Learner’s Guide to Pivot Tables

PERFORM THESE EXERCISES IN THE ANALYSIS SYSTEM

What is this guide?

This guide contains all 8 exercises and detailed steps to perform them related to the use of pivot tables session for the Analytics Tools Level 1 academy. Please perform each of the exercises when prompted by your instructors.

Learning objectives for this session

1. Describe what a pivot table is
2. Demonstrate how to:
    1. Modify pivot table dimensions
    2. Create tables in the Data Visualizer app
    3. Use Pivot Table Options and Pivot Table Layout
    4. Add in categories and org unit groups as disaggregations
3. Download pivot table data
4. Explain how different number types can be used
5. Explain how to set up sharing for saved items
6. Demonstrate how to apply legends to pivot tables
7. Demonstrate how to freeze rows and columns

Time needed for this session

- Live demo: 1.5 hours
- Hands-on exercises: 2 hours
- Graded Assignment : 1 hour

Background on this topic/module

The Pivot Table module is a dynamic tool where you can perform data manipulations and visualizations in a tabular format. It is inspired by the Excel Pivot Tables and has some of the same dynamic features, but being a web-based tool it can’t replicate all the features of Excel.

The Pivot Tables is a great tool if you want to analyze larger chunks of the data or look at more details with multiple data dimensions at the same time. It allows for more flexibility in terms of selecting and visualizing multiple data dimensions (groupings and disaggregation) than the Data Visualiser and the maps tools.

These exercises assume it is not your first time interacting with pivot tables as this is covered during the online fundamentals academy; however it is likely that not every person in the academy would be advanced users of pivot tables. In this academy, we will build on the online fundamentals by working with disaggregation, organization unit groups and legend in more detail.

The first component of the demo will be a review for anyone who has taken the online aggregate fundamentals course.

Best practices, tips & tricks

1. Hide empty rows/columns is a very useful Pivot Table option when analyzing data across many org units or periods with gaps in the data.
2. Sort your table quickly by clicking on the sort symbol inside the column header cells
3. You must always save your table before you can add it to your dashboard or share it with colleagues
4. You can add color legends to your table (coloring of cells based on their values) under Options. Multiple legends can now be assigned within the same table and are created in the “Legends” portion of the maintenance app.

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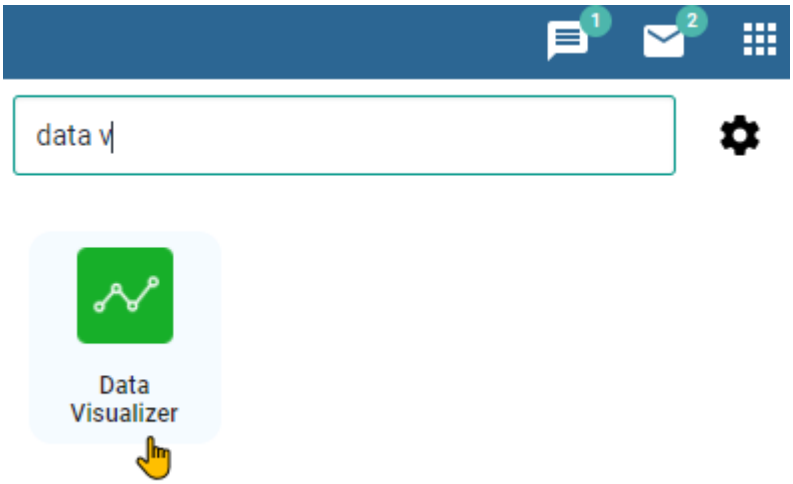
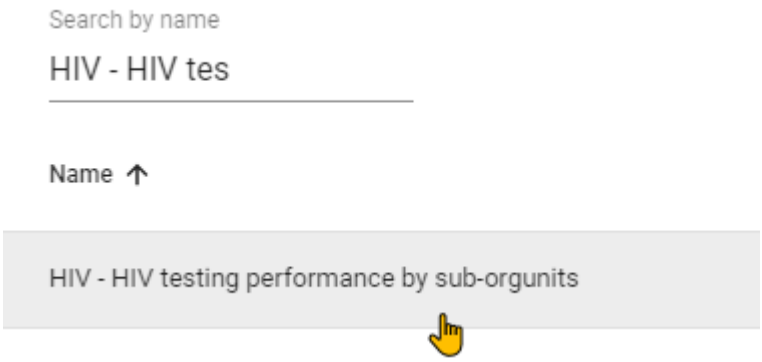
Exercises

Exercise 1 - Access the Data Visualizer App and Modify the Dimensions after opening a saved item

Go to Apps -> Data Visualizer



Open the table “HIV - HIV testing performance by sub-orgunits”



Review the table

Data is arranged in a simple tabular output which is arranged in columns and rows. We see that rows represent the region (Where) dimension, columns shows HIV tests performed, number positive and the positivity rate which is something to do with data (What) dimension and at the top we see the months as period dimension to which the data in table is displayed.

Testing performance by orgunit			
February 2022, March 2022, April 2022, May 2022, June 2022, July 2022, August 2022, September 2022, October 2022, November 2022, December 2022, January 2023			
Organisation unit / Data	HIV - HIV tests performed	HIV - HIV tests positive	HIV - HIV test positivity rate (%)
Animal Region	1 006 553	160 822	16
Food Region	499 655	62 198	12.4

Now focus on the left side of the screen where we configure the output. This is where we select what to be displayed for each dimension.

Review of DHIS2 dimensions; data, periods and organization units.

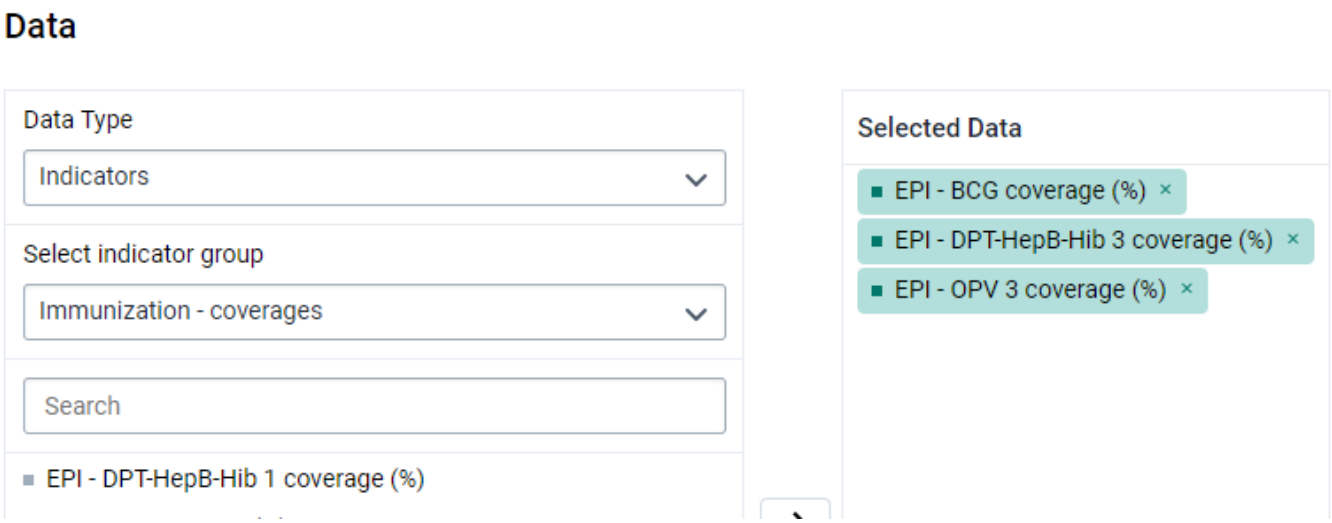
Understanding DHIS2 data dimensions

When selecting what data to add to a TABLE, at minimum you need to make selections in terms of “what”, “where” and “when” the data is describing.

“What” describes indicators (calculated by formulas), data elements (raw data as collected in the data entry forms) or reporting rates. Both are organised as groups, so know your groups to quickly find what you are looking for. “Where” is found under Organisation Units, that is the location hierarchy from global to country and finally to sites, with all the intermediary levels in between. Know your orgunit levels to quickly navigate to the correct locations. “When” is found under “Periods”. There you can specify what periodicity or time you want to visualise data for. Periods are organised by Period Types (“frequency groups”), so to find “January 2023” you must look under Period type “Monthly”. “January-March 2023” is found under “Quarterly”, “2023” is found under “Yearly”. In addition to these “core dimensions” there are quite a few additional dimension providing more granularity to the “what” dimension, e.g. the age, sex and test results dimensions.

Modify the Data

Demonstrate that it is possible to select data from data elements, indicators or data sets



In the current selection both data elements and indicators are selected.

Relate the data elements and indicators to the session regarding Metadata (where you discussed how outputs link to metadata configuration). Ask them to identify each selected item in this example as a data element or an indicator.

Demonstrate how to select data elements/indicators. You can do this by removing one of the selected items and adding it back into the table.

Review the Periods

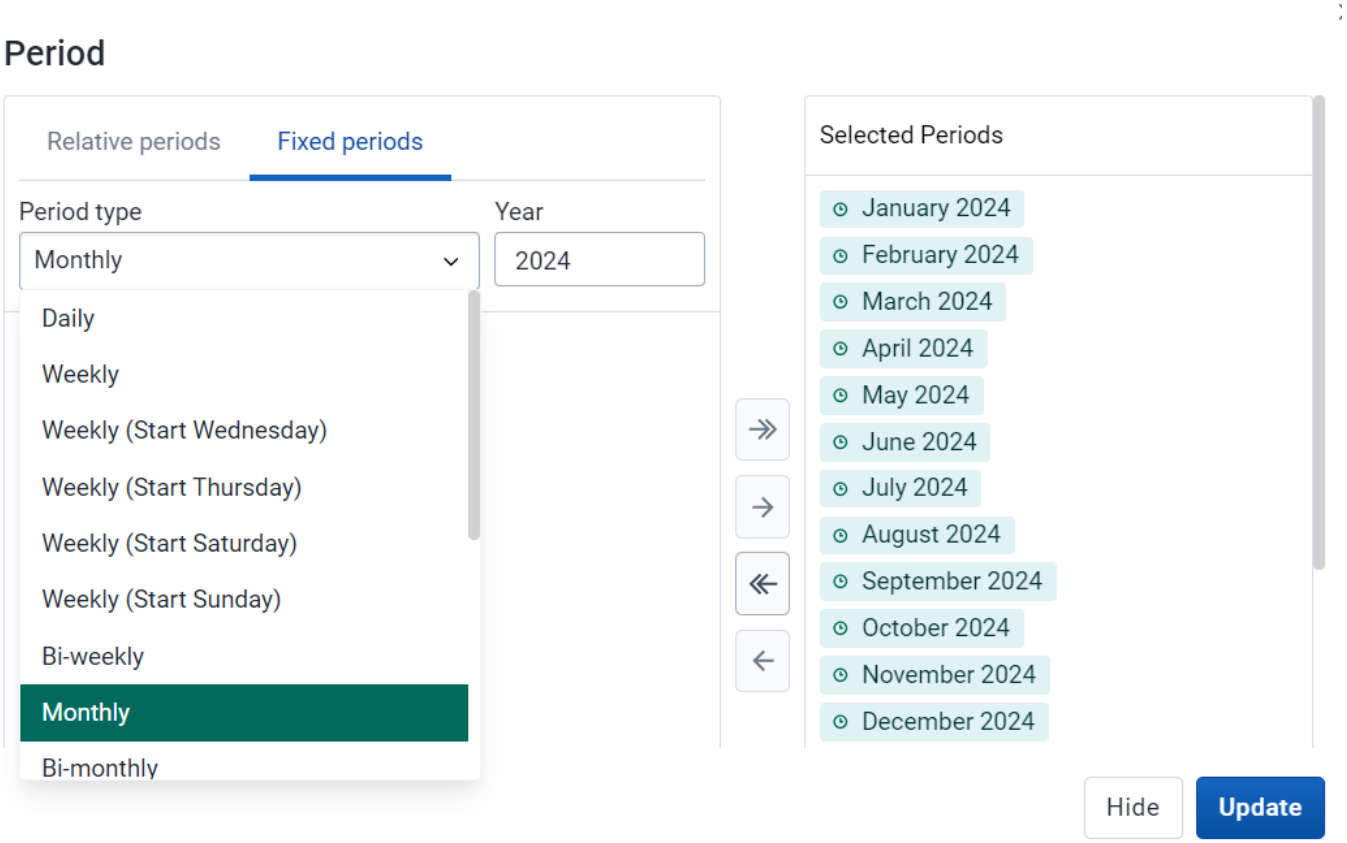
Next move on to Periods selection.

In DHIS2, there are two methods to select Periods. These are referred to as “fixed” and “relative” periods.

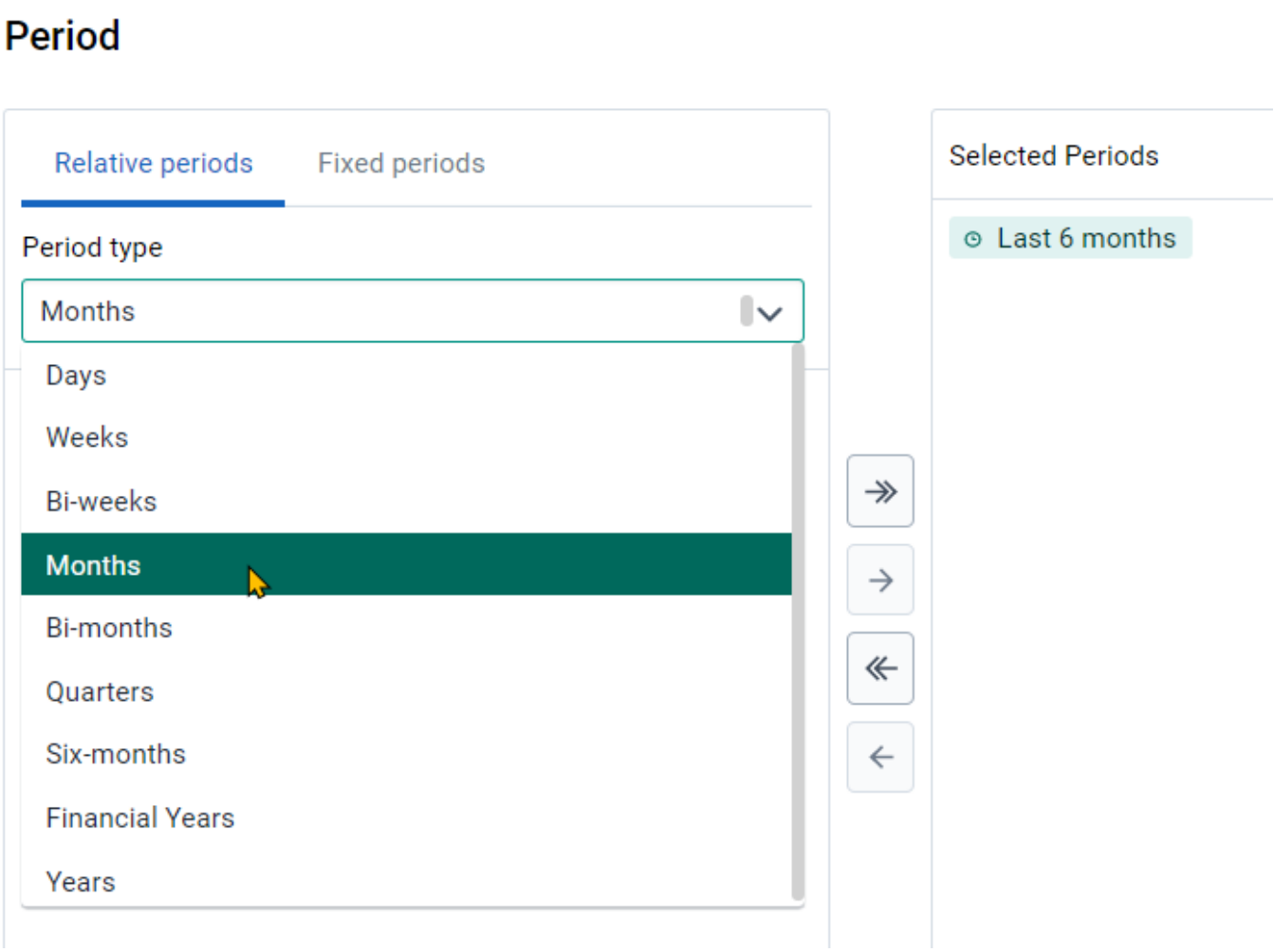
- Fixed periods specify the exact timeframe you wish to review the data you are analyzing. These are not subject to change over time and will not update automatically.
- Relative periods are relative to the current date. These will update automatically and can be useful if you want the item to be modified as time moves forward.

You can select various fixed period types depending on the time period you wish to review your data. You can also select multiple fixed period types if you wish to analyze your data in this manner.

Start with the fixed period selection.



