1

The Guide

What this guide is intended to achieve

This guide is designed to enable an appropriately trained individual to prepare an extract report (file) exported from a Spectrum system to a 'DHIS2 ready' status and then initiate the DHIS2 import.

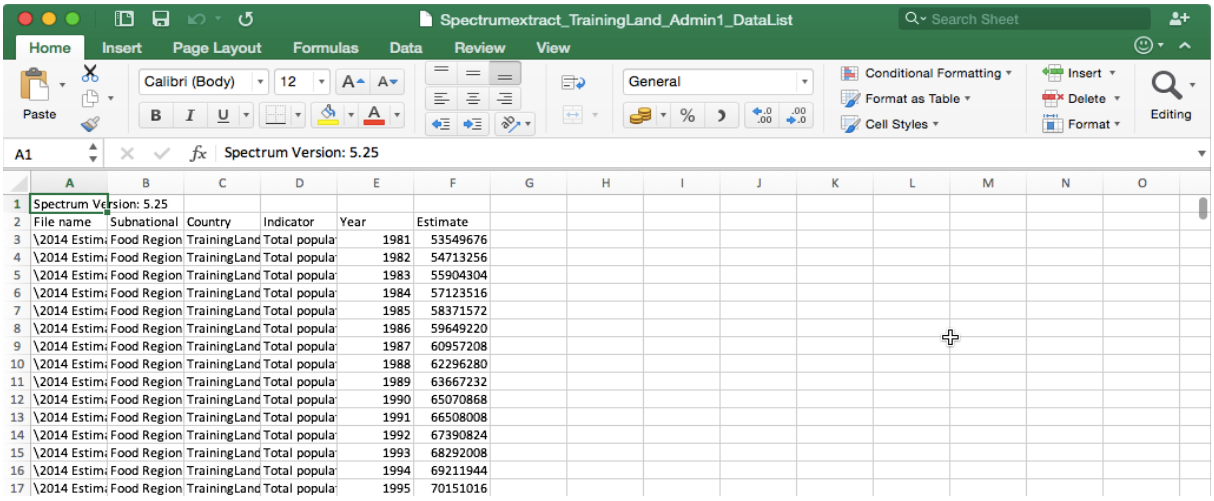
It achieves this by outlining a detailed series of 'steps' supported by screenshots of an actual live import process. A video has also been produced and is accessible via a link in the support section of the App.

Protocol for making a DHIS2 import-ready file

Step 1 – Open the extract file

There are a number of Spectrum extract file formats. The one most closely resembling the format the DHIS2 needs for import is known as the list format. The filename will normally have *DataList* appended to it.

The file will have the Spectrum Version Number in the first cell (A1), and consist of six columns of data. Each row is a single estimate for a specific location, gender and age-bracket combo (where appropriate).



	A	B	C	D	E	F
1	Spectrum Version: 5.25					
2	File name	Subnational	Country	Indicator	Year	Estimate
3	\2014 Estim	Food Region	TrainingLand	Total popula	1981	53549676
4	\2014 Estim	Food Region	TrainingLand	Total popula	1982	54713256
5	\2014 Estim	Food Region	TrainingLand	Total popula	1983	55904304
6	\2014 Estim	Food Region	TrainingLand	Total popula	1984	57123516
7	\2014 Estim	Food Region	TrainingLand	Total popula	1985	58371572
8	\2014 Estim	Food Region	TrainingLand	Total popula	1986	59649220
9	\2014 Estim	Food Region	TrainingLand	Total popula	1987	60957208
10	\2014 Estim	Food Region	TrainingLand	Total popula	1988	62296280
11	\2014 Estim	Food Region	TrainingLand	Total popula	1989	63667232
12	\2014 Estim	Food Region	TrainingLand	Total popula	1990	65070868
13	\2014 Estim	Food Region	TrainingLand	Total popula	1991	66508008
14	\2014 Estim	Food Region	TrainingLand	Total popula	1992	67390824
15	\2014 Estim	Food Region	TrainingLand	Total popula	1993	68292008
16	\2014 Estim	Food Region	TrainingLand	Total popula	1994	69211944
17	\2014 Estim	Food Region	TrainingLand	Total popula	1995	70151016

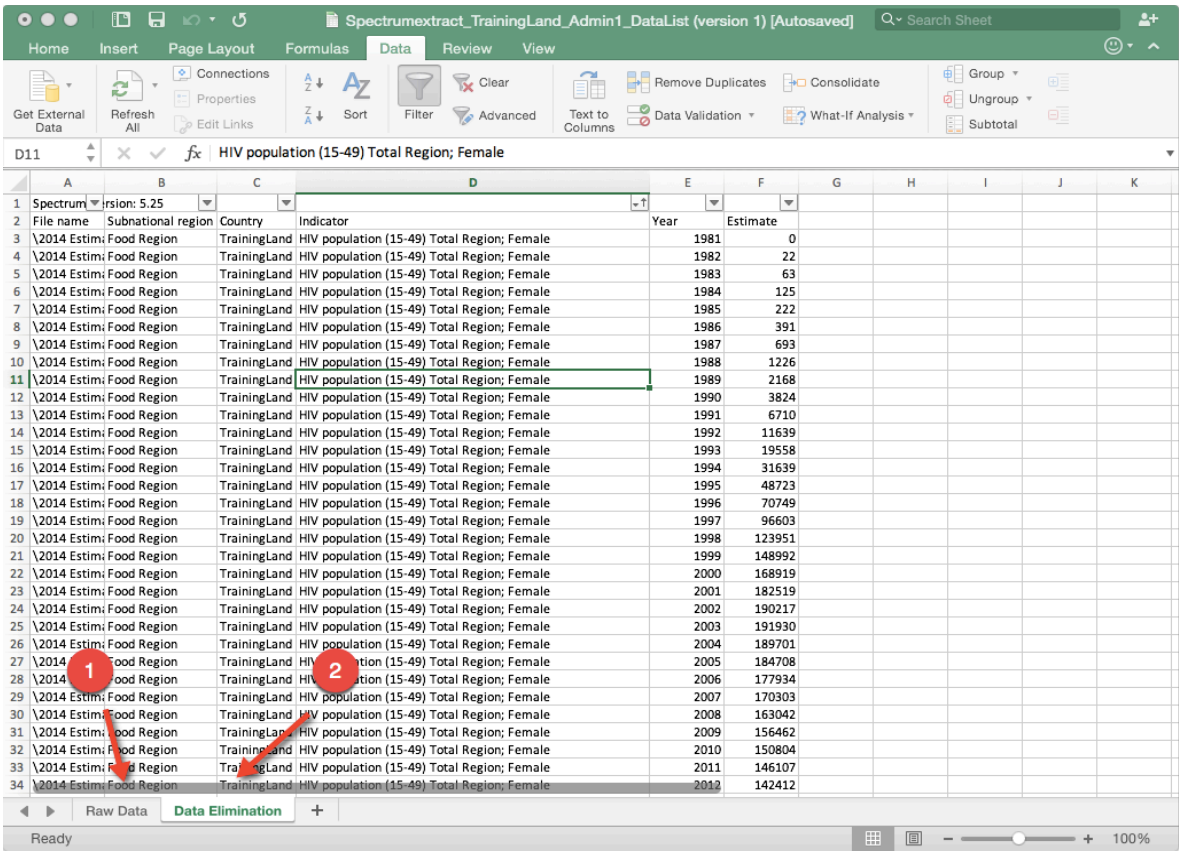
Figure 1 - Initial opening of a Spectrum HV Estimate extract file

Step 2 – Copy the original sheet

It is important to be able to refer to the original import data. To assist in the 'preparation' process, create a copy of the original sheet. Call the sheets:

1. Raw Data (for the original sheet);
2. 'Data Elimination' (for the copied sheet);

Expand the columns of the copied sheet so the values are readable. Note that the 'Indicator' column includes the details of the age-bracket and gender, while the 'population' is represented by two columns – 'Country' and 'Subnational region'.



Spectrum	rsion: 5.25				
File name	Subnational region	Country	Indicator	Year	Estimate
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1981	0
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1982	22
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1983	63
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1984	125
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1985	222
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1986	391
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1987	693
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1988	1226
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1989	2168
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1990	3824
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1991	6710
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1992	11639
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1993	19558
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1994	31639
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1995	48723
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1996	70749
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1997	96603
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1998	123951
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1999	148992
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2000	168919
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2001	182519
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2002	190217
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2003	191930
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2004	189701
\2014	ood Region	TrainingLand	HIV ation (15-49) Total Region; Female	2005	184708
\2014	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2006	177934
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2007	170303
\2014 Estim	ood Region	TrainingLand	HIV population (15-49) Total Region; Female	2008	163042
\2014 Estim	ood Region	TrainingLand	HIV population (15-49) Total Region; Female	2009	156462
\2014 Estim	ood Region	TrainingLand	HIV population (15-49) Total Region; Female	2010	150804
\2014 Estim	d Region	TrainingLand	HIV population (15-49) Total Region; Female	2011	146107
\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2012	142412

Figure 2 – Create a copy of the original sheet

Step 3 – Eliminate Totals

The standard Spectrum extract format format typically includes Totals for each combination of disaggregation's (e.g. the totals for male + female for all age-brackets for a give indicator). Totals are also included for each sub-region as well as a national total.

Since DHIS2 only requires data at the lowest level of granularity (i.e. the disaggregated values), it is not necessary to import indicator totals. DHIS2 will automatically generate aggregates as part of its standard data warehouse capability.

Make sure to identify and delete the Totals!

