria cases



Review the organisation unit selection. In the example of the chart, the selection being made is the “User organisation unit.” If I am currently logged in as user which has access to the entire hierarchy, organisation unit is the the top level org unit. “User sub x2 units” would be Provinces for this particular user, as that would be 2 levels below their immediately assigned organisation unit. The user sub units can therefore be considered a “relative” org unit selection; being that it is relative to the org unit the user has been assigned to.

## Organisation Unit

☒ User organisation unit
 ☐ User sub-units
 ☐ User sub-x2-units

▶ ☐ DHIS2 Academy

If you go back to the dashboard you can see this in the various outputs that are present; note that user organisation units have been selected for all of these outputs. You may want to discuss a couple of examples to reinforce this point.

### Discuss sharing

Review slide 9 in the presentation:

<https://docs.google.com/presentation/d/1Fbg5utWr4SkUovy9aliPKdzDvvHAzRtCbXN6MyFo2eM/edit?usp=sharing>

We have tried to create this dashboard so it can be re-used multiple times. In using user org units, the data a user sees should be dependent on the org units they are assigned. This allows you to make one dashboard



that can be shared to many users at once, with all of these different users seeing different outputs.

In order to share a dashboard you need to open the sharing dialog via the “Share” button at the top of the dashboard. This will open the dialog for the dashboard.

Sharing and access: MAL - 1.Malaria Burden Reduction

Dashboard sharing

Apply sharing to dashboard visualizations

Give access to a user, group or role

User, group or role

Access level

Search

Select a level

Give access

Users, groups and roles that currently have access

User / Group / Role	Access level
<div><div></div><div>All users</div><div>No access</div></div>	<div>Metadata No access</div>
<div><div></div><div>Malaria access</div><div>Can view</div></div>	<div>Metadata View only</div>
<div><div></div><div>Malaria admin</div><div>Can view and edit</div></div>	<div>Metadata View and edit</div>
<div><div></div><div>Malaria data capture</div><div>Can view</div></div>	<div>Metadata View only</div>

Close

You can share items with either users or user groups. It is often more advantageous to share via a user group so you can share the item with many users at once. To add a user or user group, start typing their name in the search box, you will then see the name of the user or group appear. Select it to add it to the sharing dialog.

Sharing and access: MAL - 1.Malaria Burden Reduction

Dashboard sharing

Apply sharing to dashboard visualizations

Give access to a user, group or role

User, group or role

gen

GEN access

GEN admin

Access level

View only

Give access

Users, groups and roles that currently have access

All users

No access

Access level

Metadata No access

Malaria access

Can view

Access level

Metadata View only

Malaria admin

Can view and edit

Access level

Metadata View and edit

Malaria data capture

Can view

Access level

Metadata View only

Close

Before you add users/groups to the sharing settings for the dashboard, you can assign them different permissions (note: this can also be edited after they are given access)

- Can edit and view: Can both alter/edit the dashboard (rename, add/remove items, delete dashboard) as well as view the dashboard
- Can view: Can view the dashboard but can not make any changes.

Sharing and access: MAL - 1.Malaria Burden Reduction

Dashboard sharing

Apply sharing to dashboard visualizations

Give access to a user, group or role

User, group or role

gen

Access level

View only

Give access

Users, groups and roles that currently have access

View only

View and edit

Access level

18 / 20

Another import aspect of this is to ensure the items on the dashboard itself have been shared with the user groups you are sharing the dashboard with. If the visualizations (maps, charts, tables) are not shared, then the user may not be able to view the items on the dashboard correctly. Luckily, we can not apply sharing to all items on the dashboard from the dashboard itself by using the "Apply sharing to dashboard visualizations" tab.

## Sharing and access: MAL - 1.Malaria Burden Reduction

Dashboard sharing

Apply sharing to dashboard visualizations

### Apply dashboard sharing settings to visualizations

Applying the same sharing settings makes sure that users, groups and roles that have access to the dashboard also have at least "View only" access to its visualizations (charts, tables, maps, event charts, event reports).

If a user, group, or role already has "View and edit" access to a visualization, this won't be reduced to "View only". "All users" access level won't be updated or changed.

Applying sharing can't be undone, and needs to be done again if new visualizations are added to the dashboard or its sharing settings are changed.