Next, review what relative periods are. These periods are relative to today's date. They will constantly update as time goes forward and therefore are often a good choice for favorites. For example, if you are in 2024 and choose "Last Year" as the relative period, 2023 will be selected. In 2023, this will automatically shift to 2022. Over time, you will not have to edit each of the items you have saved as the selection of its data will constantly change.



You can see 'last 12 months' is already selected. Go ahead and modify this selection to the "last 6 months" and **update** the table to see what effect this has on the output.

Review Organisation Units

Next focus on **Organisation Units**.

What is currently selected is the user sub-units. This concept allows us to display data relevant to the organization units that a user has been assigned. This allows us to use one saved item with many different users, updating our output based on the organization units that have been assigned to them. In this example, a "sub-unit" is one organization unit level below what the user has been assigned.

Let's uncheck user sub-units to provide a clearer view on options available for organization units.

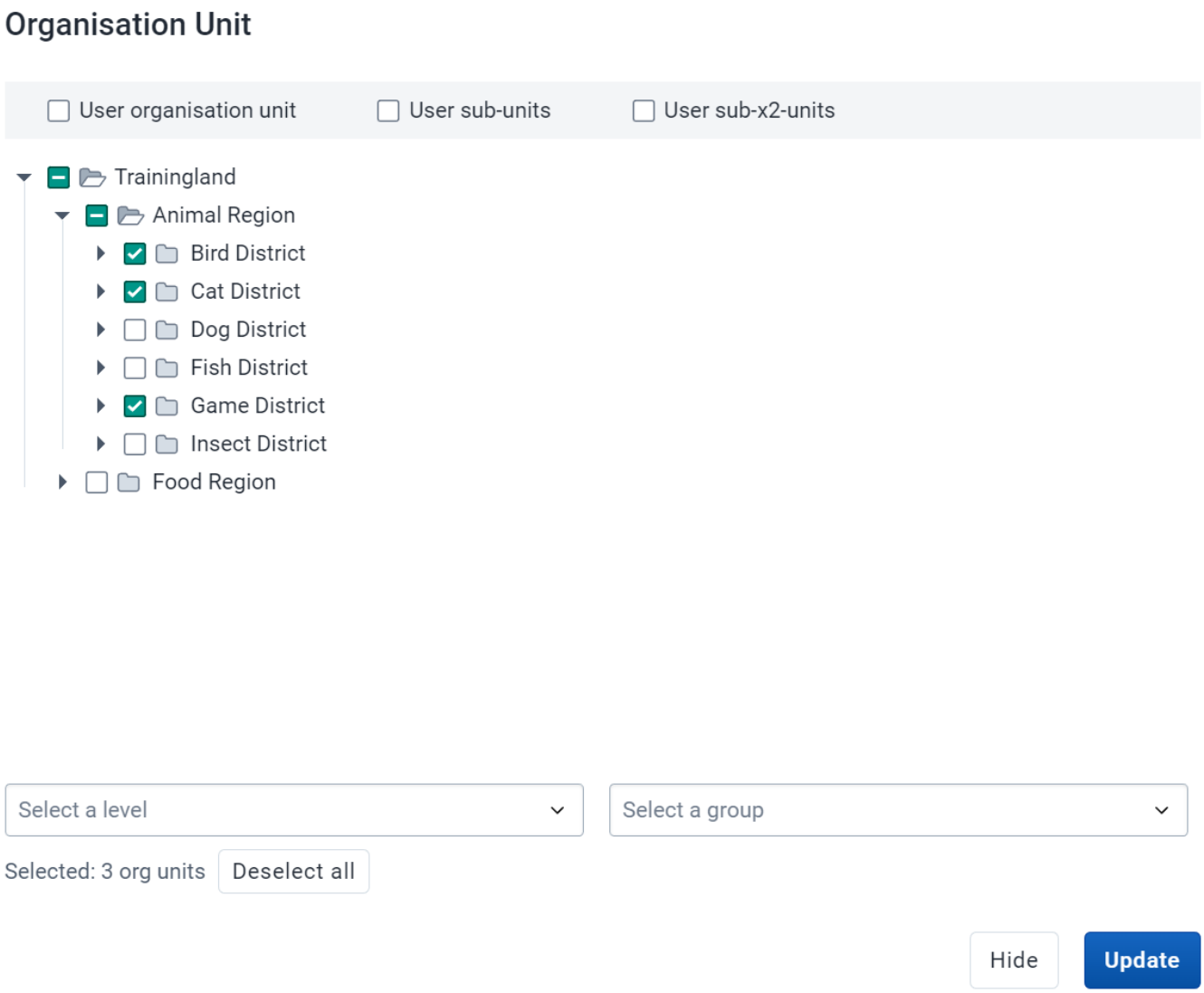
Review the different selection modes for orgunits:

1. Select organisation units
2. Select levels
3. Select groups

Select organisation units

This is the default way of selecting orgunits, simply select the units in the hierarchy that you want to use in the output. By default the "root" or top level unit is selected in the hierarchy. For most users this will be the

Trainingland unit or a country unit in the real production environment. If you just want the country totals simply leave the top most unit (in this case Trainingland) selected. The org unit hierarchy supports multiple selections, just select the org units that you want to include in your output.

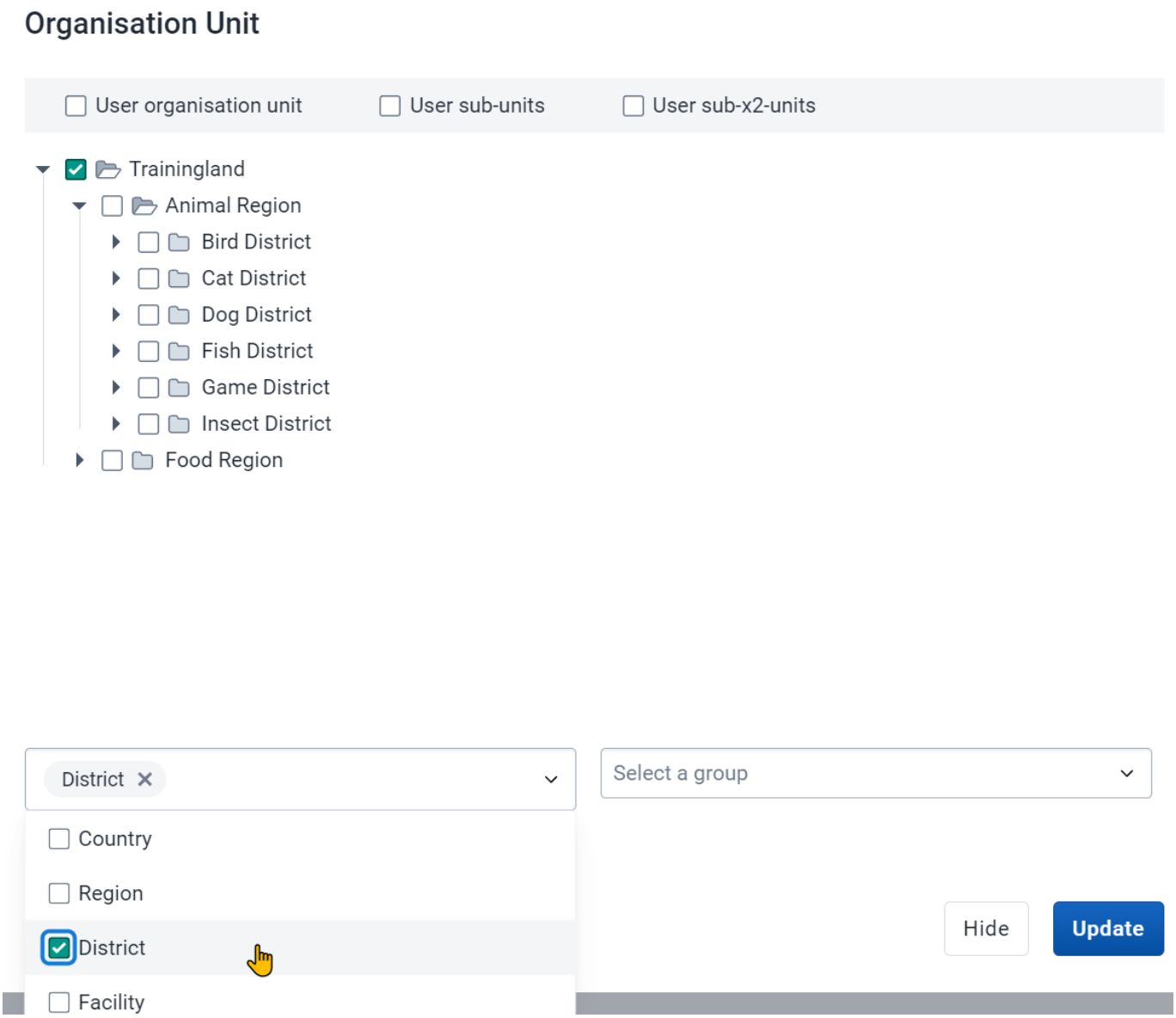


This is the most flexible way of selecting org units as any combination of selected units is allowed, mixing units from different levels etc. You can **update** he table to see how this affects the output.

Select levels

The 'Select levels' mode may be faster and more convenient when selecting all units at the same level. You can select a level by using the dropdown select available within the organization unit pop up menu.

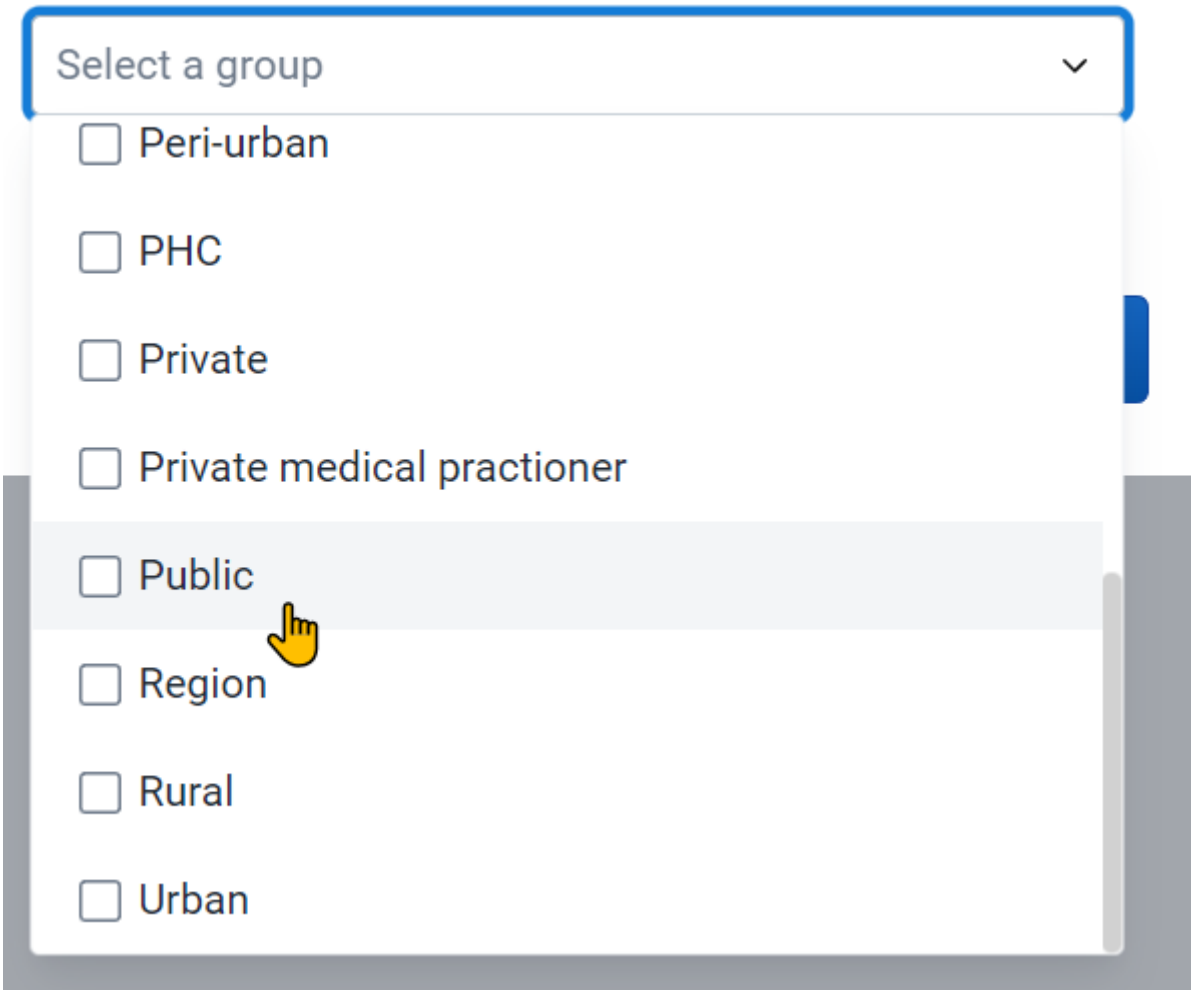
Select District as the level (in the drop-down box) and make sure Trainingland is selected in the hierarchy. This will give us all units at the District level in Trainingland. If we just wanted the districts in the Food Region we could change the selected unit in the hierarchy from Trainingland to Food Region. If we wanted all districts in Trainingland, we could make the selection as below:



You can go ahead and **update** the table in order to see the effect this has on the table.

Select Groups

'Select groups' is the third way of selecting orgunits. Orgunits can be grouped in as many orgunit groups as you like, and these groups can then be used as a filter to select all units of a particular type or another common set of characteristics. For example, this could be a hospital group for all hospital units or a public group for all public health facilities. There are several org unit groups available in Trainingland, which have grouped similar facilities together for analysis as shown below.



Select the “Public” organization unit group with Trainingland selected and **update** the table. DHIS2 will select all of the Public facilities within Trainingland.

End Exercise 1

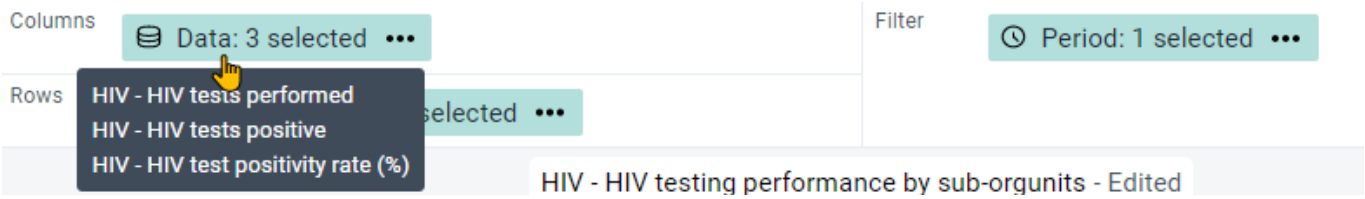
Exercise 2 - Table Layout, Options, Sorting and Saving

The layout will also persist on top of the table within the data visualizer app

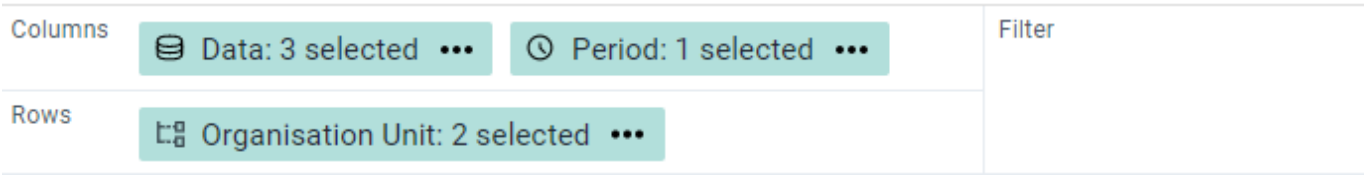
HIV - HIV testing performance by sub-orgunits - Edited

Testing performance by orgunit			
February 2024, January 2024, December 2023, November 2023, October 2023, September 2023			
Organisation unit / Data	HIV - HIV tests performed	HIV - HIV tests positive	HIV - HIV test positivity rate (%)
Afghan Dispensary	2 391	442	18.5
Alsatian Primary Health Centre	4 284	772	18
Beagle Hospital Gateway PHC	22 517	4 143	18.4
Belgian Shepherd Primary Health Centre	3 457	658	19
Bulldog Health Centre	11 536	2 137	18.5
Dalmatian Dispensary	3 043	581	19.1
Dingo Health Centre	10 137	1 919	18.9
Doberman Pinscher Health Centre	13 244	2 510	19

The organization units are appearing in rows and what was selected for the 'Data' dimension appears for columns. The report filter defines the filtering criteria or scope and in this case it's the period. You can hover over each of the icons in the layout in order to see what has been selected as options for each item



Alter the layout so it appears as below.