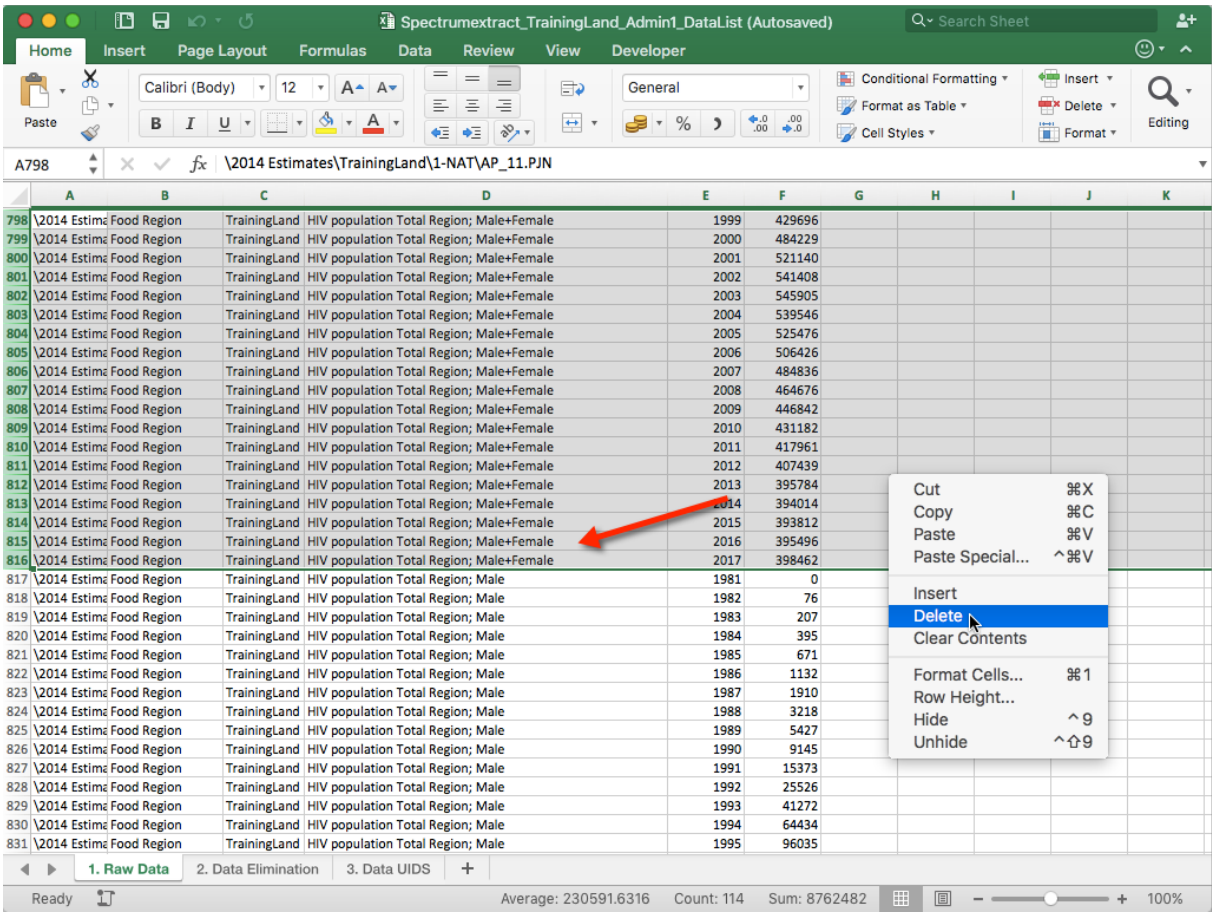


Figure 3 – Delete all 'Totals' (e.g. Male+Female) as disaggregated values will be summed in DHIS2.

In the sample file used for this Guide, the following Population rows were also identified and eliminated:

- Population aged 0-4 Total Region; Male
- Population aged 0-4 Total Region; Female
- Population aged 5-14 Total Region; Male
- Population aged 5-14 Total Region; Female
- Population aged 15-24 Total Region; Male
- Population aged 15-24 Total Region; Female
- Population aged 15-64 Total Region; Male
- Population aged 15-64 Total Region; Female
- Population aged 65+ Total Region; Male
- Population aged 65+ Total Region; Female

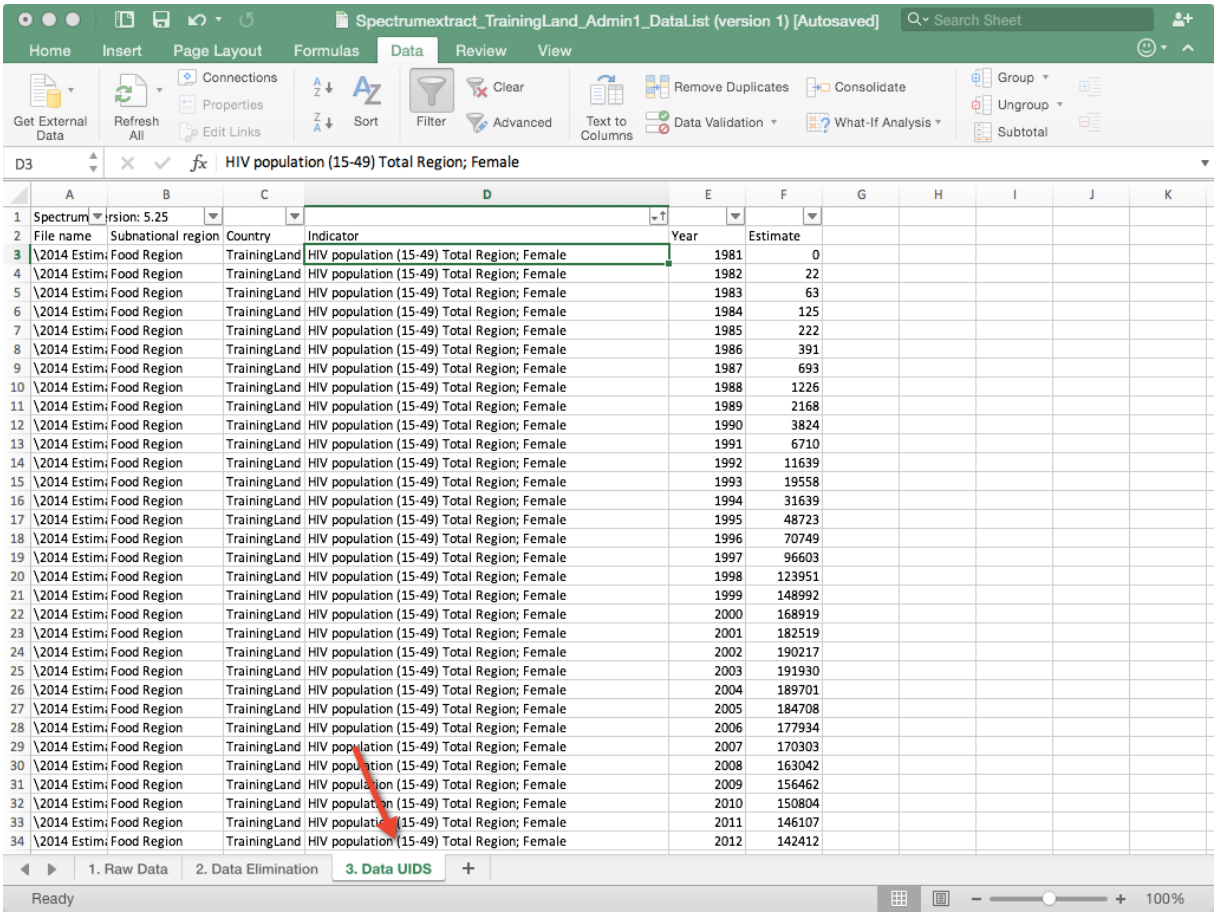
Leaving

- HIV population (15-49) Total Region; Female
- HIV population (15-49) Total Region; Male
- HIV population (15+) Total Region; Female
- HIV population (15+) Total Region; Male
- Mothers needing PMTCT Total Region; Female
- Calculated number needing adult ART (Dec 31) Female
- Calculated number needing adult ART (Dec 31) Male

Note that while the word 'Total' is still in the label for the indicator, these are in fact disaggregated estimates (by age-bracket, gender and subnational grouping).

Step 4 – Copy the Data Elimination Sheet

As a precursor to the next step, copy the Data Elimination Sheet (after elimination of Totals rows in the previous Step) to a new sheet called Data UIDs.



	A	B	C	D	E	F
1	Spectrum	rsion: 5.25				
2	File name	Subnational region	Country	Indicator	Year	Estimate
3	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1981	0
4	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1982	22
5	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1983	63
6	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1984	125
7	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1985	222
8	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1986	391
9	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1987	693
10	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1988	1226
11	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1989	2168
12	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1990	3824
13	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1991	6710
14	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1992	11639
15	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1993	19558
16	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1994	31639
17	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1995	48723
18	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1996	70749
19	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1997	96603
20	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1998	123951
21	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	1999	148992
22	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2000	168919
23	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2001	182519
24	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2002	190217
25	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2003	191930
26	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2004	189701
27	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2005	184708
28	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2006	177934
29	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2007	170303
30	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2008	163042
31	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2009	156462
32	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2010	150804
33	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2011	146107
34	\2014 Estim	Food Region	TrainingLand	HIV population (15-49) Total Region; Female	2012	142412

Figure 4 – Copy Data Elimination sheet (after removal of total rows) to a new sheet labelled Data UIDs.

Step 5 – Replace Indicator labels with UIDs

Each 'indicator' in the Spectrum file should match with one of the DHIS2 'data elements' that were setup during the Bootstrapping initiation process. Each of the DHIS2 data elements has a unique UID. The preferred import process for DHIS2 is to identify each item in the import file with a UID to ensure data is properly linked to the right data element (chapter 21 of the DHIS2 User Guide)[1].

Step 5a – Identify the data element UIDs.

The process below shows the manual process of identifying the data element UIDs. While some of the UIDs are already known (since they were standardized as part of the bootstrapping process), other UIDs are unique to the DHIS2 instance and must be identified manually.

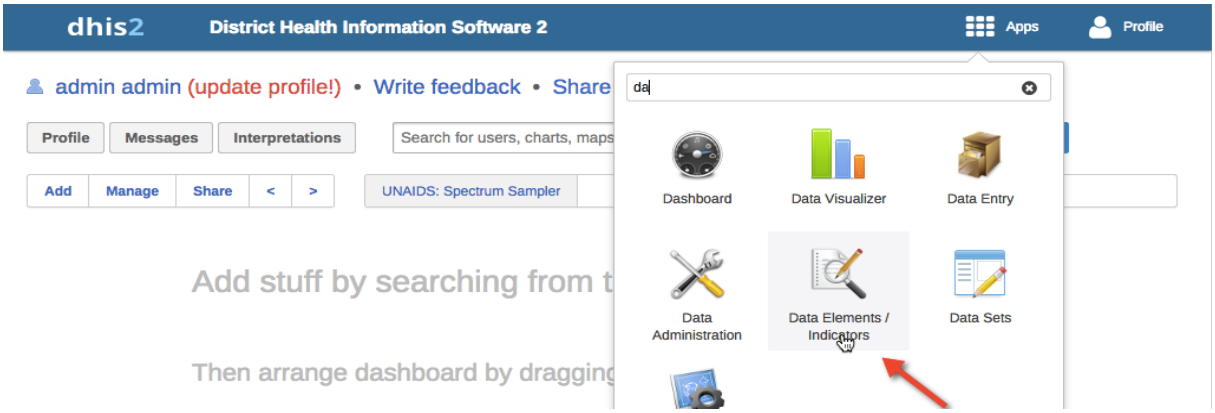


Figure 5 - Select the Data-Element/Indicators DHIS2 App

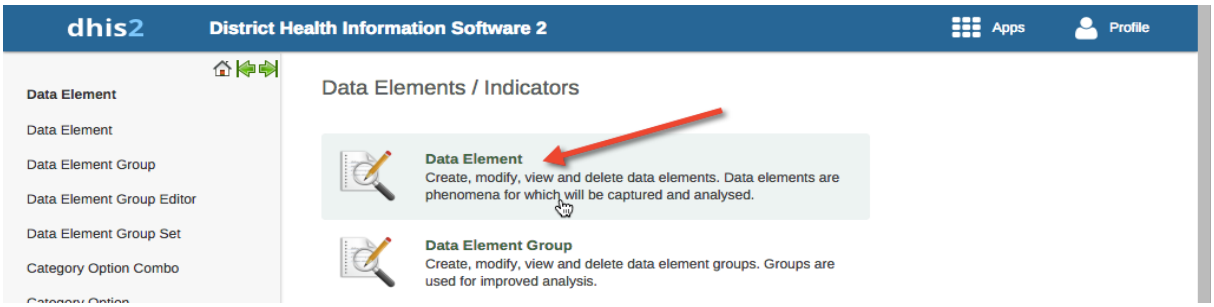


Figure 6 - Select the Data Element option

[1] See http://dhis2.github.io/dhis2-docs/master/en/user/html/dhis2_user_manual_en_full.html