ⓘ All 8 visualizations on this dashboard will potentially get updated sharing settings. These updated sharing settings will apply to 3 users or groups.

Apply sharing to dashboard visualizations



Close

By combining the concept of sharing with user org units, we can have one dashboard that can be re-used many times. As an example, we do not need to make outputs for every district; we can instead use the user org units feature combined with sharing to make one set of outputs that different different users can access to see their own data. We can review this concept in more detail. Clear your cache or open a new incognito window to log in as a different user.

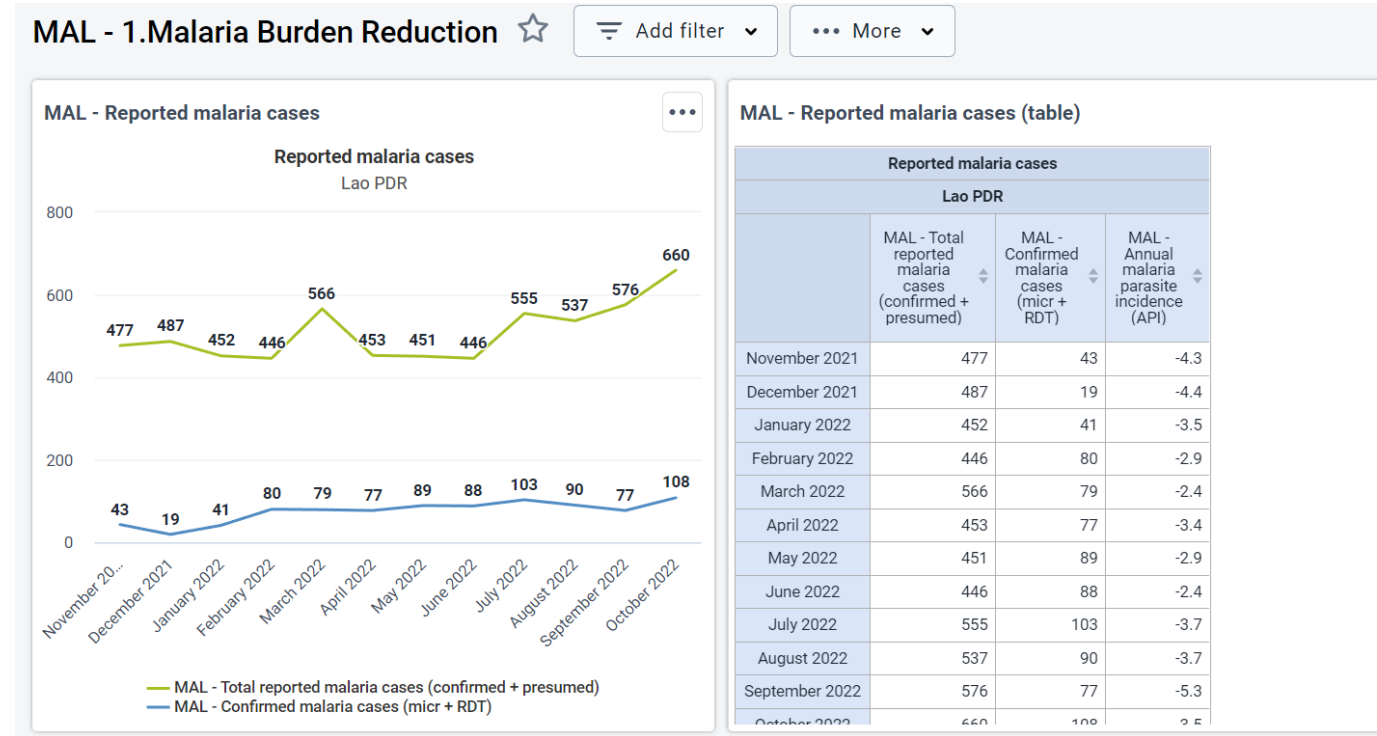
### Login as the malaria user

Username : malaria

Password : District1#

Review the same malaria dashboard that you were looking at before (Malaria Burden Reduction)

You will see it is displaying the country name of Lao in all of the visualizations now instead of the top level org unit.



This is due to the use of relative org units. You will also notice they only see the malaria dashboards; this is a result of sharing these dashboards and having this user being apart of the malaria access user group. You will see they can view the dashboards, but they can not edit them.

STOP - Perform Exercise 3