Click on **update**

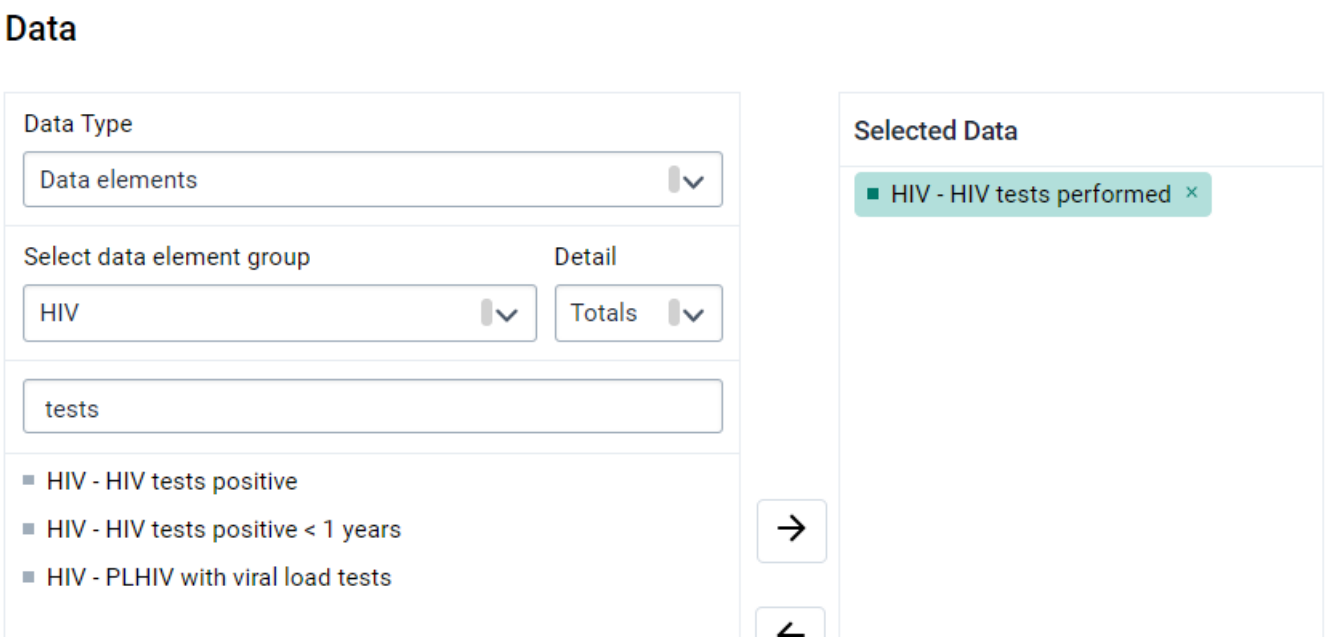
The updated table will look like this.

Testing performance by orgunit												
Data	HIV - HIV tests performed						HIV - HIV tests positive					
Organisation unit / Period	February 2024	January 2024	December 2023	November 2023	October 2023	September 2023	February 2024	January 2024	December 2023	November 2023	October 2023	Septe 20
Afghan Dispensary	410	373	390	407	402	409	70	77	81	76	76	
Alsatian Primary Health Centre	664	759	728	697	721	715	134	130	136	129	123	
Beagle Hospital Gateway PHC	3 801	3 792	3 654	3 868	3 698	3 704	695	705	716	682	680	
Belgian Shepherd Primary Health Centre	591	608	615	588	518	537	111	116	103	99	115	
Bulldog Health Centre	1 843	1 926	1 923	1 992	1 872	1 980	366	366	344	339	355	
Dalmatian Dispensary	522	513	482	519	493	514	83	97	113	99	85	
Dingo Health Centre	1 678	1 646	1 694	1 705	1 691	1 723	315	313	327	301	333	
Doberman Pinscher Health Centre	2 278	2 224	2 148	2 212	2 223	2 159	400	429	389	404	433	
Golden Retriever District hospital												
Goofy Dispensary	559	616	619	621	574	605	129	107	114	99	107	
Great Dane Health Centre	1 978	1 947	1 925	1 829	1 943	1 913	368	363	383	387	387	

The Data and Periods are both appearing as columns.

Table Options

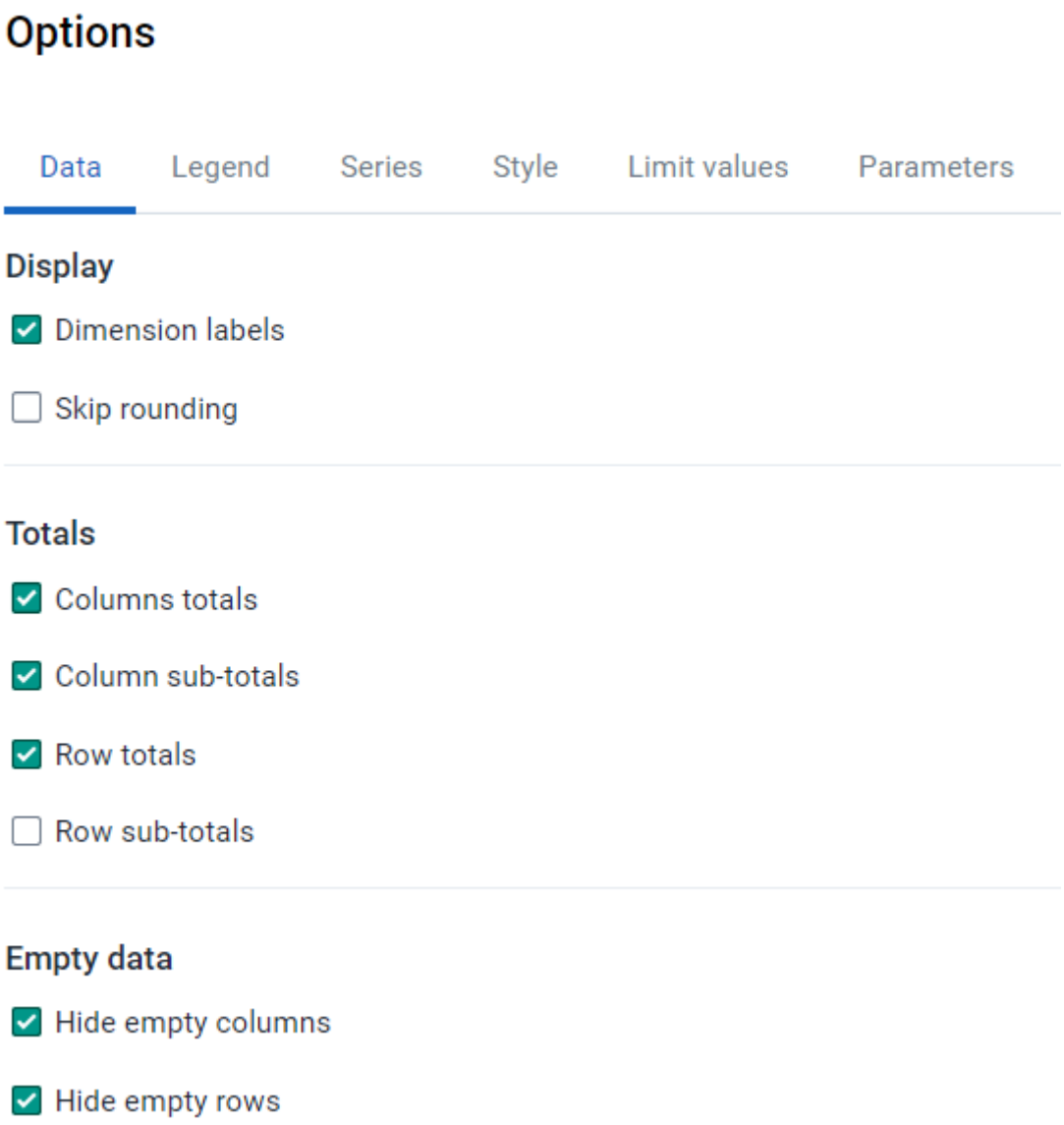
Select only “HIV - HIV tests performed” for the Data dimension.



Click on options.

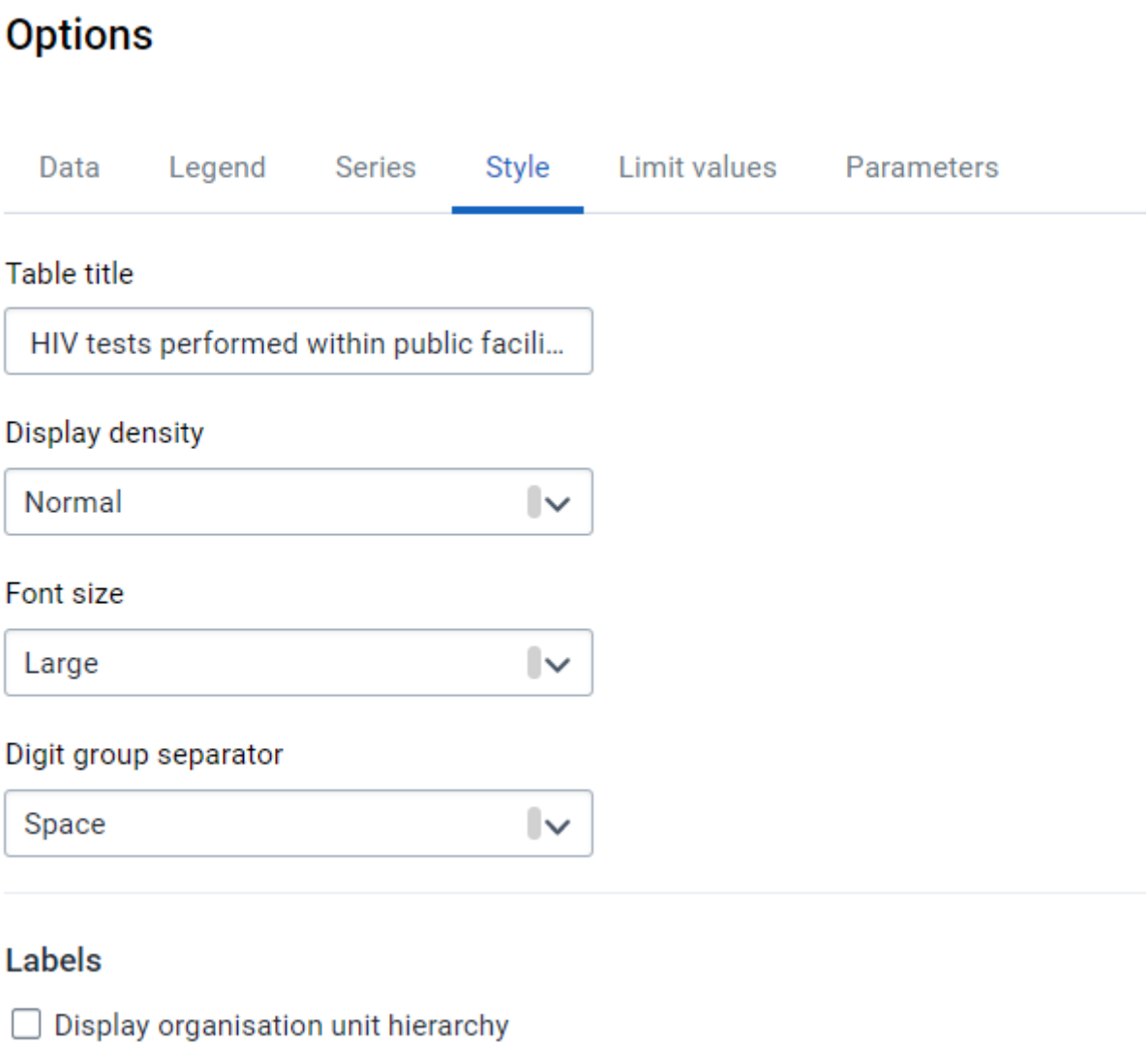
From the “Data” tab

- Add the column and row totals
- Hide empty rows
- Hide empty columns



From the “Style” tab

- Modify the table title/font size



Update the table and review how the changes have affected the table

HIV - HIV testing performance by sub-orgunits - Edited

HIV test performed within public health facilities							
Data	HIV - HIV tests performed						
Organisation unit / Period	February 2024	January 2024	December 2023	November 2023	October 2023	September 2023	Total
Afghan Dispensary	410	373	390	407	402	409	2 391
Alsatian Primary Health Centre	664	759	728	697	721	715	4 284
Beagle Hospital Gateway PHC	3 801	3 792	3 654	3 868	3 698	3 704	22 517
Belgian Shepherd Primary Health Centre	591	608	615	588	518	537	3 457
Bulldog Health Centre	1 843	1 926	1 923	1 992	1 872	1 980	11 536
Dalmatian Dispensary	522	513	482	519	493	514	3 043
Dingo Health Centre	1 678	1 646	1 694	1 705	1 691	1 723	10 137

Sorting

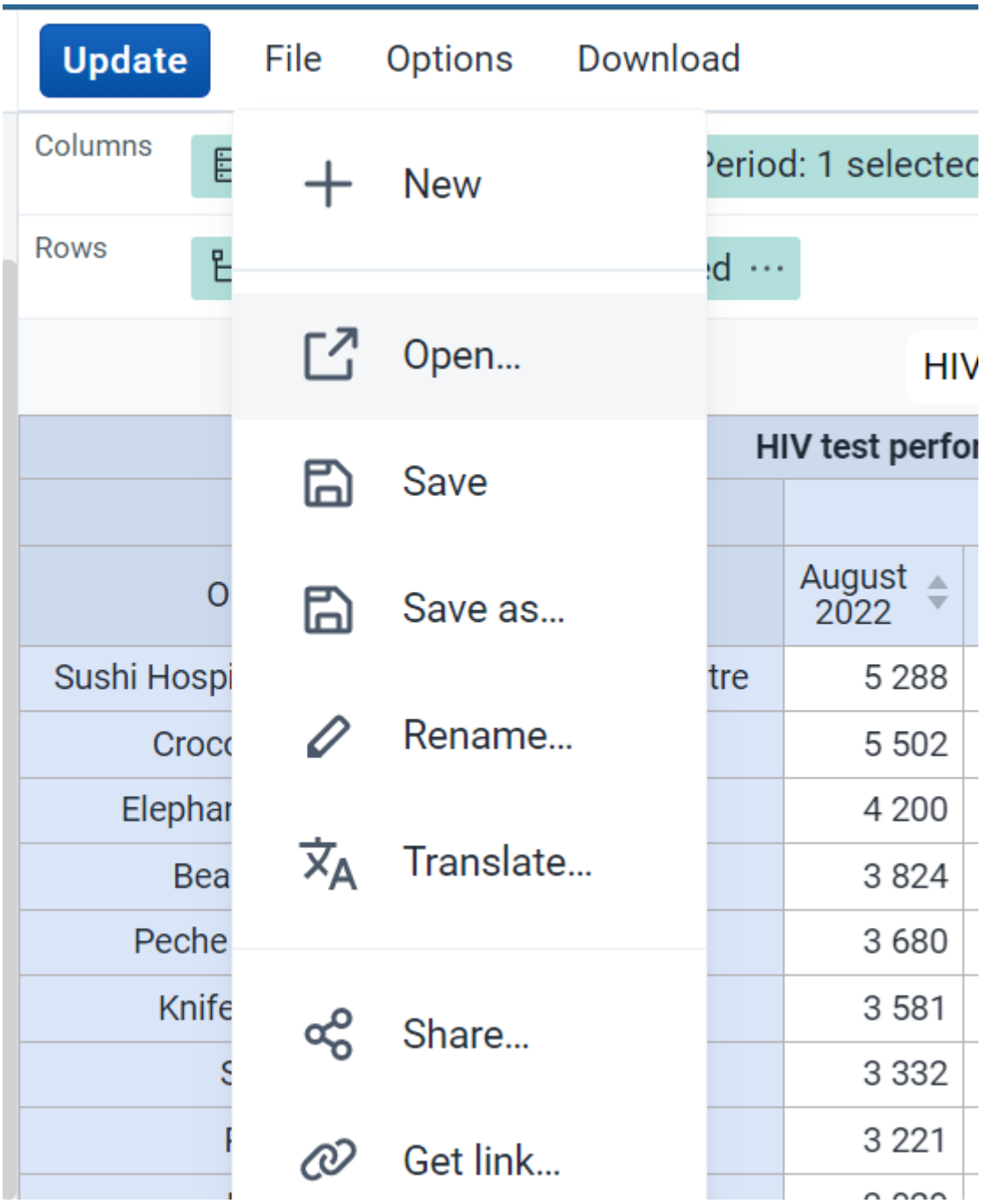
Click on the column header for one of the months to show how you can sort the table.

HIV test performed within public health facilities							
Data	HIV - HIV tests performed						
Organisation unit / Period	February 2024	January 2024	December 2023	November 2023	October 2023	September 2023	Total
Beagle Hospital Gateway PHC	3 801	3 792	3 654	3 868	3 698	3 704	22 517
Doberman Pinscher Health Centre	2 278	2 224	2 148	2 212	2 223	2 159	13 244
Great Dane Health Centre	1 978	1 947	1 925	1 829	1 943	1 913	11 535
Bulldog Health Centre	1 843	1 926	1 923	1 992	1 872	1 980	11 536
Dingo Health Centre	1 678	1 646	1 694	1 705	1 691	1 723	10 137
Mongrel Dispensary	708	705	673	674	678	625	4 063
Inja Primary Health Centre	672	694	679	709	692	698	4 144
Alsatian Primary Health Centre	664	759	728	697	721	715	4 284
Belgian Shepherd Primary Health Centre	591	608	615	588	518	537	3 457
Goofy Dispensary	559	616	619	621	574	605	3 594
Dalmatian Dispensary	522	513	482	519	493	514	3 043
Hot dog Primary Health Centre	510	467	511	450	500	485	2 923
Terrier Dispensary	449	429	420	454	456	471	2 679

Saving

Now, let's save the table!