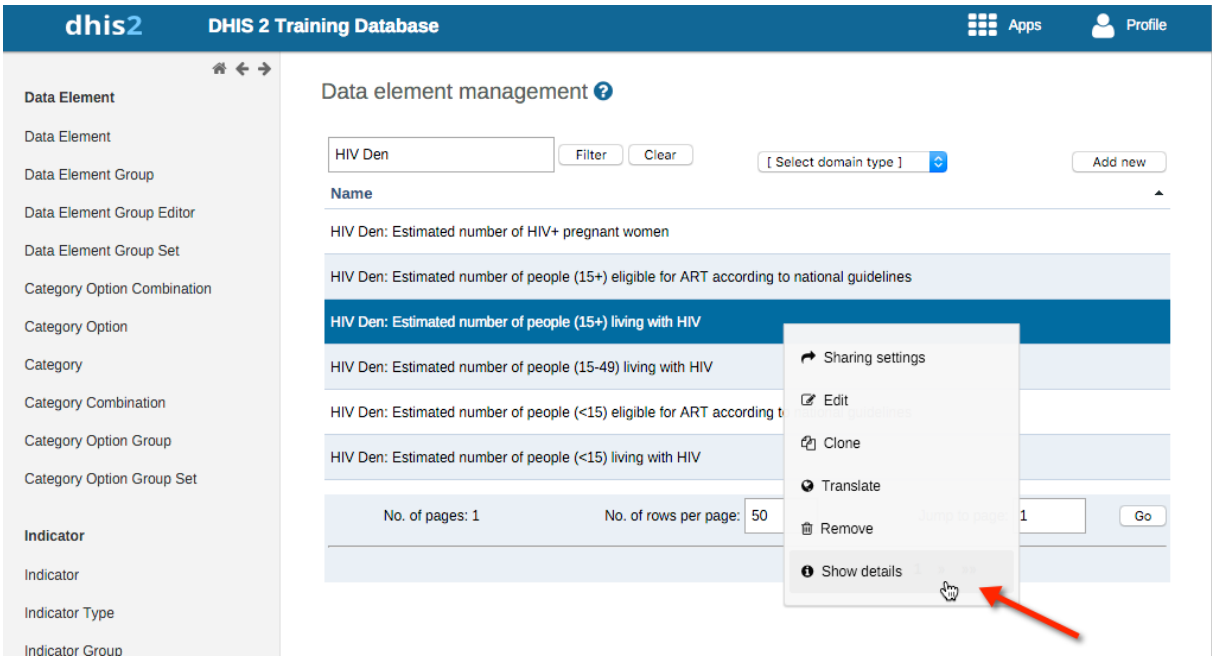


Figure 7 - Find in the list of data elements those beginning with 'UNAIDS: ...' and click on the appropriate data-element. From the displayed dropdown menu, select 'Show details'

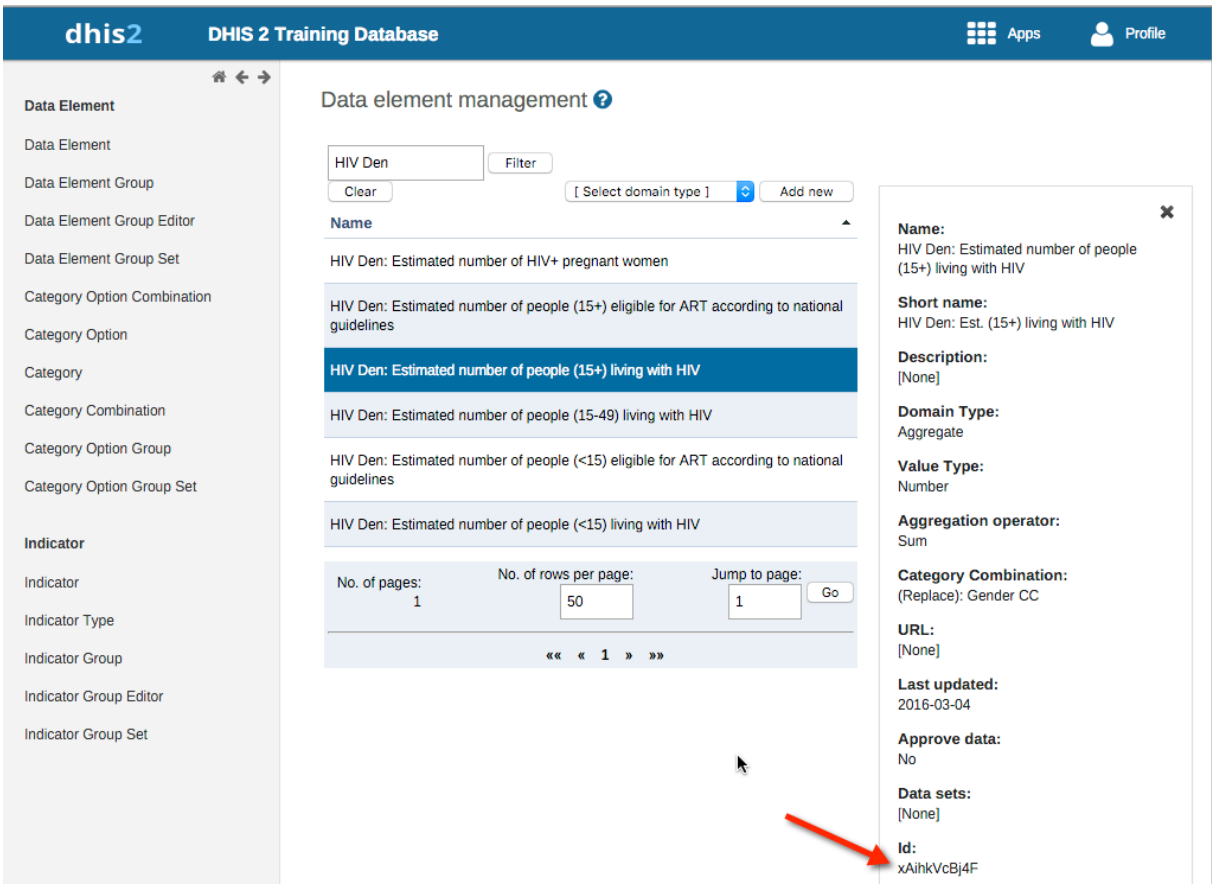


Figure 8 - Note down the ID for the specific data element. It will be used in the import spreadsheet.

Note: The default HIV Estimate Denominators implemented by the App in DHIS2 will use the same UIDs. These are listed below for convenience. It will be necessary to use the above method to identify local organizational subnational region UIDs.

Denominator	UID
HIV Den: Estimated number of HIV+ pregnant women	PjLBZcVwRnr
HIV Den: Estimated number of people (15+) eligible for ART according to national guidelines	LEdbdocVhvx
HIV Den: Estimated number of people (15+) living with HIV	xAihkVcBj4F
HIV Den: Estimated number of people (15-49) living with HIV	rhXstKVfvvj
HIV Den: Estimated number of people (<15) eligible for ART according to national guidelines	khe0fQWys0p
HIV Den: Estimated number of people (<15) living with HIV	F4KpUnnx0S5

Step 5b – Insert 2 new columns

Each Indicator in the spreadsheet is represented in DHIS2 by at least 1 and sometimes more UIDS in DHIS2. One UID must always be present (the one representing the indicator) while the other UID will represent disaggregation (e.g. gender).

To support these UIDS, insert two new columns into the 'Data UIDs' sheet:

1. 'dataelement'; and
2. 'categoryoptioncombo'

These labels are important as they are used as placeholders to identify which columns hold the data needed by DHIS2, and the meaning of the columns.