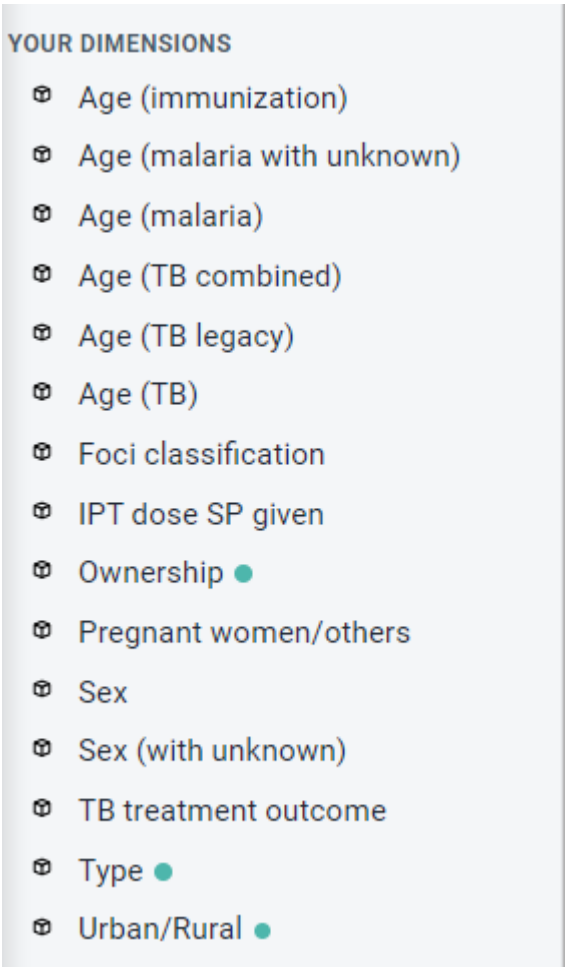
Please use the convention (Username - Program: What - Where - When; for example SND_HIV - HIV tests performed - Public Facilities - Last 6 months). **Note that username is only for the academy to keep the name unique, in production systems you should not need to use your username as a prefix as you can easily filter out the saved items that you have made.**



End Exercise 2

Exercise 3 - Disaggregations / Group Sets

Review the additional dimensions present in the pivot table for this instance. This is closely tied to how DHIS2 is configured and will be different for every implementation.



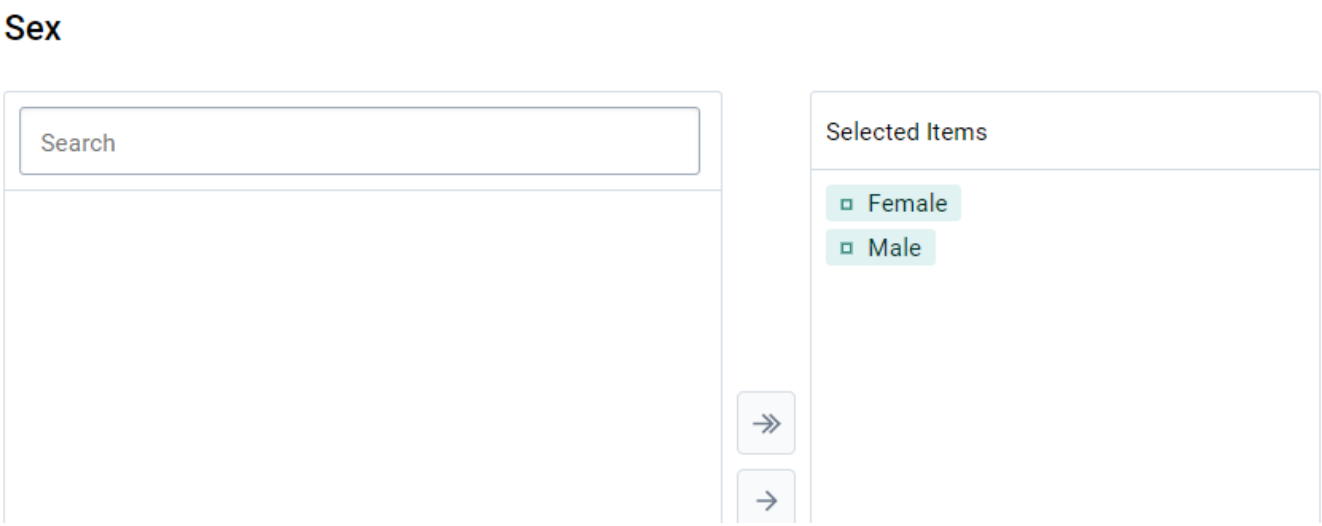
Note that there is a mix of categories (data disaggregation), organization unit group sets and data element group sets. Unfortunately there are no clear icons that differentiate them. There are however green dots besides the name of some of these dimensions. This means the selected data item will be compatible with those data dimensions at minimum. It does have some difficulty identifying categories correctly; however does work correctly with org unit groups. We will focus on using categories and organization unit group sets to analyze our data in this example.

Add in the sex dimension

Note that this requires being familiar with the disaggregation that is linked to the data element. You can show them how to do this relatively easily by having the HIV data set open in data entry.

Let's update the table with the following criteria.

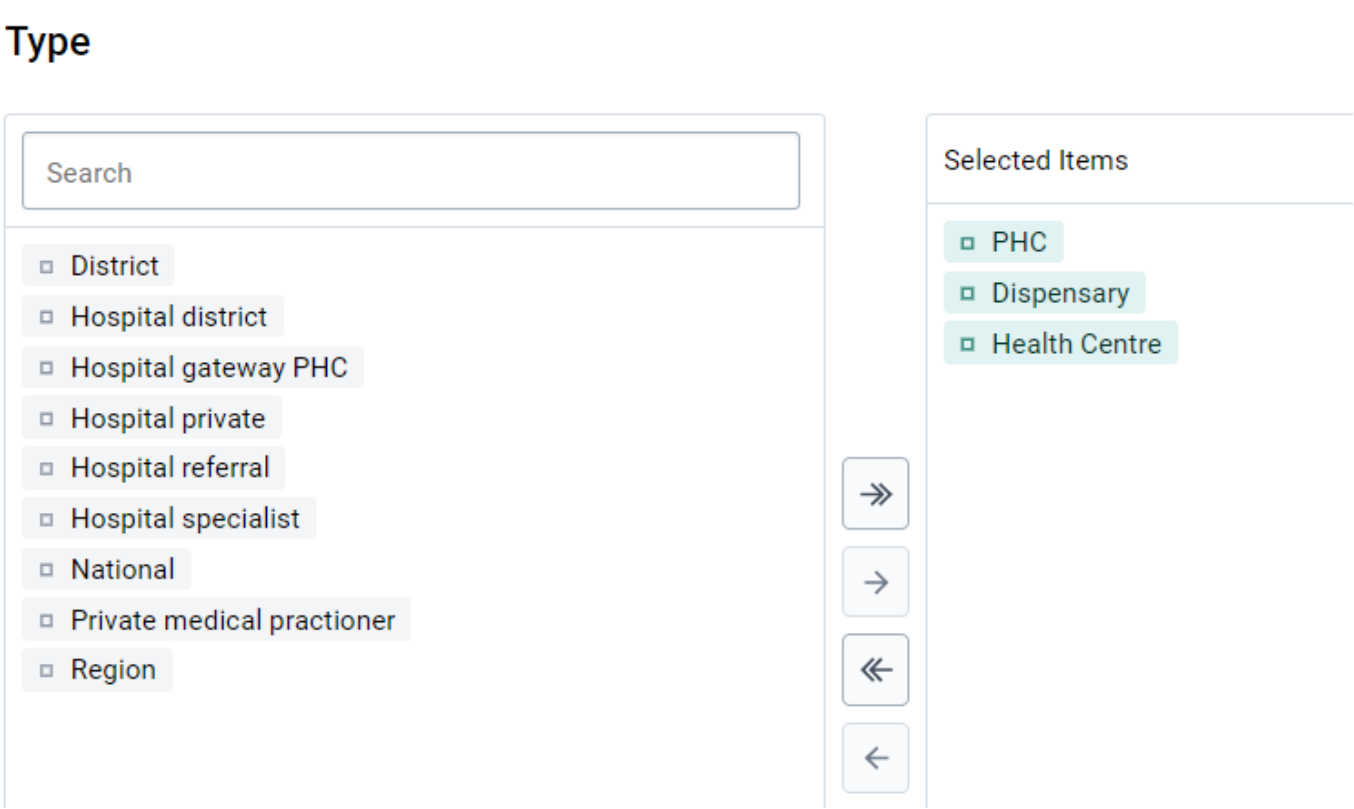
- Data: HIV tests performed
- Periods: Last 5 years
- Organization unit: Bird District, Level: facility
- Table options : Hide empty columns, Hide empty columns, show row totals, show column totals
- Add the sex disaggregation as an additional dimension.



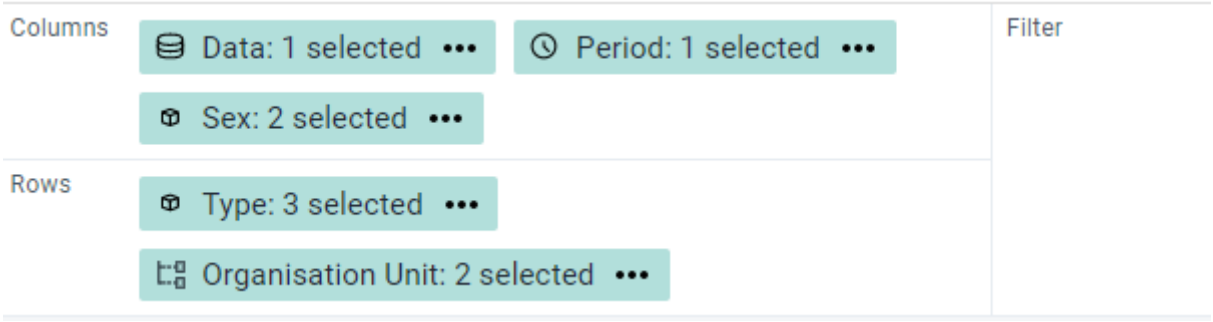
Click on update to see the following table

HIV test performed within public health facilities							
Data	HIV - HIV tests performed						
Period	2021		2022		2023		
Organisation unit / Sex	Female	Male	Female	Male	Female	Male	Total
Cardinal Hospital Gateway PHC	2 395	1 499	2 880	1 862	2 209	1 380	12 225
Crow Health Centre	4 042	2 554	4 859	3 038	3 707	2 386	20 586
Hawk Primary Health Centre	1 021	830	1 193	983	918	741	5 686
Ostrich Health Centre	3 702	2 357	4 392	2 791	3 374	2 176	18 792
Owl Dispensary	338	289	452	370	319	275	2 043
Peacock Dispensary	292	223	315	261	263	207	1 561
Pigeon Primary Health Centre	1 092	890	1 356	1 091	1 020	872	6 321
Robin Primary Health Centre	1 158	962	1 398	1 133	1 041	874	6 566
Woodpecker Health Centre	2 340	1 540	2 978	1 802	2 217	1 418	12 295
Total	16 380	11 144	19 823	13 331	15 068	10 329	86 075

Add in PHC, Dispensary and Health Centre from the Type dimension



Alter the table layout as follows.



Ensure the “Hide empty columns" option is selected.

Update the table

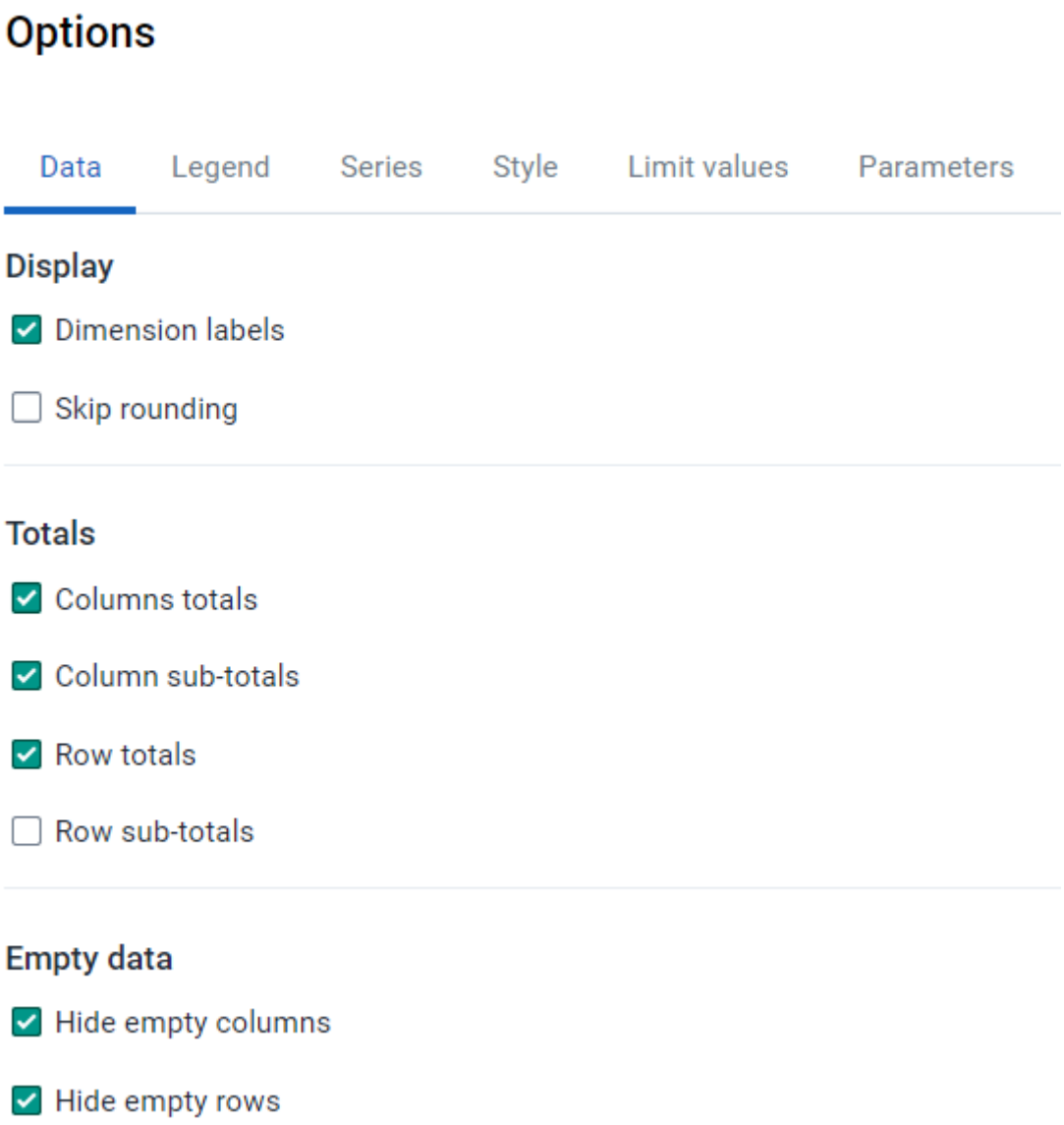
	Data	HIV - HIV tests performed					
	Period	2021		2022		2023	
Type	Organisation unit / Sex	Female	Male	Female	Male	Female	Male
PHC	Hawk Primary Health Centre	1 021	830	1 193	983	918	741
	Pigeon Primary Health Centre	1 092	890	1 356	1 091	1 020	872
	Robin Primary Health Centre	1 158	962	1 398	1 133	1 041	874
Dispensary	Owl Dispensary	338	289	452	370	319	275
	Peacock Dispensary	292	223	315	261	263	207
Health Centre	Crow Health Centre	4 042	2 554	4 859	3 038	3 707	2 386
	Ostrich Health Centre	3 702	2 357	4 392	2 791	3 374	2 176
	Woodpecker Health Centre	2 340	1 540	2 978	1 802	2 217	1 418

End Exercise 3

Exercise 4 - Additional Table Options

Row/Column Totals/Subtotals

Open the options and check show column subtotals in options within the “Data” tab



Click **Update** and you should see the table like below.

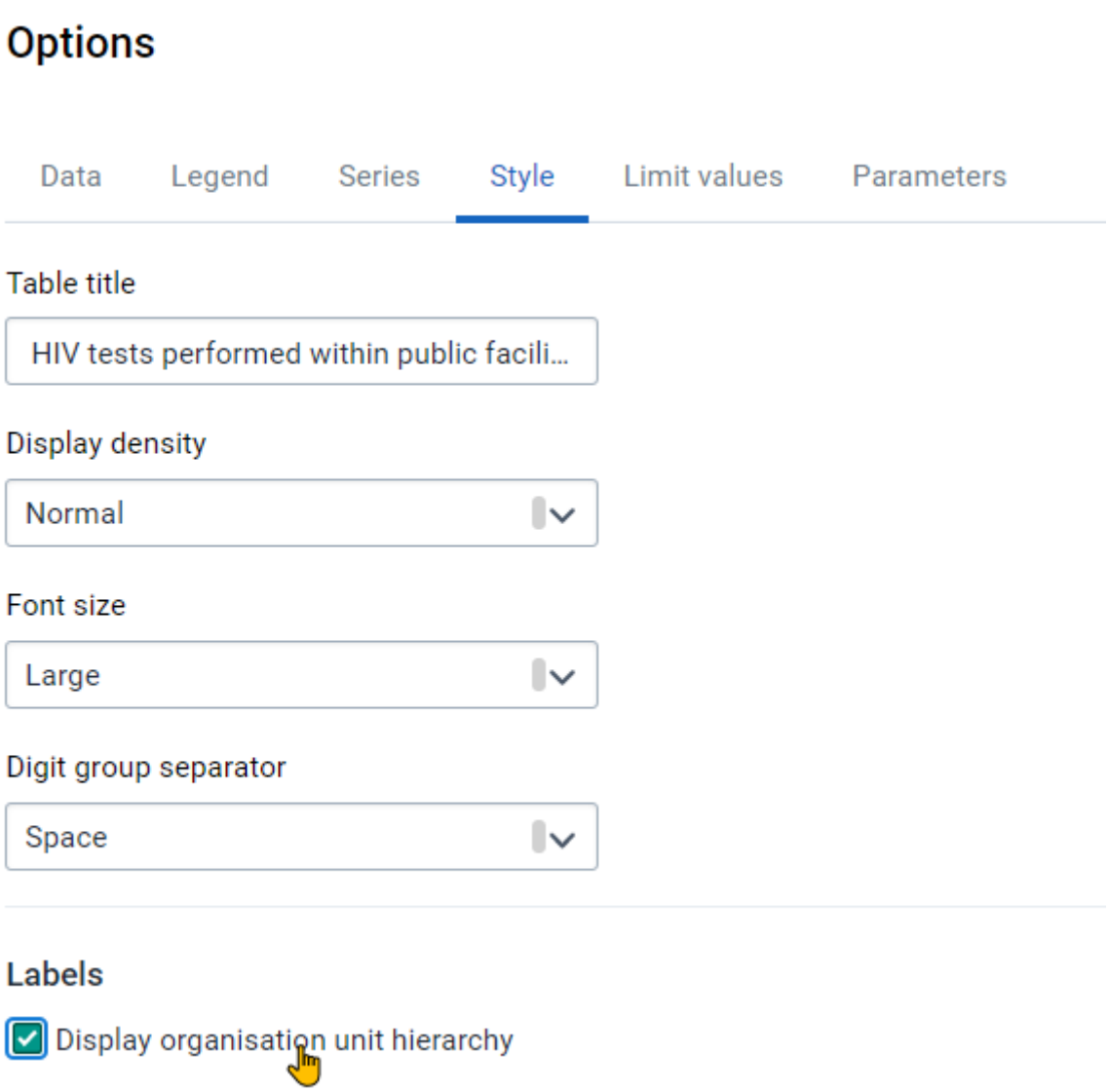
	Data	HIV - HIV tests performed						
	Period	2021		2022		2023		
Type	Organisation unit / Sex	Female	Male	Female	Male	Female	Male	Total
PHC	Hawk Primary Health Centre	1 021	830	1 193	983	918	741	5 686
	Pigeon Primary Health Centre	1 092	890	1 356	1 091	1 020	872	6 321
	Robin Primary Health Centre	1 158	962	1 398	1 133	1 041	874	6 566
	Subtotal	3 271	2 682	3 947	3 207	2 979	2 487	18 573
Dispensary	Owl Dispensary	338	289	452	370	319	275	2 043
	Peacock Dispensary	292	223	315	261	263	207	1 561
	Subtotal	630	512	767	631	582	482	3 604
Health Centre	Crow Health Centre	4 042	2 554	4 859	3 038	3 707	2 386	20 586
	Ostrich Health Centre	3 702	2 357	4 392	2 791	3 374	2 176	18 792
	Woodpecker Health Centre	2 340	1 540	2 978	1 802	2 217	1 418	12 295
	Subtotal	10 084	6 451	12 229	7 631	9 298	5 980	51 673
	Total	13 985	9 645	16 943	11 469	12 859	8 949	73 850

For each facility type you will have subtotals available. This shows you, by sex, the total number of HIV tests performed within a particular period for that facility type.

Show Hierarchy

Sometimes it is worthwhile to have the entire hierarchy displayed in the table rather than displaying just the name of the facility. This may become useful when you are demonstrating outputs at regional or national level where the audience may not be familiar with facility names.

Click on options, navigate to the “Style” tab and select show hierarchy



Click **update**. This will give you the following output.

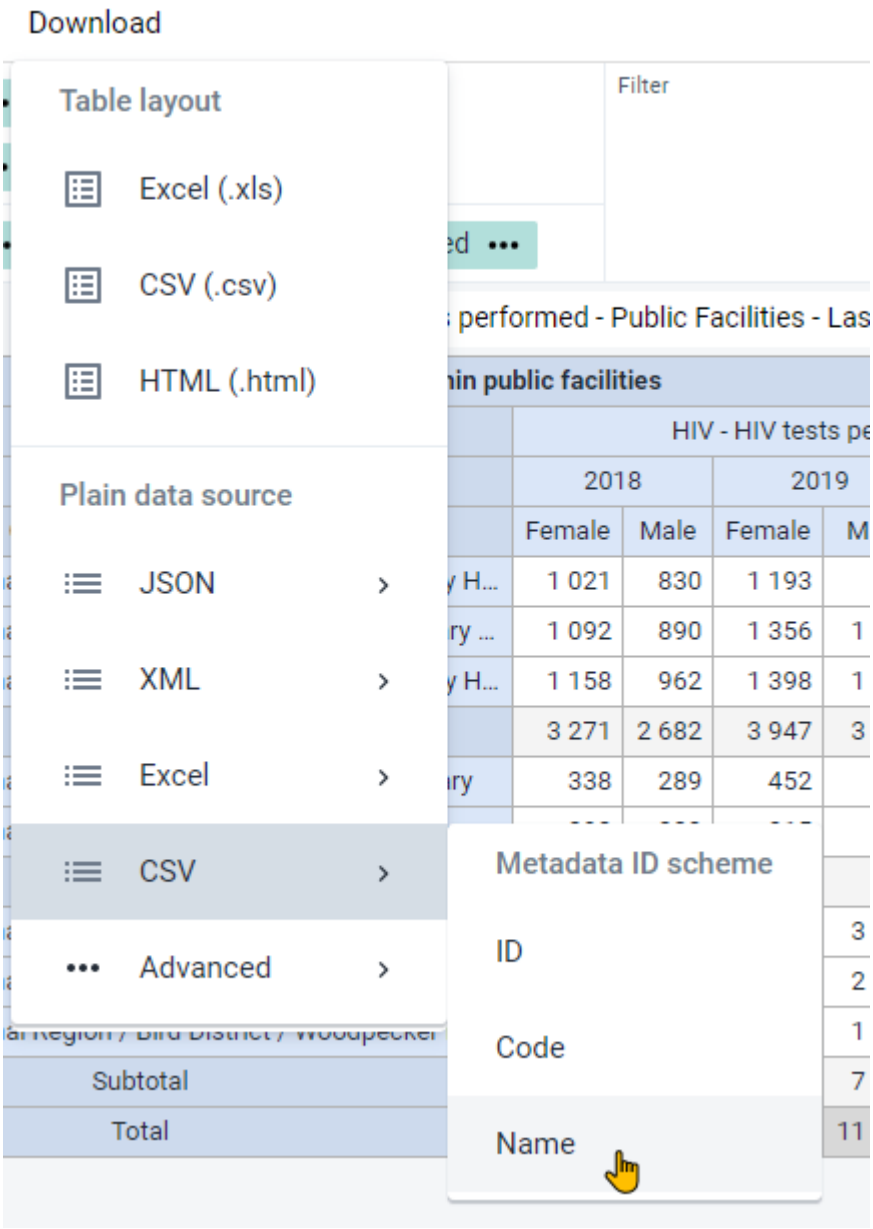
	Data	HIV - HIV tests performed						
	Period	2021		2022		2023		
Type	Organisation unit / Sex	Female	Male	Female	Male	Female	Male	Total
PHC	Trainingland / Animal Region / Bird District / Hawk Primary Health Centre	1 021	830	1 193	983	918	741	5 686
	Trainingland / Animal Region / Bird District / Pigeon Primary Health Centre	1 092	890	1 356	1 091	1 020	872	6 321
	Trainingland / Animal Region / Bird District / Robin Primary Health Centre	1 158	962	1 398	1 133	1 041	874	6 566
	Subtotal	3 271	2 682	3 947	3 207	2 979	2 487	18 573
Dispensary	Trainingland / Animal Region / Bird District / Owl Dispensary	338	289	452	370	319	275	2 043
	Trainingland / Animal Region / Bird District / Peacock Dispensary	292	223	315	261	263	207	1 561
	Subtotal	630	512	767	631	582	482	3 604
Health Centre	Trainingland / Animal Region / Bird District / Crow Health Centre	4 042	2 554	4 859	3 038	3 707	2 386	20 586
	Trainingland / Animal Region / Bird District / Ostrich Health Centre	3 702	2 357	4 392	2 791	3 374	2 176	18 792
	Trainingland / Animal Region / Bird District / Woodpecker Health Centre	2 340	1 540	2 978	1 802	2 217	1 418	12 295
	Subtotal	10 084	6 451	12 229	7 631	9 298	5 980	51 673
	Total	13 985	9 645	16 943	11 469	12 859	8 949	73 850

The entire organisation unit hierarchy is now visible up to facility level.

End Exercise 4

Exercise 5 - Download Data

Select Download and choose a format that you want to download the data in.



Plain data source is useful as it can be used to further analyze the data using statistical software such as SPSS, STATA or R. You can also open it in Excel and use pivot tables etc. to further review the data

	A	B	C	D	E	F
1	Data	Period	Sex	Type	Organisation unit	Value
2	HIV - HIV tests performed	2021	Female	Health Centre	Ostrich Health Centre	4392
3	HIV - HIV tests performed	2020	Female	Health Centre	Crow Health Centre	4042
4	HIV - HIV tests performed	2022	Female	PHC	Hawk Primary Health Centre	918
5	HIV - HIV tests performed	2020	Male	Dispensary	Owl Dispensary	289
6	HIV - HIV tests performed	2022	Male	PHC	Robin Primary Health Centre	874
7	HIV - HIV tests performed	2022	Female	PHC	Robin Primary Health Centre	1041
8	HIV - HIV tests performed	2021	Male	Health Centre	Ostrich Health Centre	2791
9	HIV - HIV tests performed	2022	Male	PHC	Hawk Primary Health Centre	741
10	HIV - HIV tests performed	2021	Female	PHC	Pigeon Primary Health Centre	1356
11	HIV - HIV tests performed	2022	Male	PHC	Pigeon Primary Health Centre	872
12	HIV - HIV tests performed	2022	Female	Dispensary	Owl Dispensary	319
13	HIV - HIV tests performed	2021	Male	Health Centre	Woodpecker Health Centre	1802

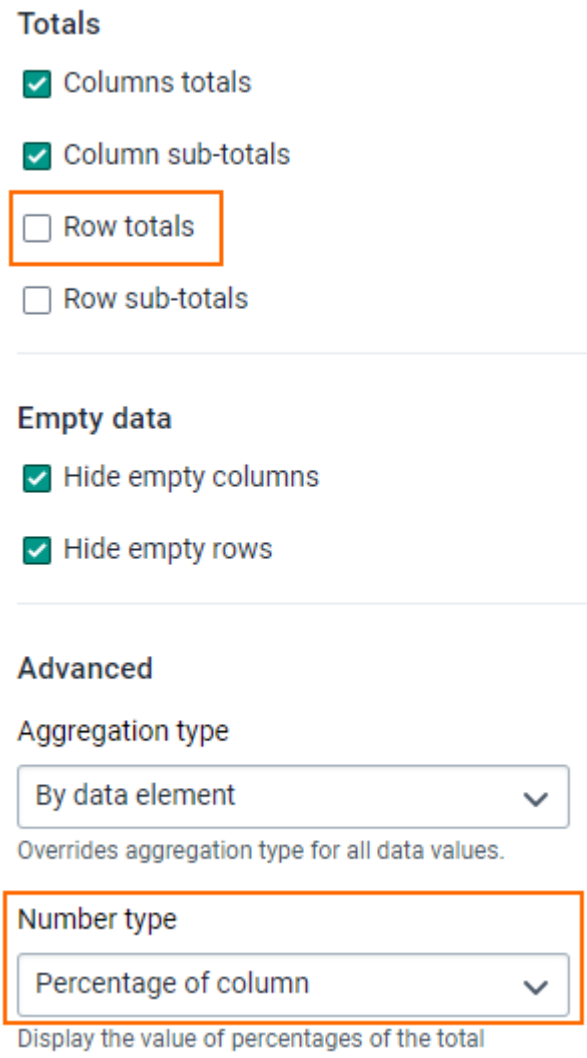
End Exercise 5

Exercise 6 - Demonstrate Number Type, Measure Criteria, Sharing

Number Type

Using your previous table, modify the options in the “Data” tab as follows.

- Number type: Percentage of column
- Remove the “row totals”



Click on 'Update'

HIV test performed within public health facilities							
	Data	HIV - HIV tests performed					
	Period	2021		2022		2023	
Type	Organisation unit / Sex	Female	Male	Female	Male	Female	Male
PHC	Trainingland / Animal Region / Bird District / Hawk Primary Health Centre	7.3%	8.6%	7%	8.6%	7.1%	8.3%
	Trainingland / Animal Region / Bird District / Pigeon Primary Health Centre	7.8%	9.2%	8%	9.5%	7.9%	9.7%
	Trainingland / Animal Region / Bird District / Robin Primary Health Centre	8.3%	10%	8.3%	9.9%	8.1%	9.8%
	Subtotal	23.4%	27.8%	23.3%	28%	23.2%	27.8%
Dispensary	Trainingland / Animal Region / Bird District / Owl Dispensary	2.4%	3%	2.7%	3.2%	2.5%	3.1%
	Trainingland / Animal Region / Bird District / Peacock Dispensary	2.1%	2.3%	1.9%	2.3%	2%	2.3%
	Subtotal	4.5%	5.3%	4.5%	5.5%	4.5%	5.4%
Health Centre	Trainingland / Animal Region / Bird District / Crow Health Centre	28.9%	26.5%	28.7%	26.5%	28.8%	26.7%
	Trainingland / Animal Region / Bird District / Ostrich Health Centre	26.5%	24.4%	25.9%	24.3%	26.2%	24.3%
	Trainingland / Animal Region / Bird District / Woodpecker Health Centre	16.7%	16%	17.6%	15.7%	17.2%	15.8%
	Subtotal	72.1%	66.9%	72.2%	66.5%	72.3%	66.8%
	Total	100%	100%	100%	100%	100%	100%

This will display values as percentages of the column total (instead of summing the aggregated value). Also, as you are showing the percentages of the column, the row totals would not make sense in this scenario.

We can see that HIV tests performed have been arranged per year with a percentage contribution of each facility type. We can see that health centers have performed the largest % of tests when reviewing this table,

which can provide us some information on where the majority of testing burden lies.

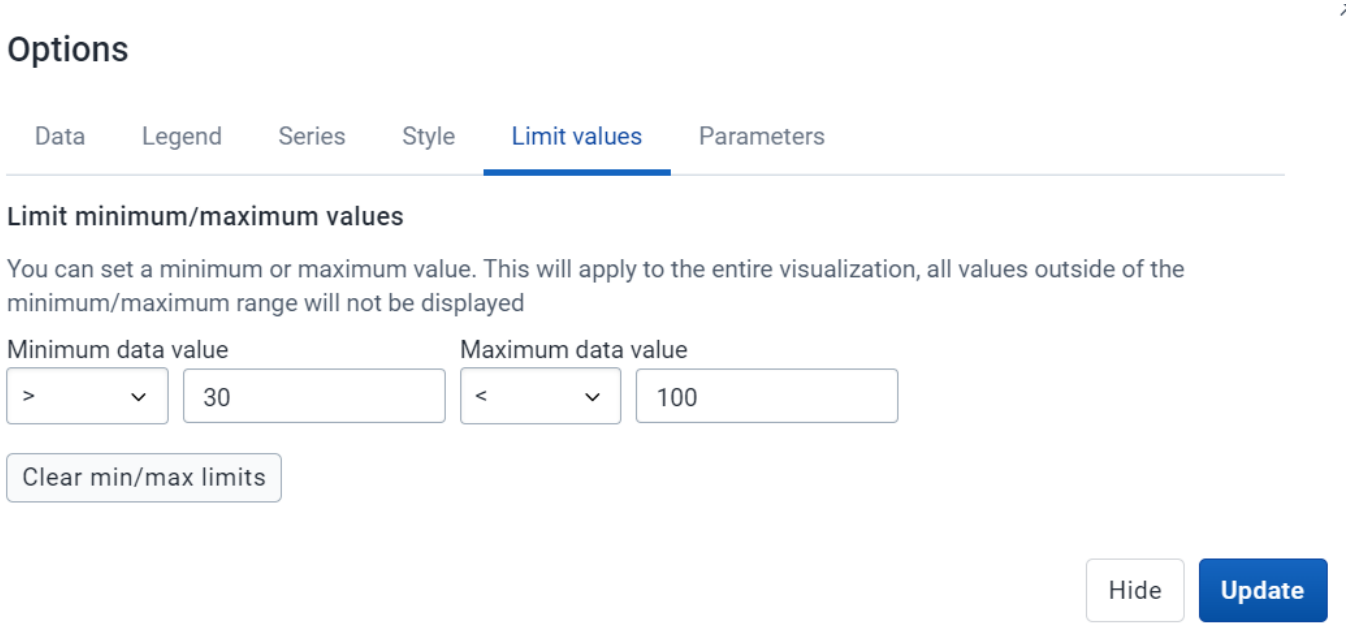
Filtering the Table

It is sometimes useful to filter data visualized in a pivot table based on a value range defined by a minimum and/or maximum value. This could be achieved by filtering the table using the "Limit Values" option. This will filter the data requested based on the criteria defined.