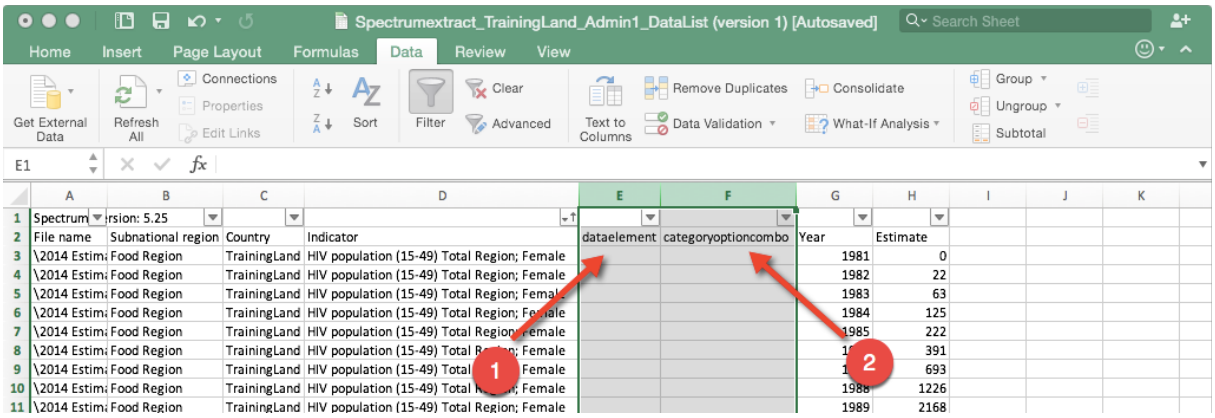
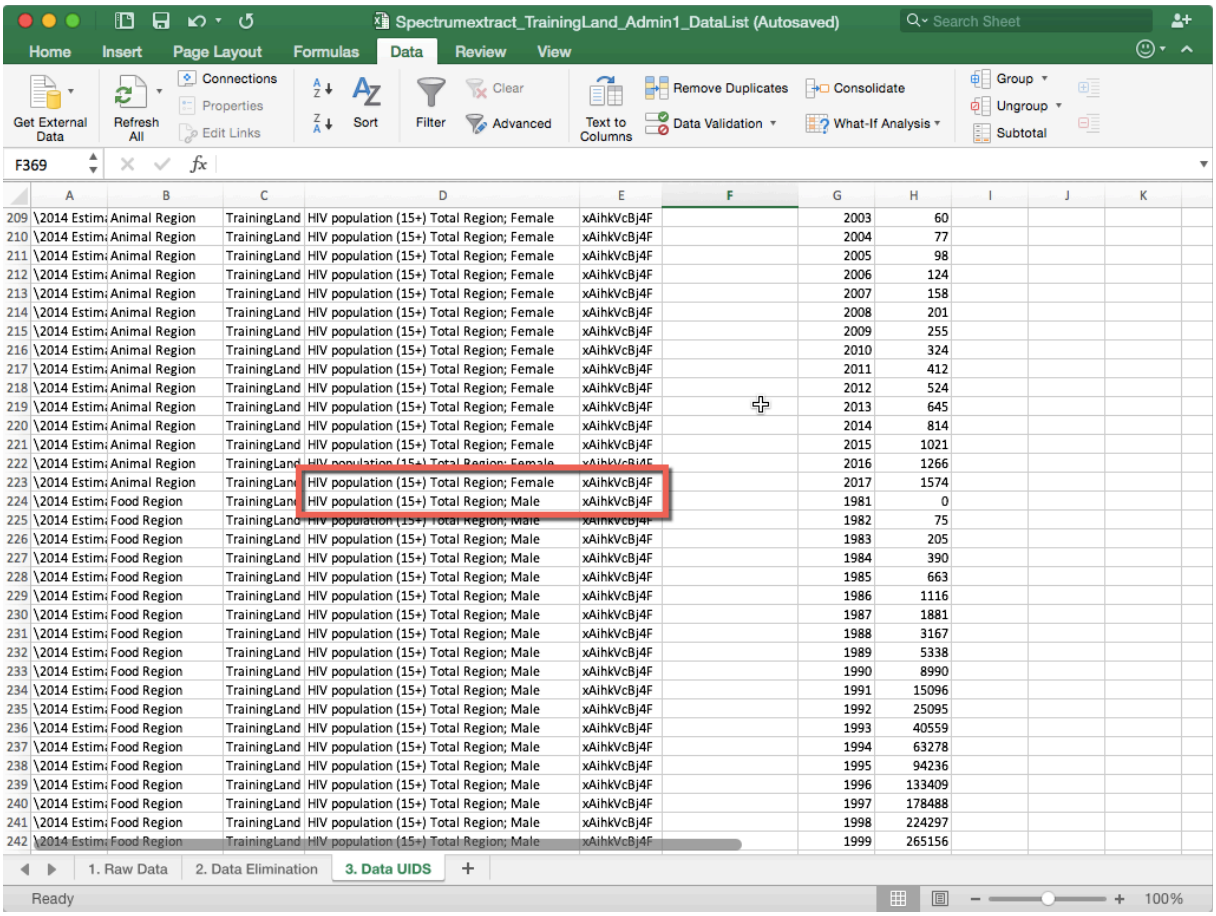


Figure 9 - Inserting two new placeholder columns for dataelement and categorryoptioincombo

Step 5c – Insert the matching 'dataelement' UIDs for all Indicators

Note that the same UID will be used across various combinations of disaggregation (e.g. in the example below, the same UID has been used across the subnational regions and for the male/female gender), as the same conceptual 'indicator' is being referred to in all rows.

Other columns (e.g. the categoryoptioncombo) will be used to further identify the specific gender disaggregation being referred to.



	A	B	C	D	E	F	G	H	I	J	K
209	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2003	60			
210	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2004	77			
211	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2005	98			
212	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2006	124			
213	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2007	158			
214	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2008	201			
215	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2009	255			
216	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2010	324			
217	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2011	412			
218	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2012	524			
219	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2013	645			
220	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2014	814			
221	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2015	1021			
222	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2016	1266			
223	\2014 Estim	Animal Region	TrainingLand	HIV population (15+) Total Region; Female	xAihkVcBj4F		2017	1574			
224	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1981	0			
225	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1982	75			
226	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1983	205			
227	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1984	390			
228	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1985	663			
229	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1986	1116			
230	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1987	1881			
231	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1988	3167			
232	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1989	5338			
233	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1990	8990			
234	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1991	15096			
235	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1992	25095			
236	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1993	40559			
237	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1994	63278			
238	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1995	94236			
239	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1996	133409			
240	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1997	178488			
241	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1998	224297			
242	\2014 Estim	Food Region	TrainingLand	HIV population (15+) Total Region; Male	xAihkVcBj4F		1999	265156			

Figure 10 - Insert into the 'dataelement' column the relevant UID representing the specified Indicator

Step 5d – Insert the local gender UIDs (specific to the local instance)

Several of the Spectrum data elements in the import file are disaggregated by gender. It is necessary to identify the UID for the Male and Female Combinations in DHIS2 and insert them into the categoryoptioncombo column as appropriate (using the indicator 'label' as the guide to which UID goes in which row).

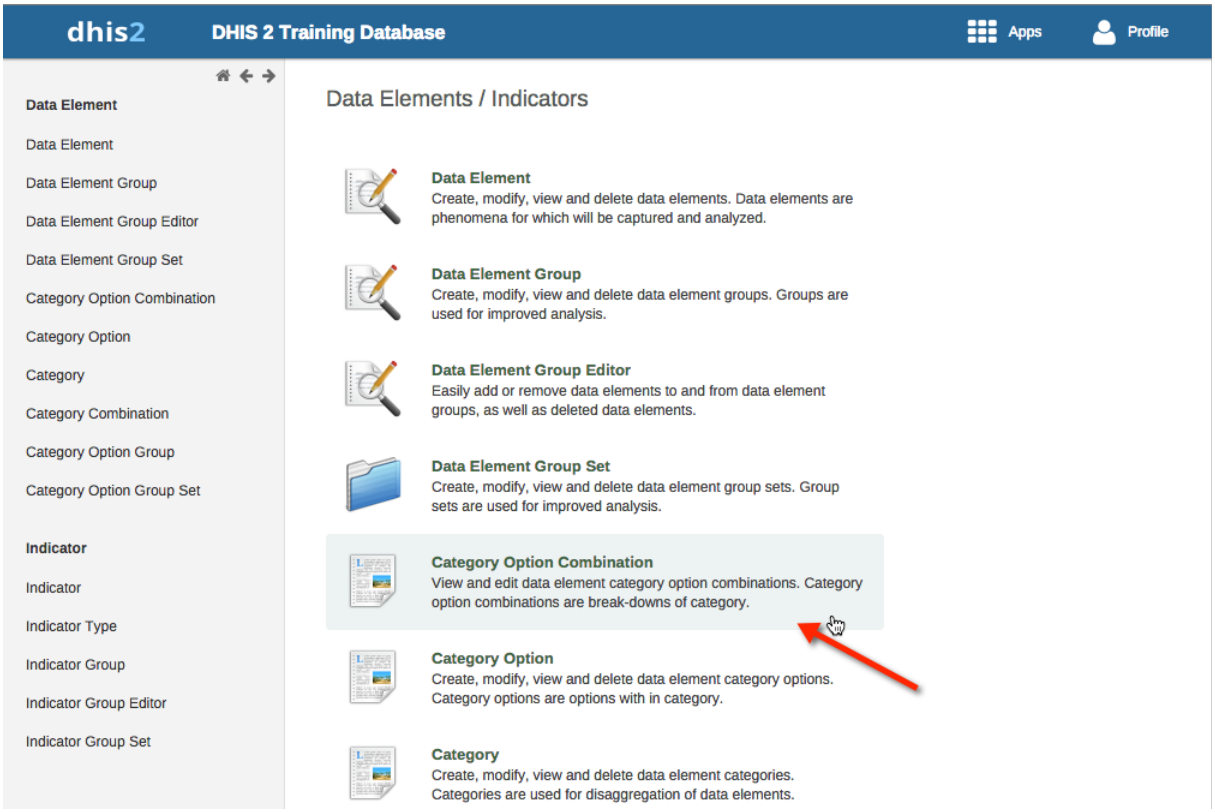


Figure 11 – Select the Category Option Combination menu item under 'Data Elements' in DHIS2

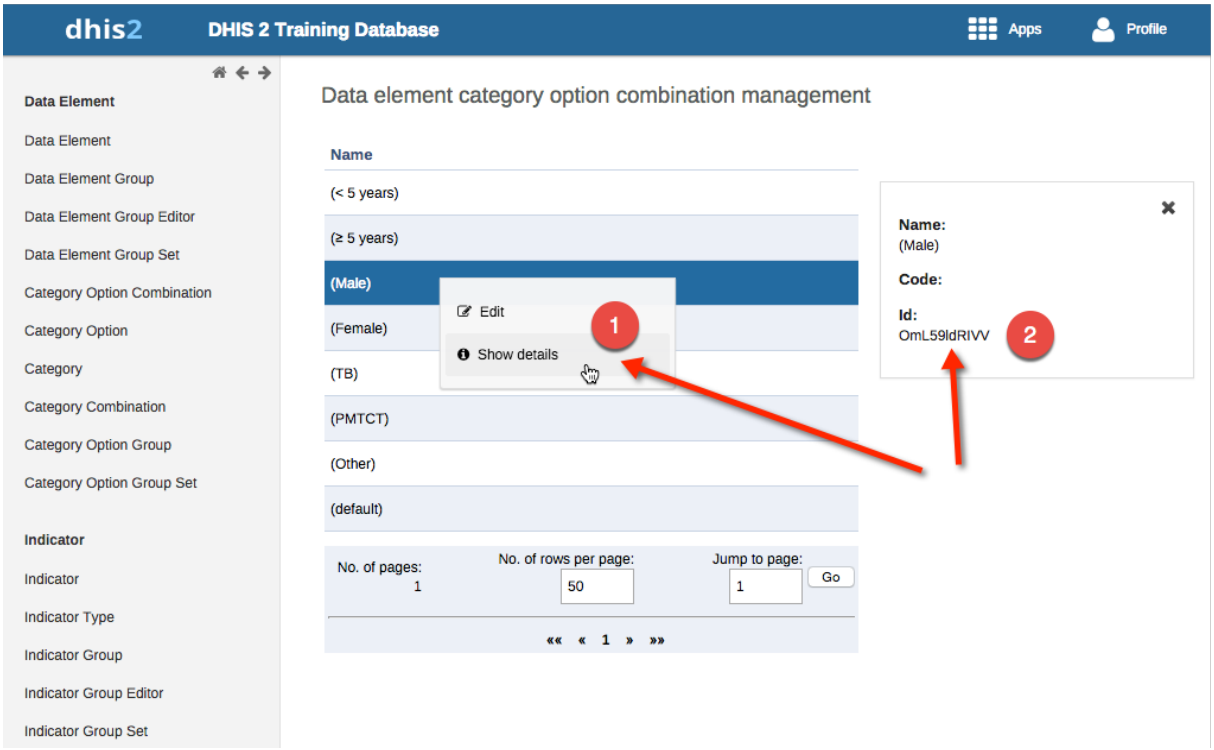


Figure 12 – 1. 'Show Details' of the Male/Female Category Option Combination; and 2. Copy the IDs