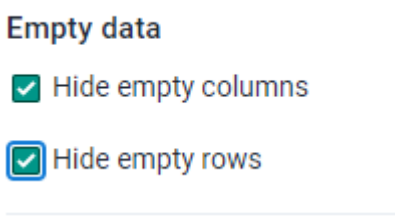
- Open up the previously saved favorite item 'yourusername_HIV - HIV tests performed - Public Facilities - Last 6 months (you may see different periods of data depending on the current period)'.

HIV tests performed within public facilities						
HIV - HIV tests performed						
Organisation unit / Period	January 2024	December 2023	November 2023	October 2023	September 2023	Total
Cardinal Hospital Gateway PHC	282	298	265	266	285	1 396
Crow Health Centre	478	466	502	505	477	2 428
Hawk Primary Health Centre	120	130	138	135	125	648
Ostrich Health Centre	432	441	466	404	493	2 236
Owl Dispensary	45	56	38	53	46	238
Peacock Dispensary	35	39	33	35	37	179
Pigeon Primary Health Centre	145	152	152	160	139	748
Robin Primary Health Centre	152	149	140	164	151	756
Woodpecker Health Centre	305	294	299	309	289	1 496
Total	1 994	2 025	2 033	2 031	2 042	10 125

- Click on the options button, followed by the "Limit values" tab. Let's define criteria to visualize only values between 30 and 100.



- Click 'update' and you will see the table below which only shows values >= 30 and <=100.
- Change the options to "Hide empty rows" within the "Data" tab to clean up the table



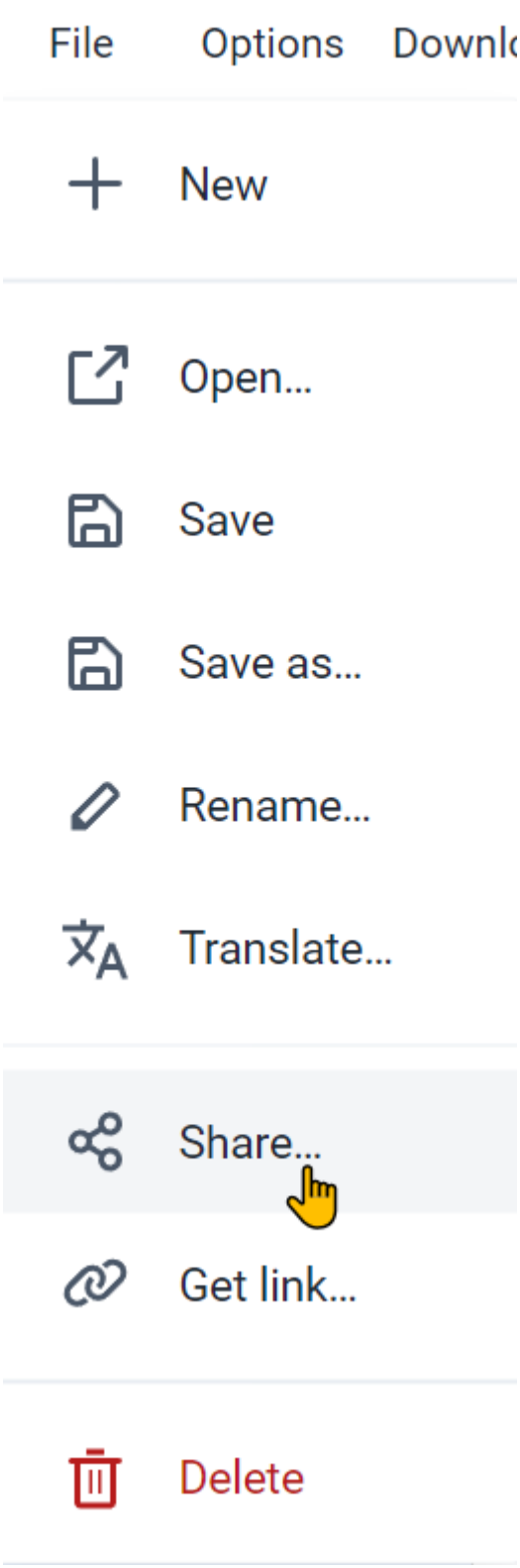
The table should show you monthly values from only between 30 and 100

HIV tests performed within public facilities						
HIV - HIV tests performed						
Organisation unit / Period	January 2024	December 2023	November 2023	October 2023	September 2023	Total
Owl Dispensary	45	56	38	53	46	238
Peacock Dispensary	35	39	33	35	37	179
Total	80	95	71	88	83	417

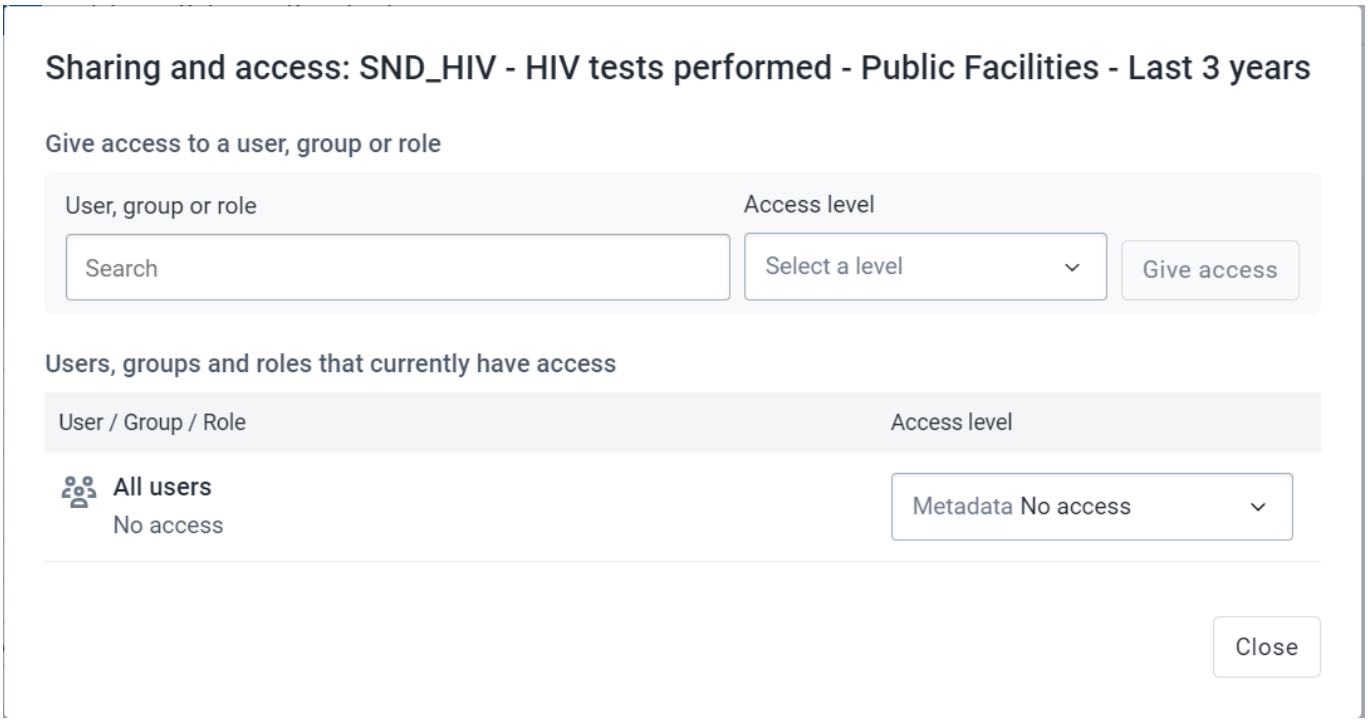
Share Saved Item

Saved items designed in Pivot Tables can be shared with users/user groups.

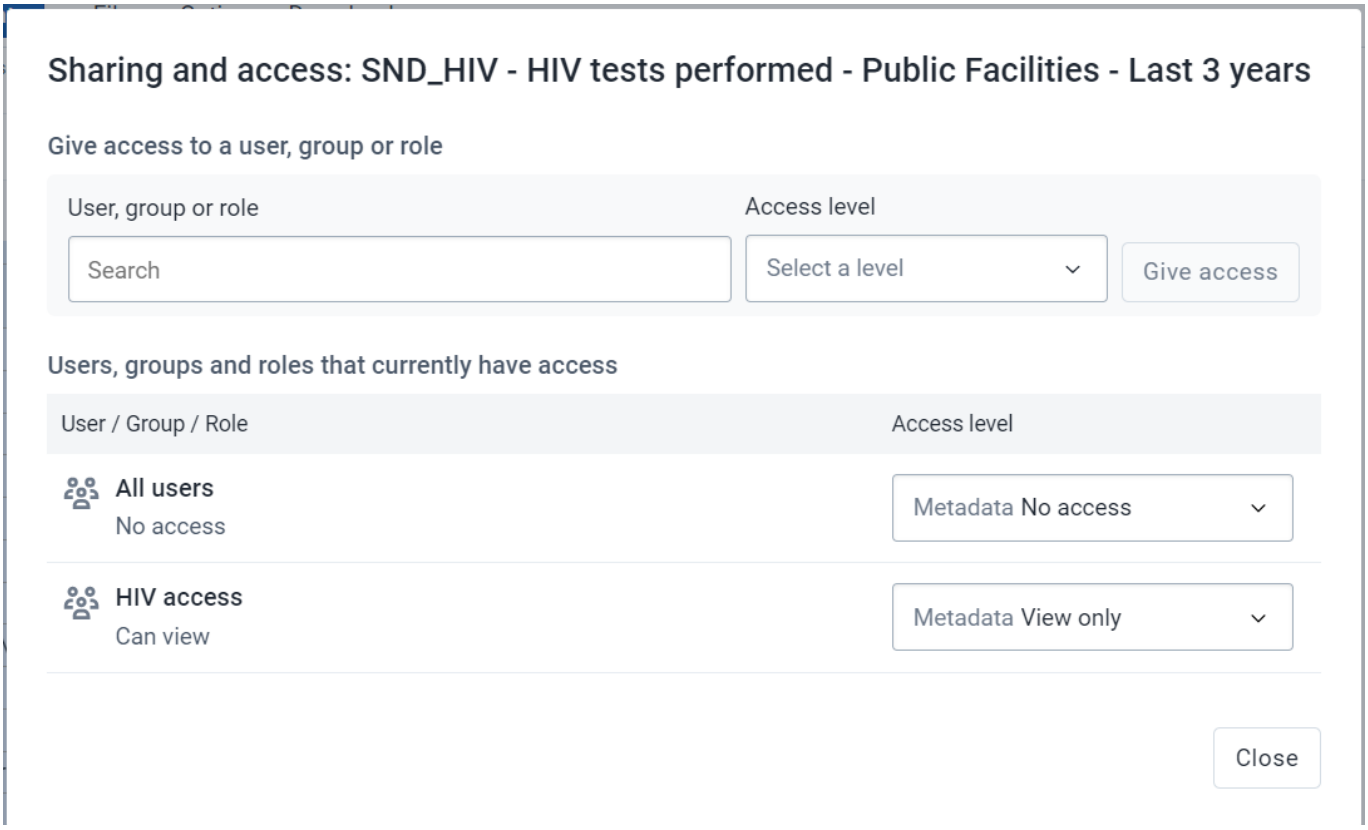
Open up the previously saved favorite item ‘yourusername_HIV - HIV tests performed - Public Facilities - Last 6 months’ and Select File - Share



This will bring up the sharing dialog and allow you to share your pivot table



Share the table with the user group “HIV access.” Provide them with “Can view only” access. This means that they can see the table but can not edit or modify it.



End Exercise 6

Exercise 7 - Working with Legends, Drilling Down

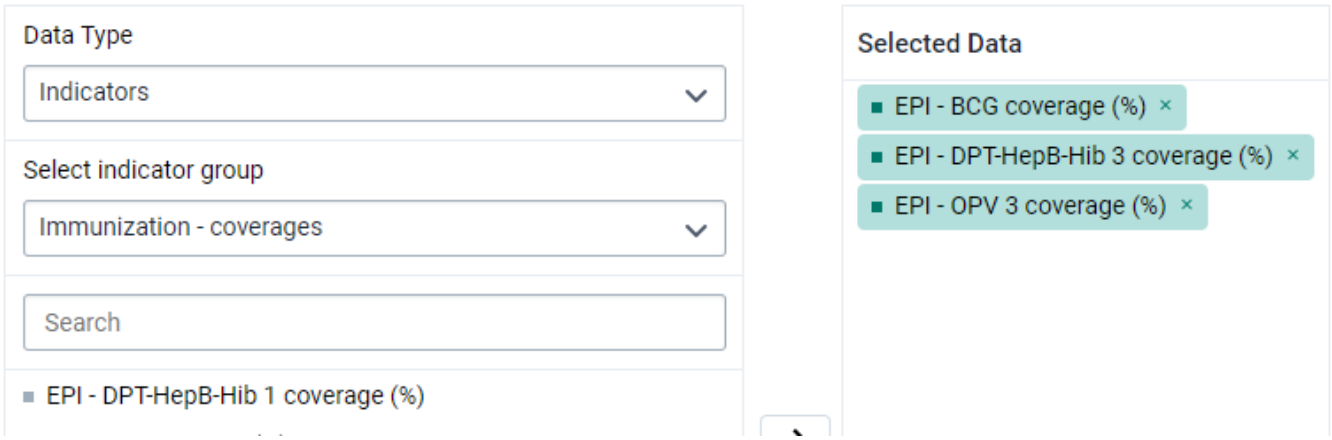
Legends

Legends provide a colorful visualization to tables, allowing for a quick and meaningful understanding of the table.

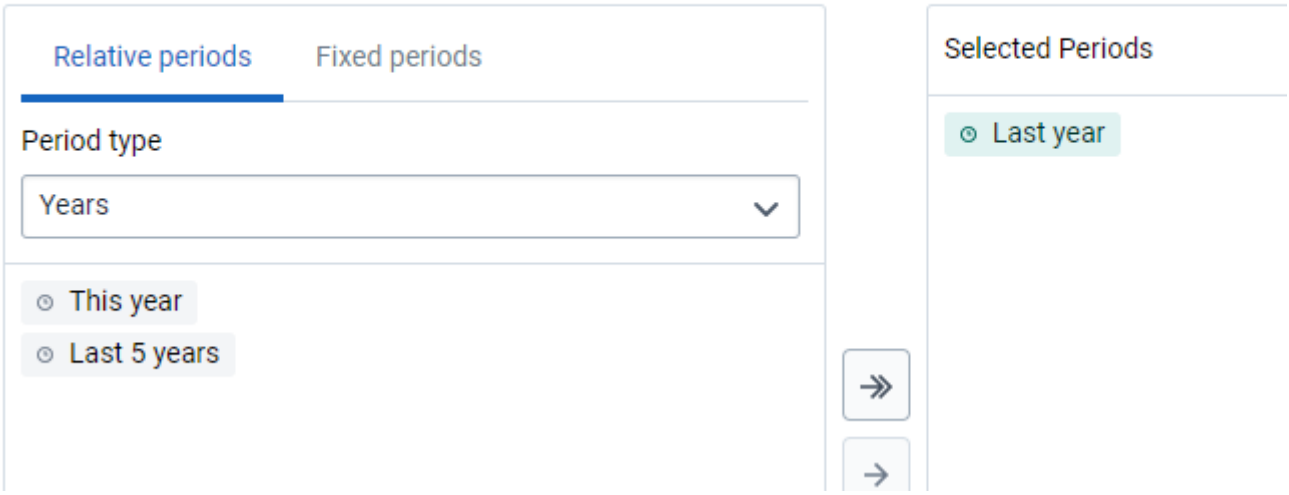
Create a new pivot table with following criteria.

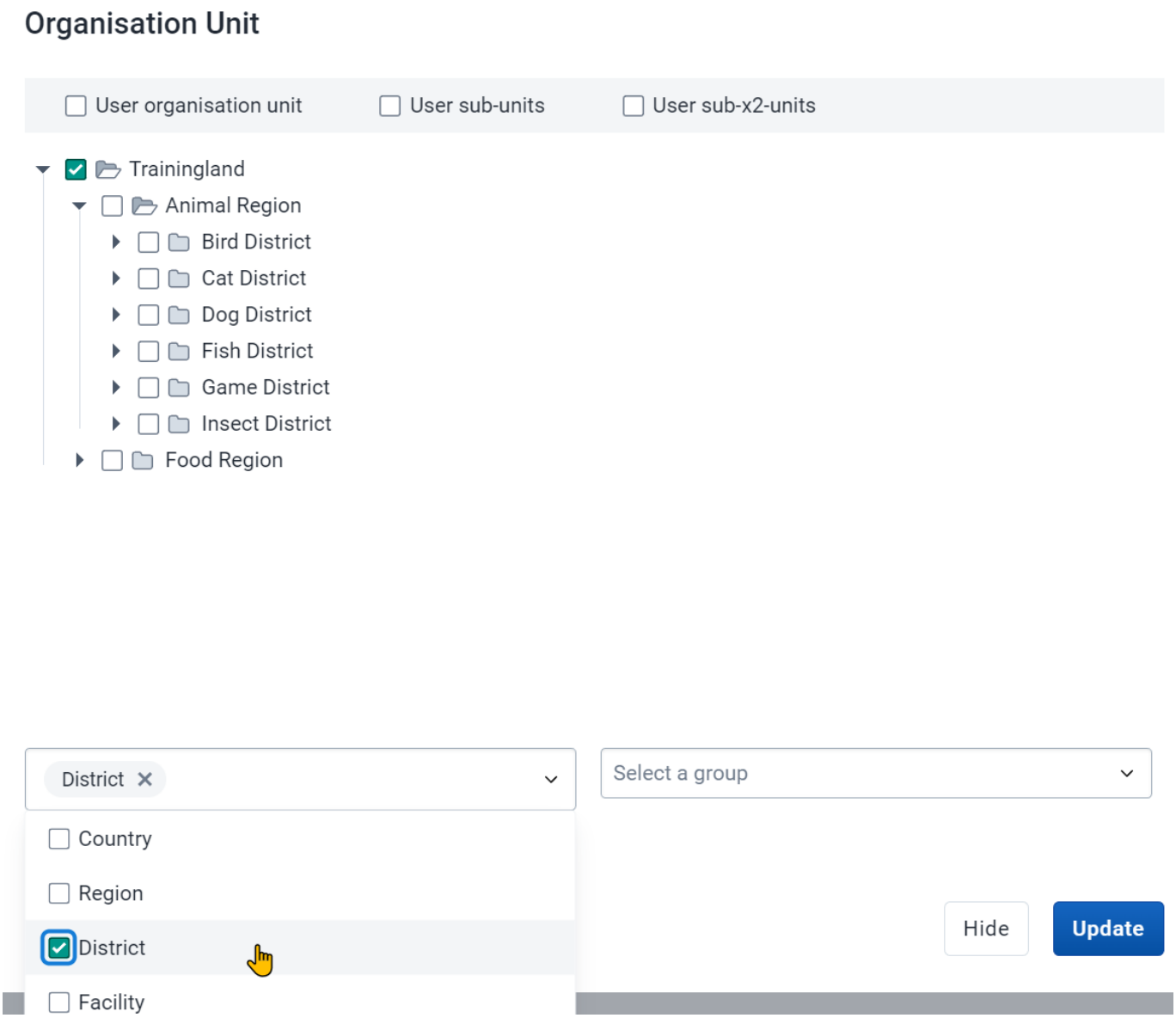
- Data: Coverage indicators (BCG, DPT-HepB-Hib3, OPV3)
- Period: last year
- Org Unit: Trainingland by district

Data



Period





Layout should be as follows

Update the table to see the following output:

2023			
	EPI - BCG coverage (%)	EPI - DPT-HepB-Hib 3 coverage (%)	EPI - OPV 3 coverage (%)
Bird District	64.4	46.3	57.9
Cat District	82.1	71.3	73
Dessert District	63.6	50.6	56.3
Dinner District	84	76.8	73.6
Dog District	88.9	80.3	78.8
Fish District	77.9	68.7	72
Fruit District	88.2	80.4	78.7
Game District	81.6	72.1	72.6
Insect District	77.8	63.1	68.6
Staple District	75.9	64.1	68.2
Sweet District	59.9	47.4	53
Vegetable District	94.1	88.6	87

The table output doesn't look very different from anything we have already reviewed.

Results could be easily understood if we could add a visual cue to the output table. We can use legends to achieve this.

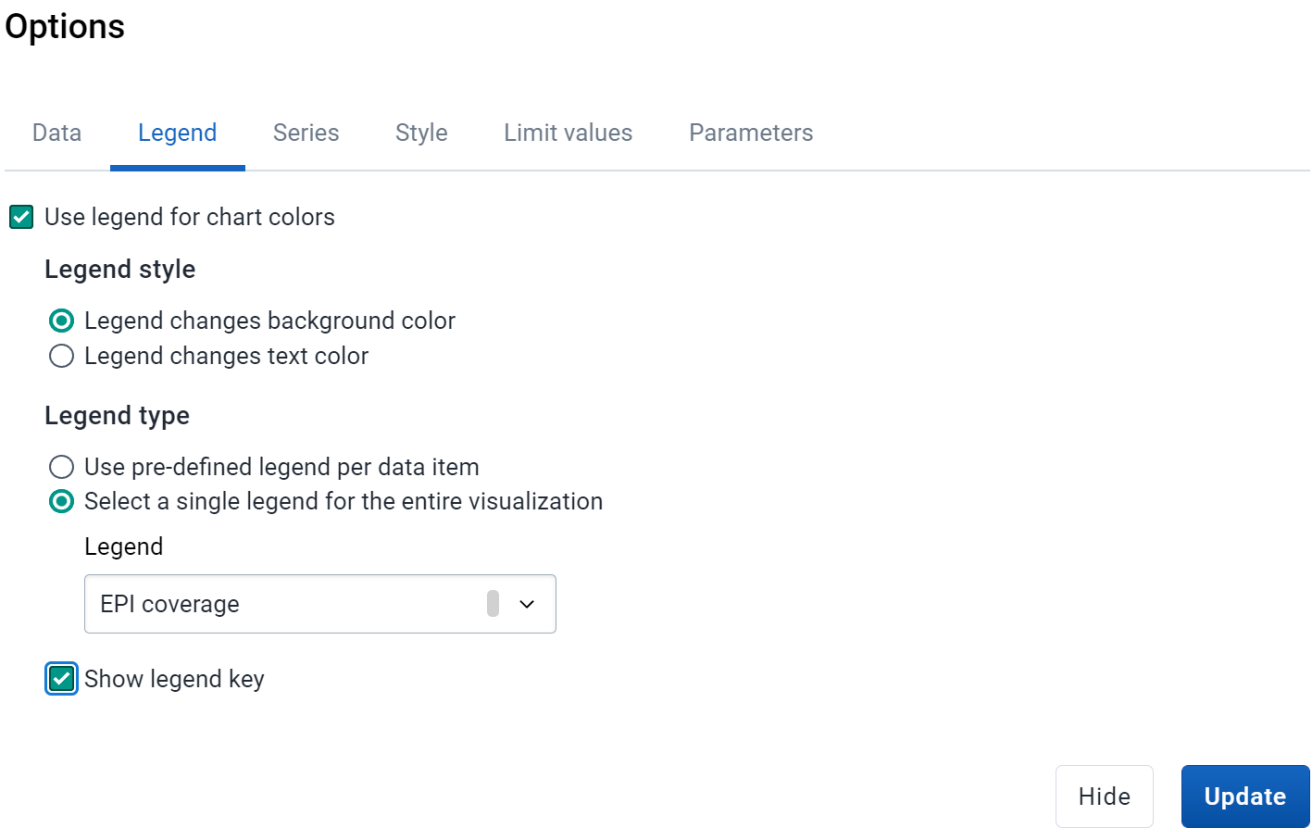
- Add in the legend set EPI Coverage (70-80-90%); use the style background color

This is what the current EPI Coverage legend represents.

- Red is the lowest performance at 0 - 70
- Yellow is getting better, 70 - 80
- Light green is good performance, 80 - 90
- Dark green is the target coverage, 90 – 100

Invalid	100	1000	#ED00FF
Low	0	70	#F03B20
Mid	70	80	#FEB24C
Highest	90	100	#4DAC26
High	80	90	#B8E186

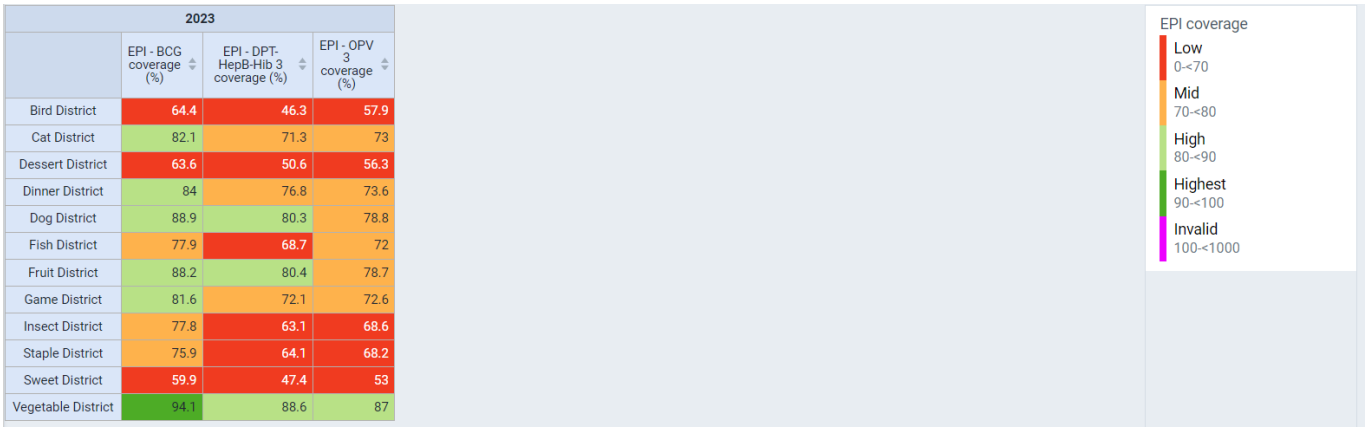
To apply the legend, open the table options and navigate to the "Legend" tab.



Then

1. Select Use legend for chart colors
2. Choose from the legend style, in this case we will choose “Legend changes background color”
3. Choose from the Legend type, in this case we will “Select a single legend for the entire visualization.” This allows you to select a legend that has already been configured
    1. You can use the “Use predefined legend per data item” if your data element or option set has a legend associated with it. This can be done within maintenance when you manage your indicator or data element.
4. Select the “EPI coverage” legend
5. Select “show legend key”
6. Select **Update**

The updated table:



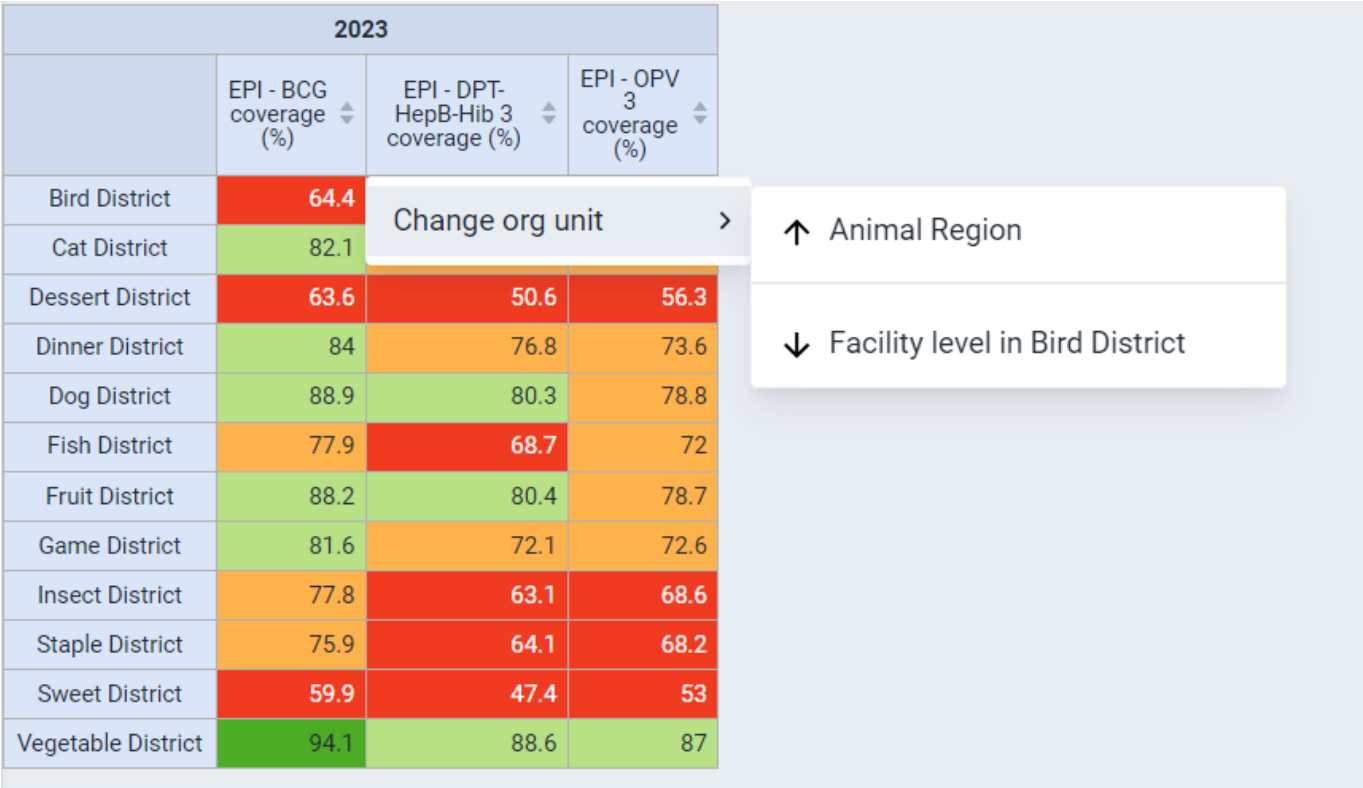
2023	EPI - BCG coverage (%)	EPI - DPT-HepB-Hib 3 coverage (%)	EPI - OPV 3 coverage (%)
Bird District	64.4	46.3	57.9
Cat District	82.1	71.3	73
Dessert District	63.6	50.6	56.3
Dinner District	84	76.8	73.6
Dog District	88.9	80.3	78.8
Fish District	77.9	68.7	72
Fruit District	88.2	80.4	78.7
Game District	81.6	72.1	72.6
Insect District	77.8	63.1	68.6
Staple District	75.9	64.1	68.2
Sweet District	59.9	47.4	53
Vegetable District	94.1	88.6	87

You will notice the legend key on the right side of the table.

You can sort the table before proceeding. After you sort it, we can see districts with low coverage are both sorted on the bottom of the list and have the dark red color associated with it. As the districts increase in coverage, their spot on the list increases and the color associated with the data value is also changing in line with the definitions of our legend. These types of tables are easier to interpret as there are multiple visual cues (the order, the color, the data value itself) that allows us to understand what the table itself is representing.

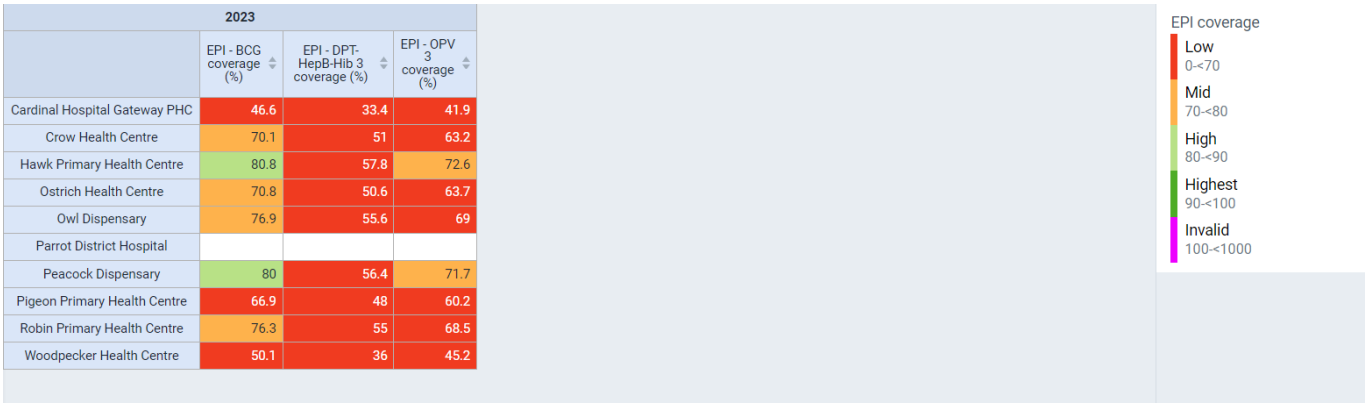
Drill Down

- Left click on a cell of Bird District to bring up the drill down/up function. Refer to the screenshot below.