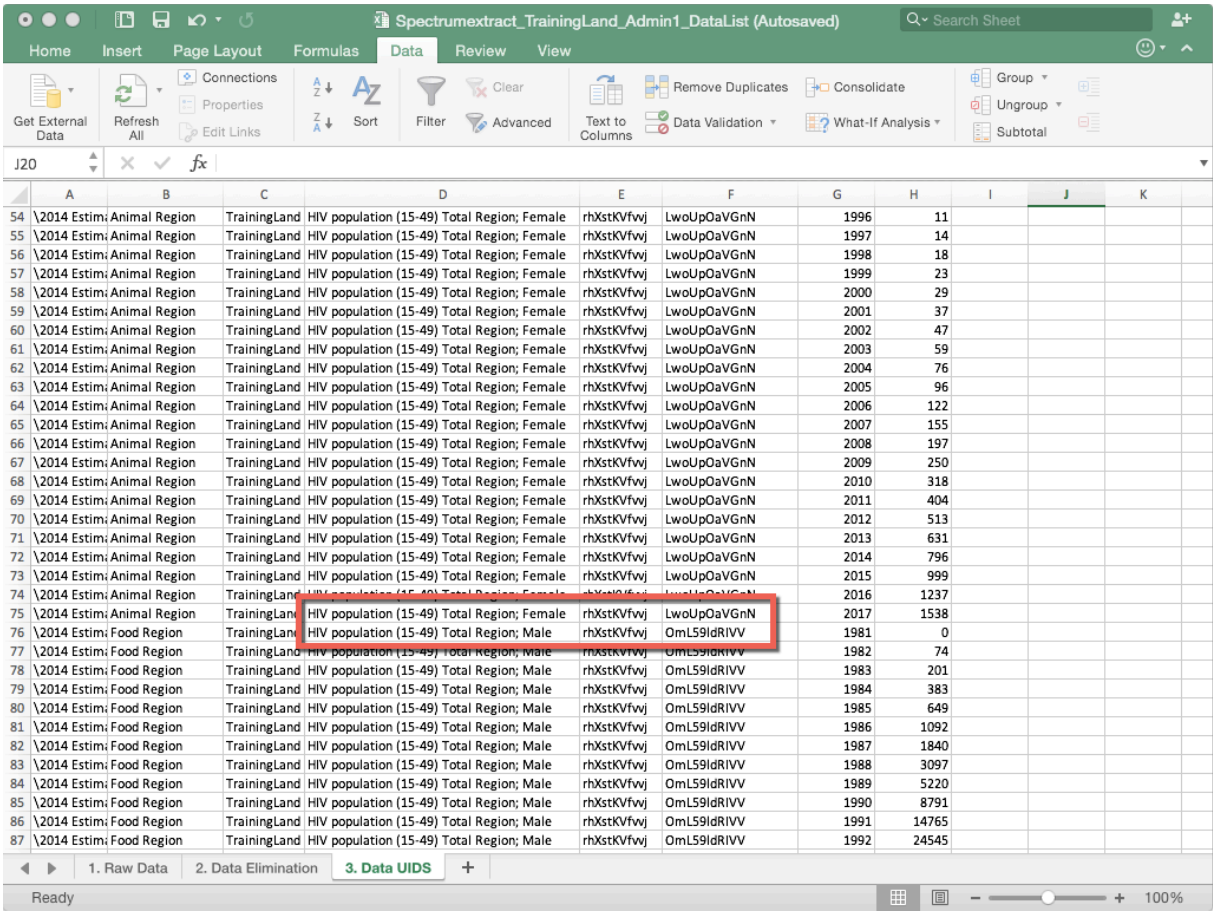


Figure 13 - Insert into the 'categoryoptioncombo' column the relevant UID representing the specified gender

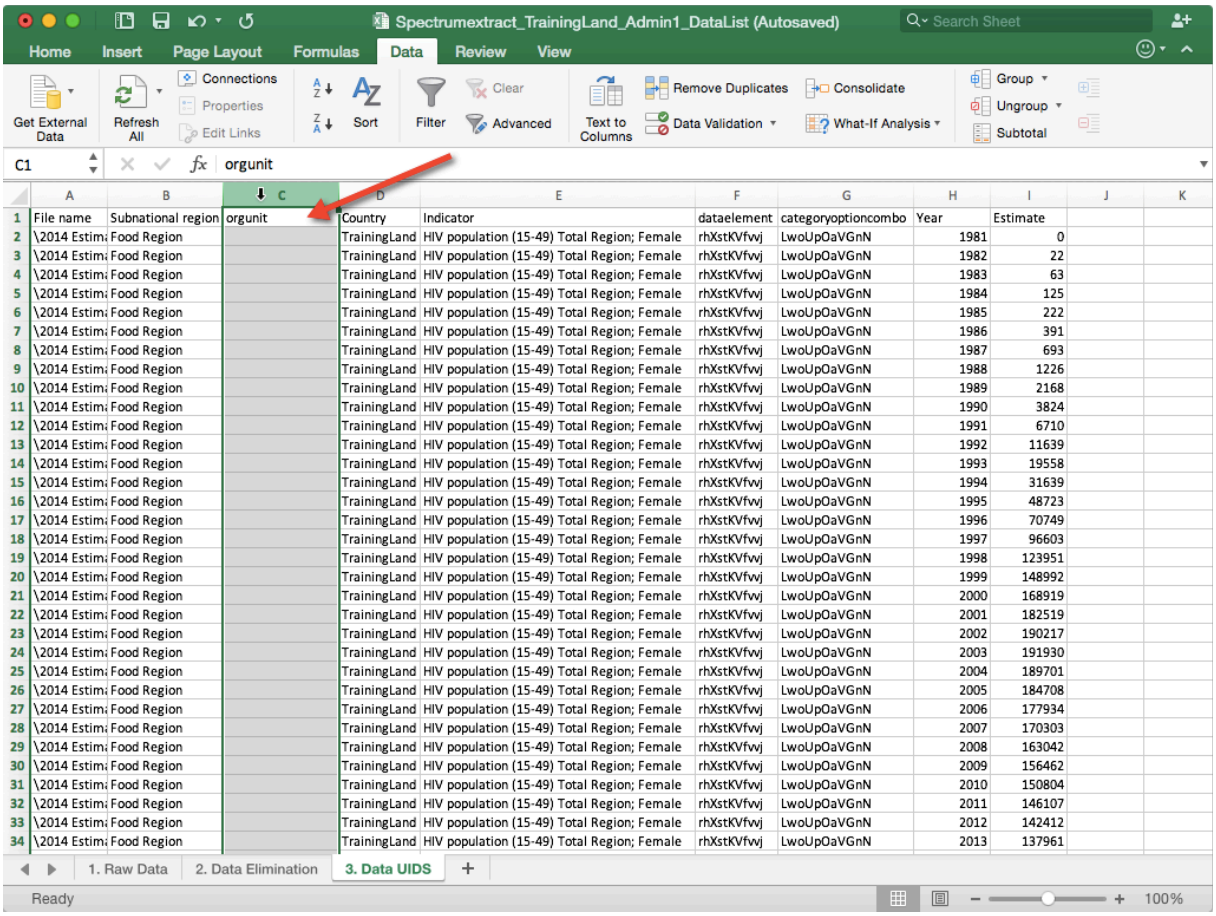
Step 6 – Insert an Organizational Unit Column, identify and insert the appropriate UID for the given Country/Sub-national Level

The Spectrum extract files represents location for the given estimate by Country and Subnational Region columns. In DHIS2, a single object (UID) represents a location, and they are arranged into what is called an organizational hierarchy. It should be noted that in most DHIS2 country instances, the breakdown of the geographical hierarchies mirrors the typical geopolitical hierarchies of the country (e.g. national, regional, district etc.).

It is assumed that the Spectrum extract will also use an identical breakdown, though the 'labels' between the two systems are likely to have different spellings. The task at this stage is to 'match' the Subnational Region in the Spectrum file with the equivalent organizational unit in the DHIS2 hierarchy, and extract the UIDs to ensure correct 'linking' of estimates during import.

The task is similar to previous steps (i.e. find UIDs and insert as appropriate in the Spectrum extract file).

Step 6a – Insert an 'orgunit' column.



	A	B	C	D	E	F	G	H	I
1	File name	Subnational region	orgunit	Country	Indicator	dataelement	categoryoptioncombo	Year	Estimate
2	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1981	0
3	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1982	22
4	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1983	63
5	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1984	125
6	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1985	222
7	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1986	391
8	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1987	693
9	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1988	1226
10	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1989	2168
11	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1990	3824
12	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1991	6710
13	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1992	11639
14	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1993	19558
15	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1994	31639
16	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1995	48723
17	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1996	70749
18	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1997	96603
19	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1998	123951
20	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	1999	148992
21	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2000	168919
22	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2001	182519
23	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2002	190217
24	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2003	191930
25	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2004	189701
26	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2005	184708
27	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2006	177934
28	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2007	170303
29	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2008	163042
30	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2009	156462
31	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2010	150804
32	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2011	146107
33	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2012	142412
34	\2014 Estim	Food Region		TrainingLand	HIV population (15-49) Total Region; Female	rhXstKVfvwj	LwoUpOaVGnN	2013	137961

Figure 14 – Insert an 'orgunit' column between 'Subnational Region' and 'Country'

Step 6b – Select the 'Organisational Units' App and Menu Item.

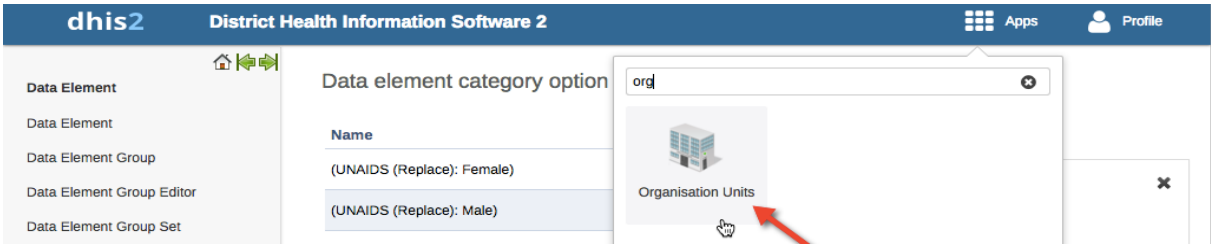


Figure 15 – Select the 'Organisation Units' app from the Apps menu in DHIS2

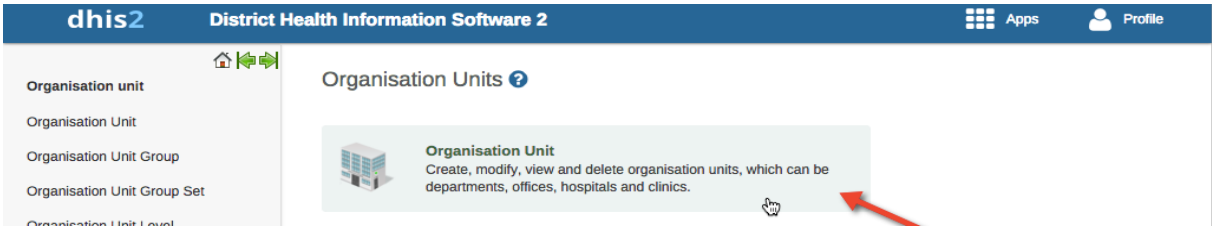


Figure 16 – Select the Organisational Unit menu item to display the Organisational Hierarchy

Step 6c – Identify UIDs for each Subnational Region listed in the Extract

In our example, we've used the 'TrainingLand' demo country. On the left-hand side of the screen highlight the 'top' item in the geographical tree (normally the country name). When you do this, the item you clicked on will turn orange and list he 'children' in the main working area. When you click on one of these 'children', the 'show details' menu item will allow you to obtain the UID for that specific child (region).

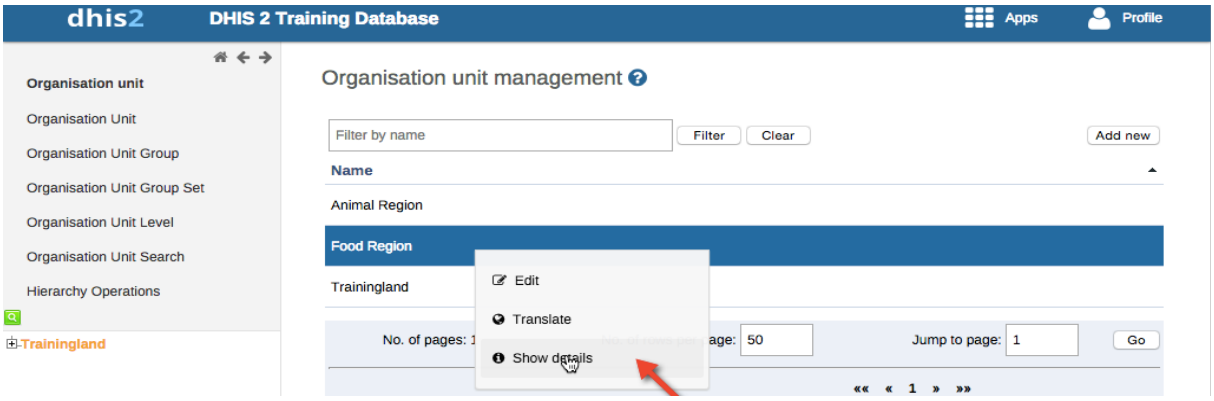


Figure 17 – Highlight the 'country' item at the left (turns orange), then 'Show details' of the subnational region of interest in the main area of the screen.

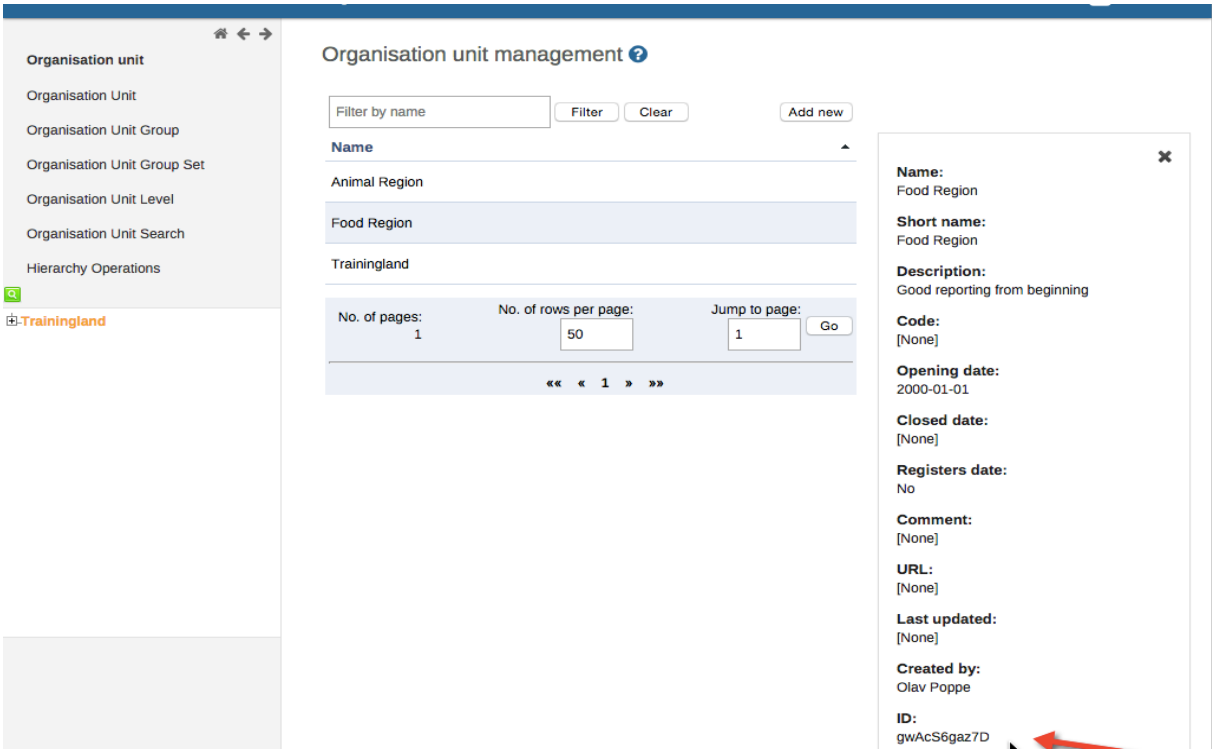


Figure 18 – Copy the desired ID

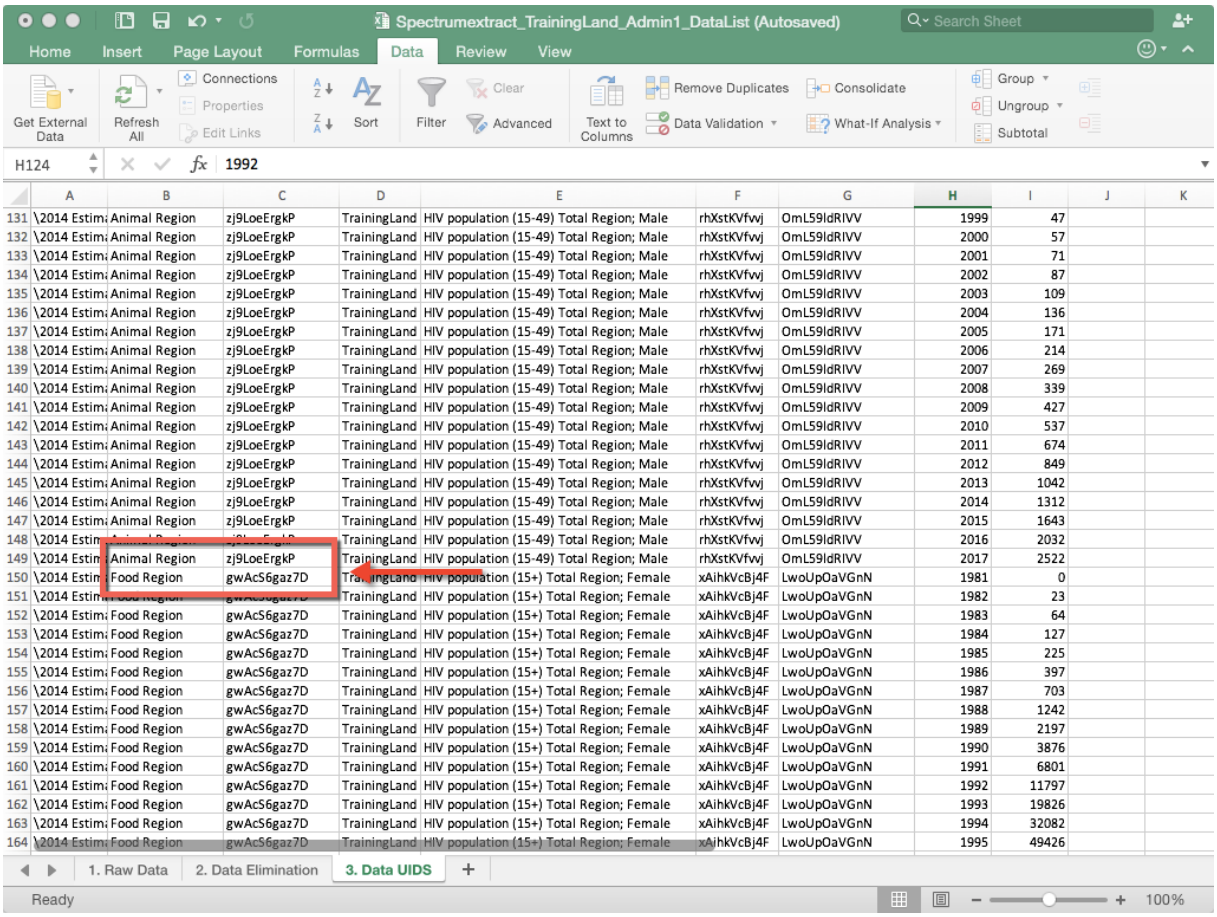


Figure 19 – Insert the appropriate UIDs into the 'Orgunit' Column, using the 'Subnational Region' labels as a guide.

Step 7 – Sort columns into the appropriate order ready for import.

The following sub-steps should be executed resulting in a final DHIS2 import-ready extract file.

Step 7a – Do a final check then copy to new sheet

After a final check that all 'Indicator' labels have an equivalent 'data element' ID, that 'Indicator' labels that have gender have an equivalent 'categoryoptioncombo' ID, and that every 'Subnational region' label has an equivalent 'Orgunit' ID, copy the worksheet you've been working to a new sheet and call it '4. Data Order'.