Explain that this allows you to dive into more detail directly via the pivot table. Note that you can still use the org unit/period selections on the left-hand menu to drill up and down if that is your preference. This method however allows a bit more interactivity within the table itself.

You will see following table when drilled-down



How can you interpret the above table?

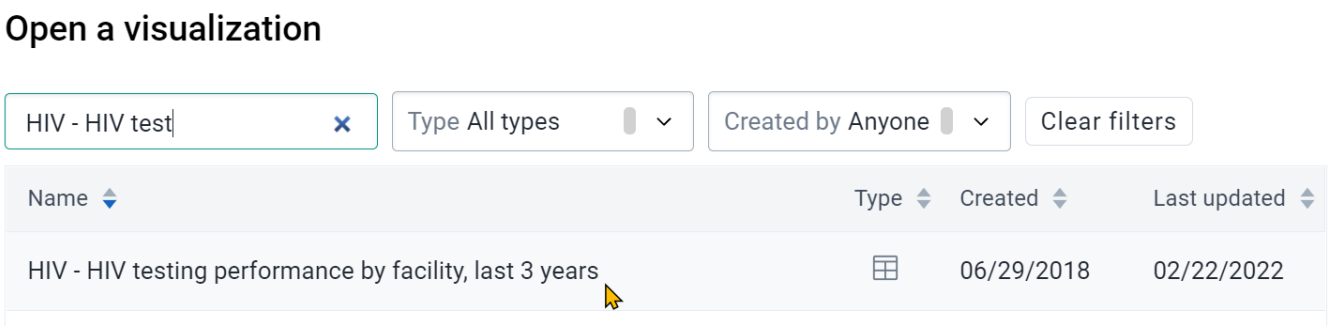
We can observe that all of the facilities are having issues with their immunization coverage indicators, contributing to the low district totals observed in the previous table. Parrot district hospital does not have any data values and is therefore not contributing to the district total.

End Exercise 7

Exercise 8 - Freeze rows/columns

When you have large amounts of data, it may be useful to lock the first row and column similar to excel.

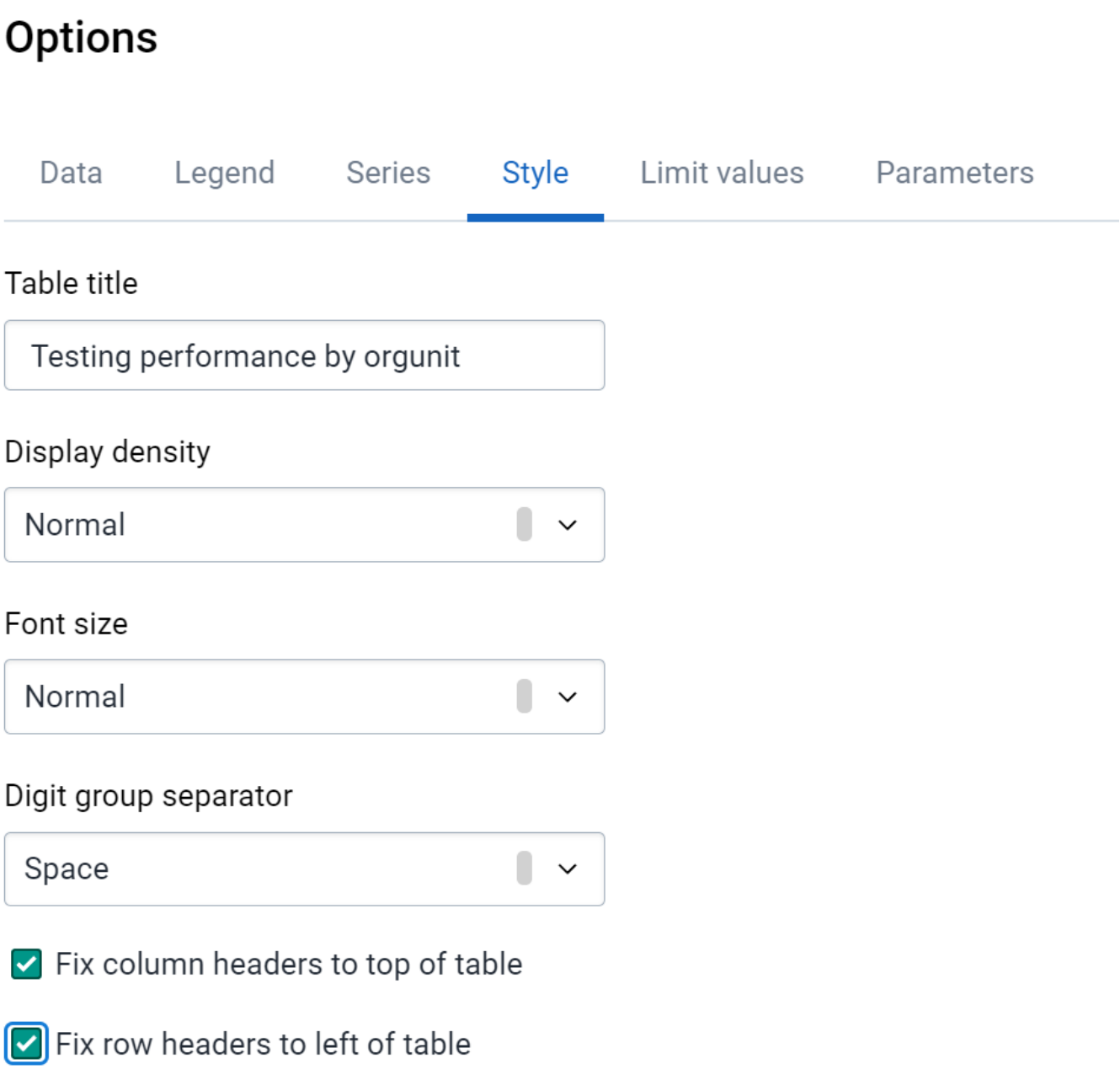
Open the saved table "HIV - HIV testing performance by facility, last 3 years"



Scroll up and down on this table, you will see the columns and rows disappear.

Open the table options, navigate to style and select

- fix column headers to top of table
- fix row headers to left of table



Proceed to scroll left/right and up/down you will note these headers are now locked

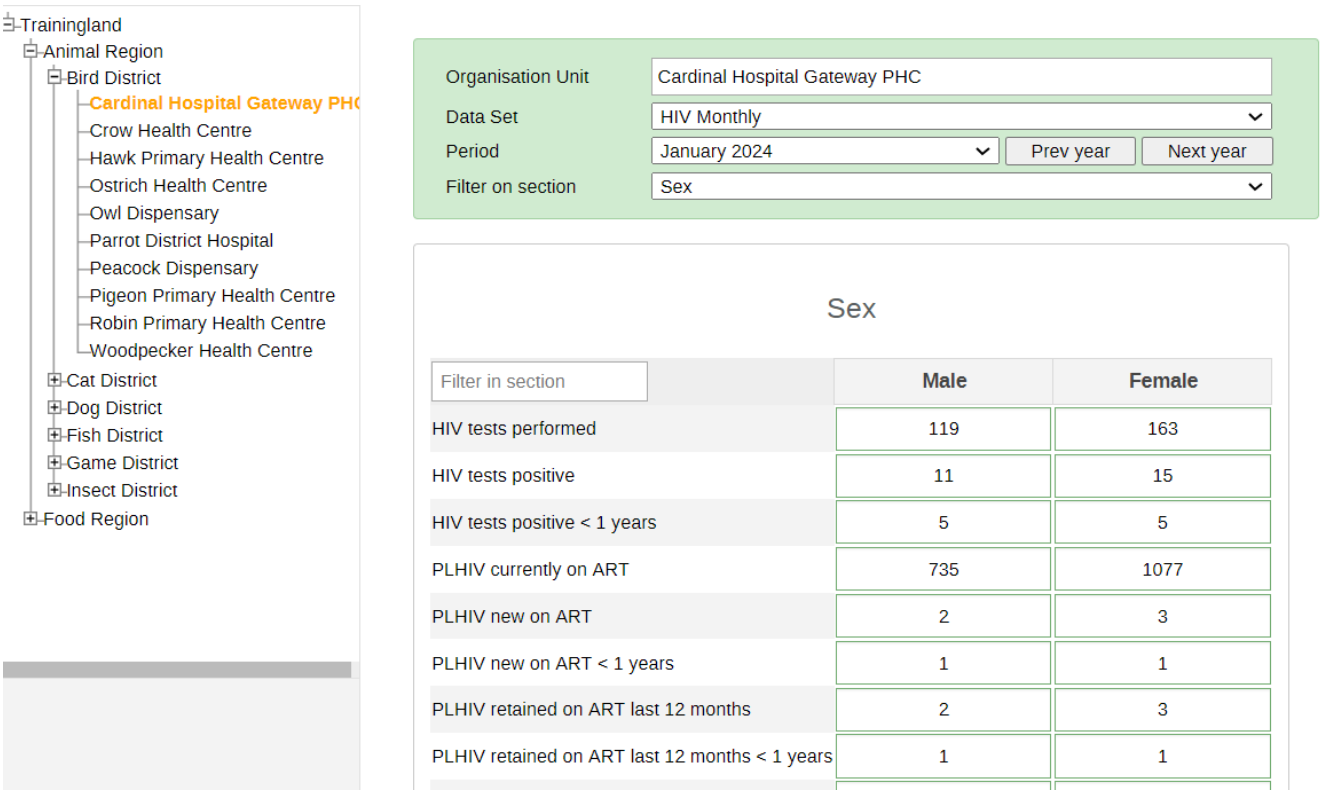
End Exercise 8

Part 9 - Last Value Aggregation Type

Last Value Aggregation Type

The last value aggregation type is a special value type which takes the last value that has been entered at a specific level and displays it within the analysis apps. This is useful if, for example, you are entering a number which represents the current number of people on treatment from period to period. For example, in November 2020 you could have 100 people on treatment, in December 2020 you could have 87. If you want to know the amount of people currently on treatment within the year, you are looking for the value of 87. By default, DHIS2 would have aggregated these values (87+100+values for other months in 2020); however this is not what we want, we only want the most recent value that has been entered.

As an example, let us review our data entry page for HIV



Here, PLHIV currently on ART in January 2024 is 735+1077 = 1812

In February 2024 , this changes to 721 + 1036 = 1757

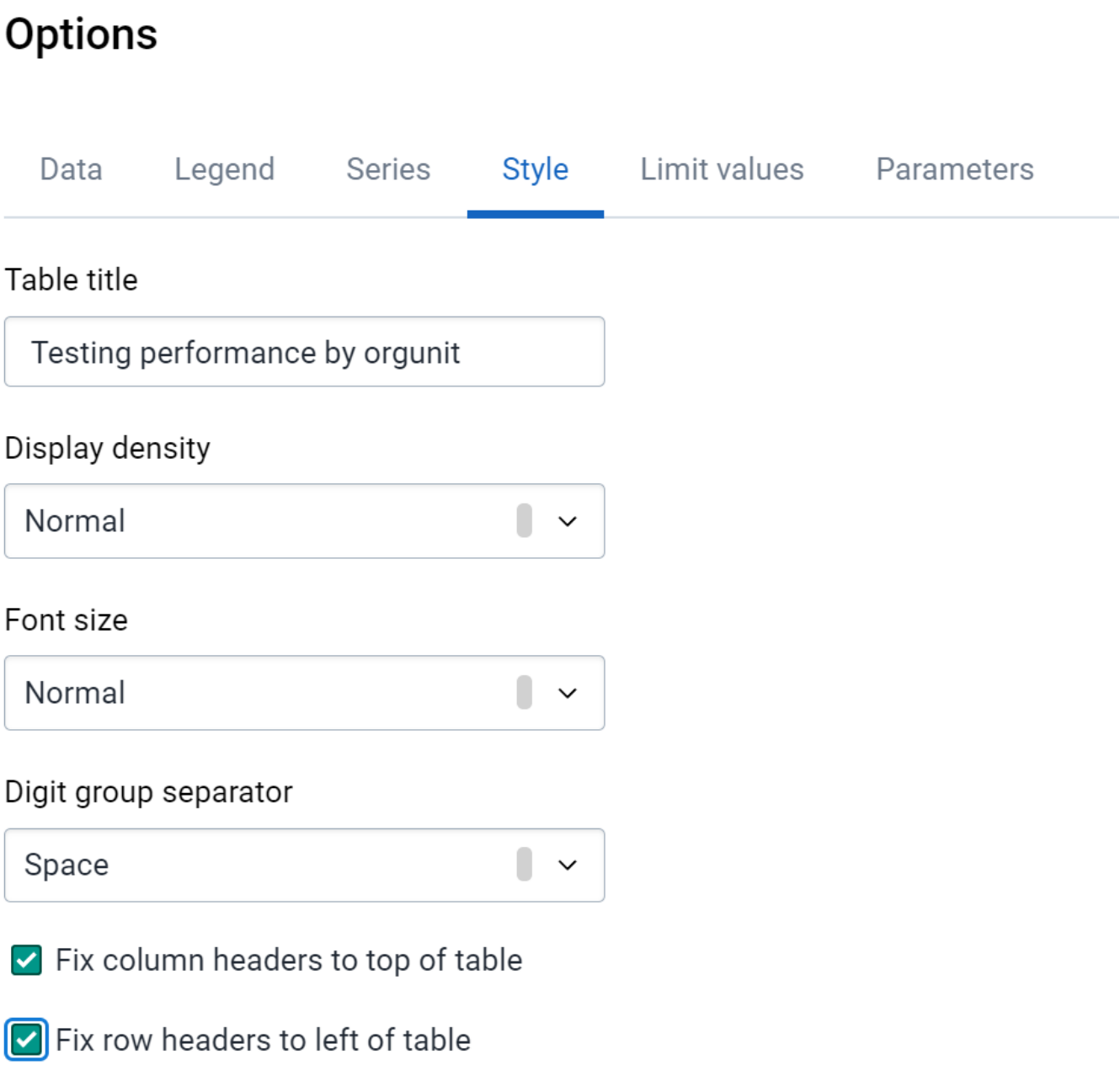
If I were interested in the number of PLHIV currently on ART for FEBRUARY, I would want the value only from February, I would not want the sum of January + February + March.

In pivot tables, let us apply this across the last 12 months. Here I would want the most recent value that has been entered for PLHIV currently on ART and not a sum of the last 12 months. We can do this in 2 ways:

1. We set the data element to aggregate using the last value type in maintenance
2. We can modify the way the data element aggregates in the pivot table options. This can be useful to move between aggregation methods for a particular data element depending on the output you require.

Let us look at an example by creating a new pivot table/

- Data: HIV - PLHIV currently on ART (Data Element within the **HIV **group)
- Periods: Last 12 months
- Organisation Units: Health Centre Group in Animal Region



The data element PLHIV currently on ART is currently set to aggregate using the “average (sum in org unit hierarchy)” function in maintenance. This causes the average of the values from the last 12 months to be displayed in this particular table.

If we change this to aggregate via last value, it will select the last value that was entered during that 12 month period that has been filtered and place it in the output of the table. To aggregate values this way, open table options and set the aggregation type to “last value” within the “Data” tab.

	HIV - PLHIV currently on ART
Beetle Health Centre	947.6
Big Five Health Centre	8 972.9
Bulldog Health Centre	9 854.4
Cheetah Health Centre	4 537.1
Crow Health Centre	3 031.8
Dingo Health Centre	8 616.7
Doberman Pinscher Health Centre	11 169.6
Flounder Health Centre	6 539.9
Grasshopper Health Centre	1 042.4
Great Dane Health Centre	9 983.8
Hare Health Centre	7 327.5
Herring Health Centre	4 099.4
Knifefish Health Centre	7 360.6
Leopard Health Centre	5 499.8
Mosquitofish Health Centre	3 097.9

Note that you can set your value to aggregate any way you would like here if you want to modify the output using the default method of aggregating the data element and we are using last value to demonstrate this feature.

This gives us a better indication of who is on ART at the end of the point in time we have selected. In this case, using the last 12 months, we will get the number currently on ART at the end of the last 12 month period we have selected.

Select **Update** to update the table and review the returned result

	HIV - PLHIV currently on ART
Beetle Health Centre	1 017
Big Five Health Centre	9 056
Bulldog Health Centre	10 580
Cheetah Health Centre	4 883
Crow Health Centre	3 042
Dingo Health Centre	9 070
Doberman Pinscher Health Centre	11 965
Flounder Health Centre	7 030
Grasshopper Health Centre	1 086
Great Dane Health Centre	10 612
Hare Health Centre	7 578
Herring Health Centre	4 476
Knifefish Health Centre	7 865