Step 7b – Change the following column names

- 'Year' becomes 'period'
- 'Estimate' becomes 'value'
- 'Filename' becomes 'comment'

Step 7c - Delete Extraneous Columns

- Delete 'Subnational region' and 'Country' columns
- Delete the 'Indicator' column

Step 7d - Arrange columns in the following order (insert blank columns as necessary):

1. dataelement,
2. period,
3. orgunit,
4. categoryoptioncombo,
5. attributeoptioncombo *(blank)*,
6. value,
7. storedby *(blank)*,
8. timestamp *(blank)*,
9. comment,
10. followup *(blank)*

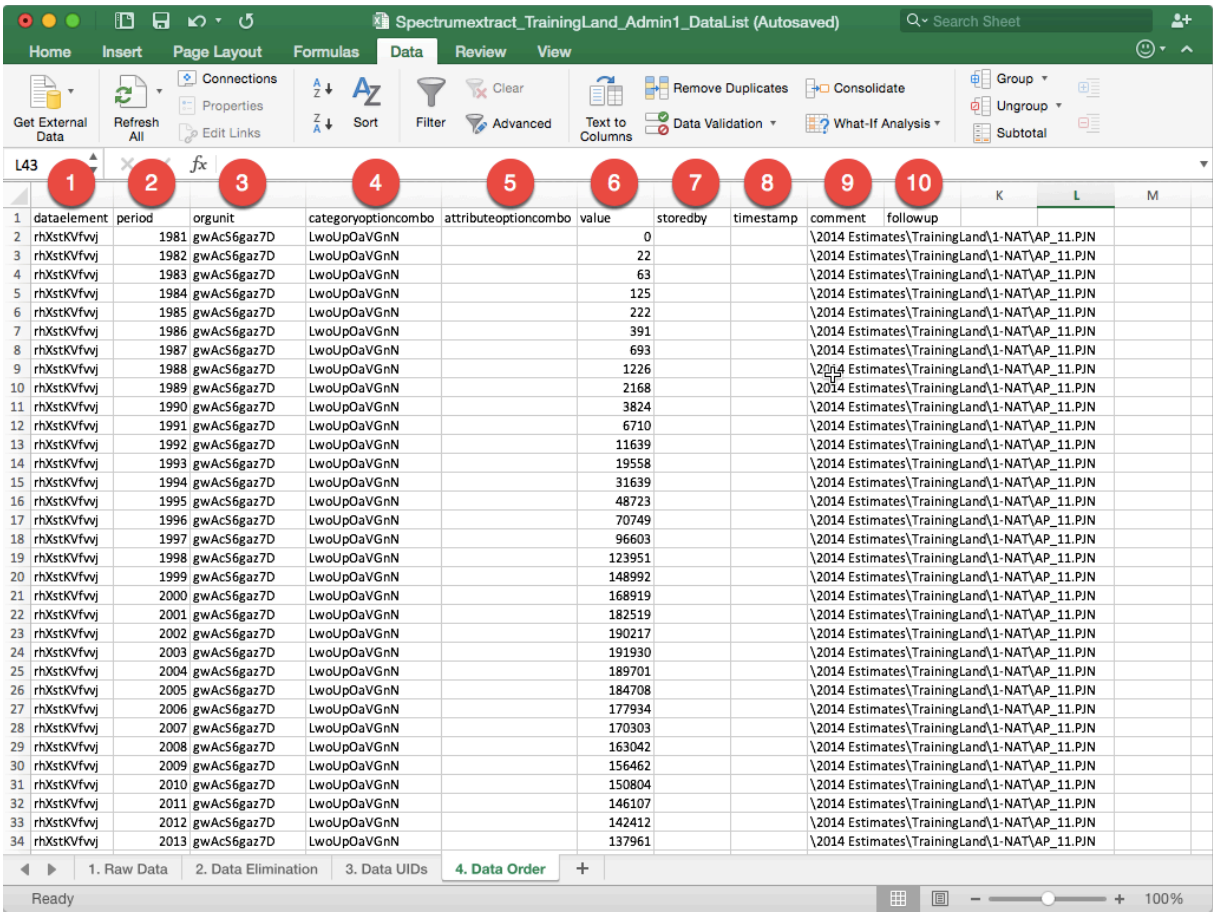
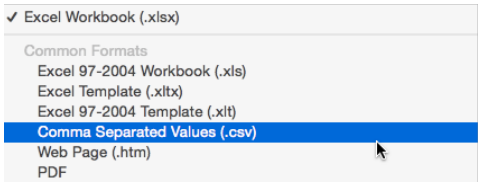


Figure 20 – Import ready version of the Spectrum Extract file

Step 8 – Save the final sheet as a CSV formatted file



2

Importing and Testing

Protocol for importing and testing the Spectrum

Step 1 – Go to the Import-Export App in DHIS2

DHIS2 has a comprehensive data and metadata import and export capability built into the Administrative front-end of the system. Imports of data into DHIS2 can occur in several formats (JSON, XML, CSV etc.), and CSV is the format we've selected in this Guide (because of the ease and familiarity most people have with MS Excel).

Step 1a – Go to the Import-Export App and select Data Import

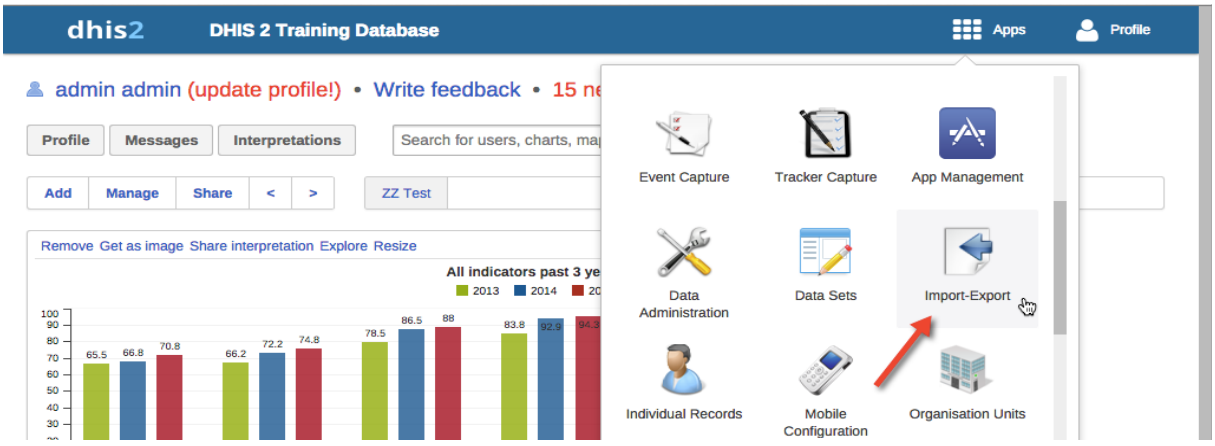


Figure 21 – Use the DHIS2 'Apps' menu item to locate the 'Import-Export' App

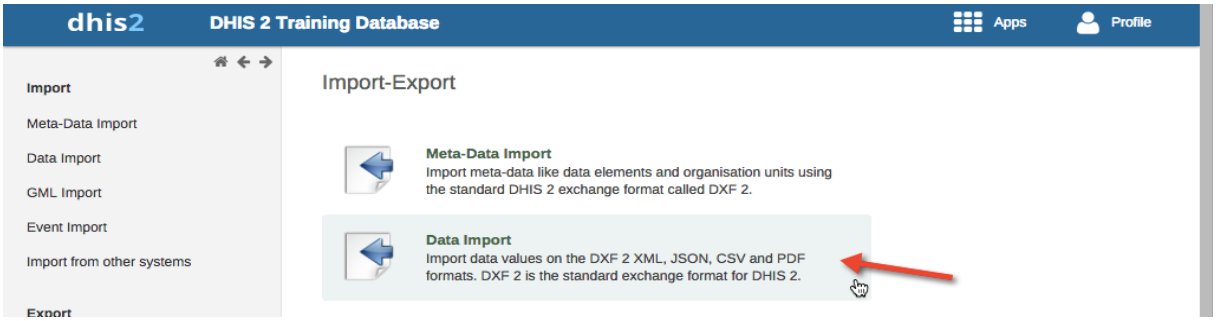


Figure 22 – Select the 'Data Import' item

The Data Import screen will then appear.

Step 2 – Do a 'Dry Run' import test

The 'Dry Run' option allows you to run the full process of import (with all it's internal checks and balances) without actually importing the data. This is an important step, because it highlights any rows of data that will be rejected amongst other errors in the data.

The most common error will be an incorrect UID (i.e. the value doesn't exist or could not be found in DHIS2). This row would be rejected because it cannot be successfully linked to the specified Organisation Unit, Data Element, or Disaggregation (i.e. gender ID).

Step 2a – Adjust the Data Import Parameters

The starting screen should look similar to the image below.

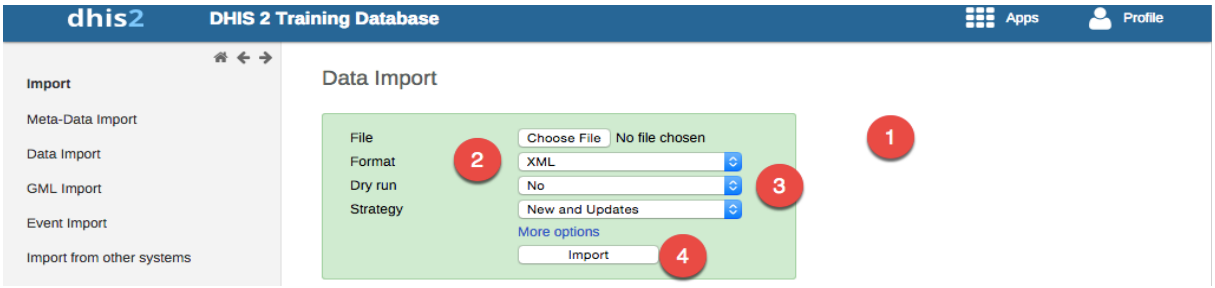


Figure 23 – Starting Point for Data Import Screen

From the starting point highlighted above, do the following

1. Select the CSV file created as a result of the steps in Section 2;
2. Change the format to CSV;
3. Select Yes for the 'Dry Run' parameter.

Here's how it should look just before running the import!

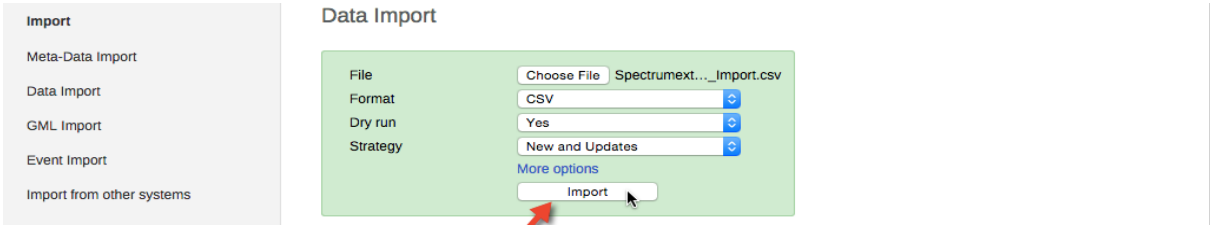


Figure 24 – Example screenshot of the parameters filled in and ready for a 'dry run'!

Step 2b – Run the Import

4. Run the import (leave the Strategy as 'New and Updates').

As the import process is running, a process log will indicated progress.

Step 3 – Review the 'Dry Run' Errors

When the 'dry run' import process is complete, the last item in the progress log will say 'import done' with an option to 'Display Import Summary'

Step 3a – Display Import Summary

From the 'top' of the process list, click on the link 'Display Import Summary'.

Note that the 'import parameters' are reset once the 'Import' button is clicked.

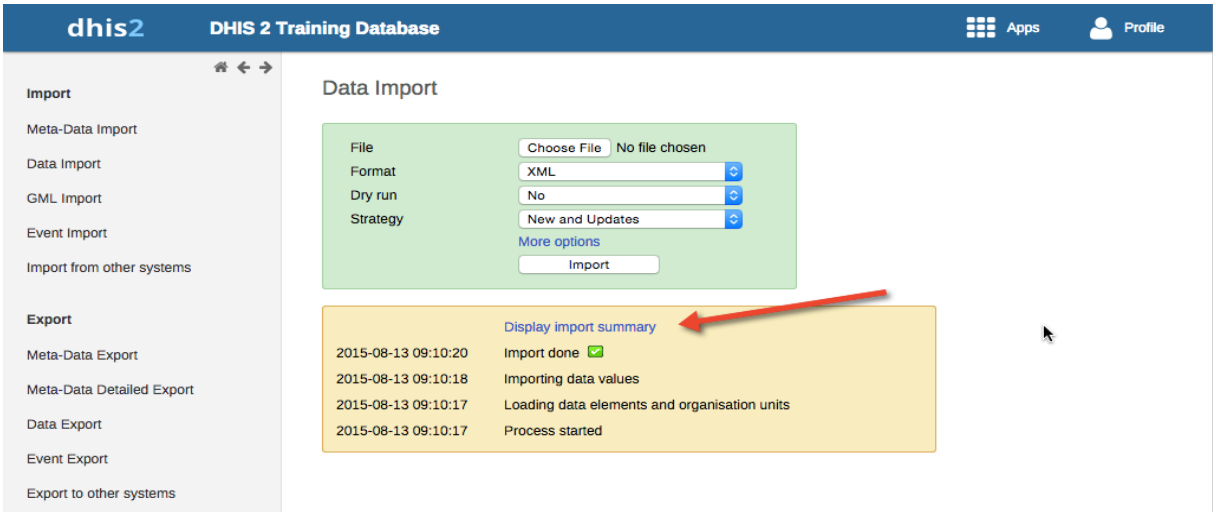


Figure 25 – The progress log with completed process steps after a 'Dry Run' has been initiated. Note the 'Display Import Summary' link.

Step 3b – Review Import Summary

The Import Summary provides two types of information:

1. Counts of the type of import status (i.e. 'imported', 'updated' or 'ignored'); and
2. A list of the 'conflicts' for 'ignored' rows of data.

Note: that the 'header row' in the CSV file (i.e. the row that included the names of the columns) will show up as part of the 'ignored' count and will have an associated 'conflict' (e.g. the dataelement label in cell A1 … being head label rather than the UID of a data element will generate a conflict *of 'Data Element not found or not accessible'*).

Note: In some instances of DHIS2, countries decide not to record 'zero' counts. If this is the case, values of zero in the import data will also be ignored, and generate a conflict message (e.g. '*Value is zero, and not significant…*').

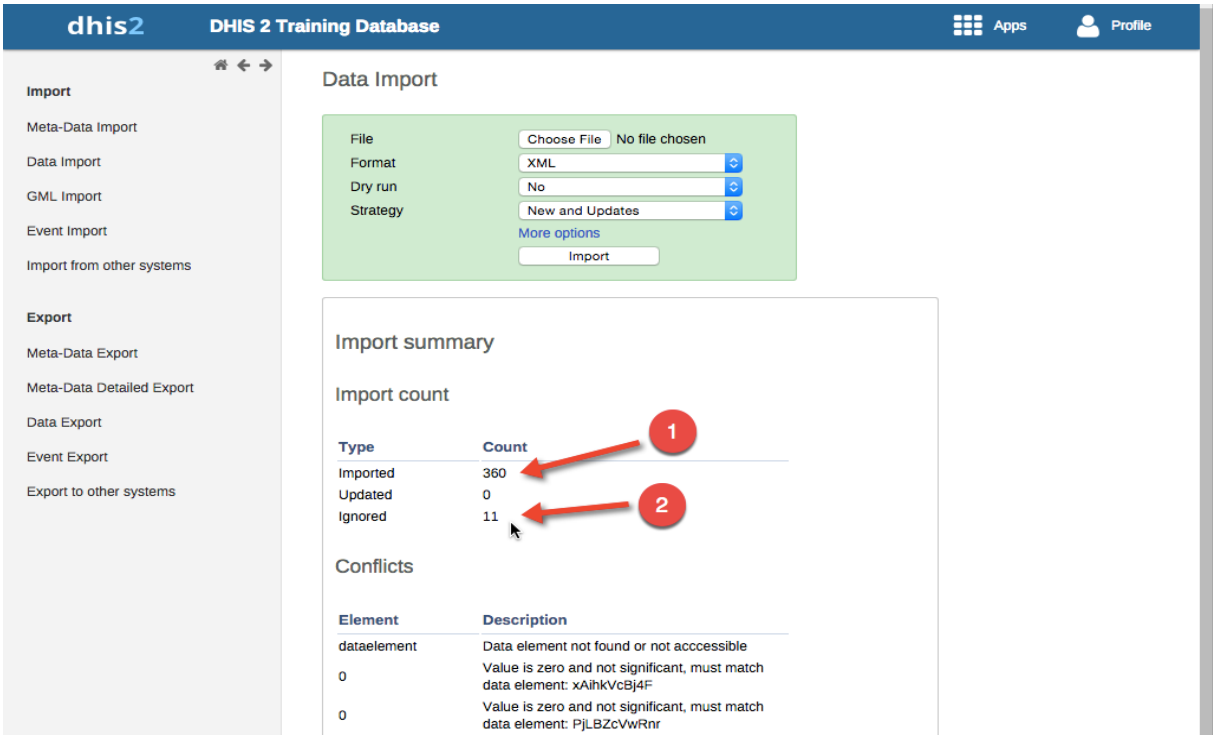


Figure 26 – The Import Summary of a 'Dry Run' showing 11 ignored rows, in this case pertaining to the header row and the zero values in the import data set.

Step 3c – Correct conflicts and repeat 'Dry Run'

If there are any other types of conflict (e.g. a 'not found' conflict message), then these should be investigated and corrected in the import file.

Repeat the 'Dry Run' process until you get a single 'ignored' conflict (the header row) and/or all conflicts are related to 'zero' values (if this is how the DHIS2 instance has been set to deal with 'zero' counts).

Step 4 – Run the 'Import Data' function for real

Once all conflicts are resolved, and you are happy with the 'Dry Run' results, repeat Steps 1 and 2 'above' but this time **set the 'Dry Run' message to 'No'**.

All progress status updates and import summary screens that are displayed will be identical to those outlined in Step 3 above.

Step 5 – Update the Analytics Tables

DHIS2 needs to 'generate' totals (aggregates) for the disaggregated data being imported. This is either run as a nightly process, or can be initiated manually. [2]

To be able to 'see and test' the data that has just been imported (Step 4 above), it will be necessary to either wait for the scheduled update or to initiate it manually.

The following figure highlights the progress report of manually updating the analytics tables from the 'Reports' App within DHIS2.

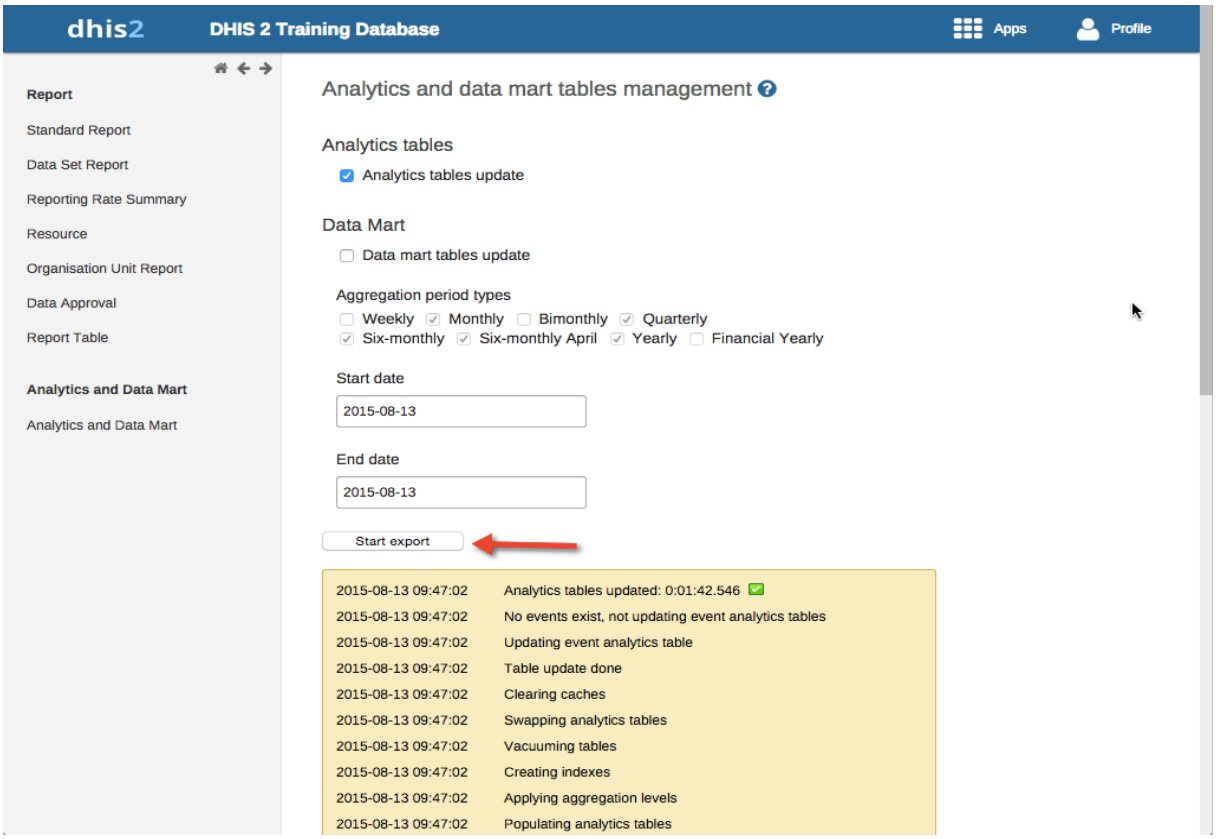


Figure 27 – Running the 'Analytics tables update' process to generate 'totals' or aggregate values based on disaggregated data loaded during import.

Reminder: This Guide is intended for DHIS2 Administrators that are already familiar with importing and managing a DHIS2 instance. Therefore, some of the detail is not included, as it is assumed that the user of this Guide knows where to go to invoke some of these functions.

[2] See http://dhis2.github.io/dhis2-docs/master/en/user/html/dhis2_user_manual_en_full.html

Step 6 – Verifying the data

It is important to verify that the expected data has been imported correctly. To do that, we have outlined how to use the 'Pivot Table' App to generate and display some of the data that has just been imported.

The verification is a 'spot test' of the data, and it is assumed that if the values are correct for the selected parameters, then it will be correct for all of them.

Step 6a – Select the Pivot Table App

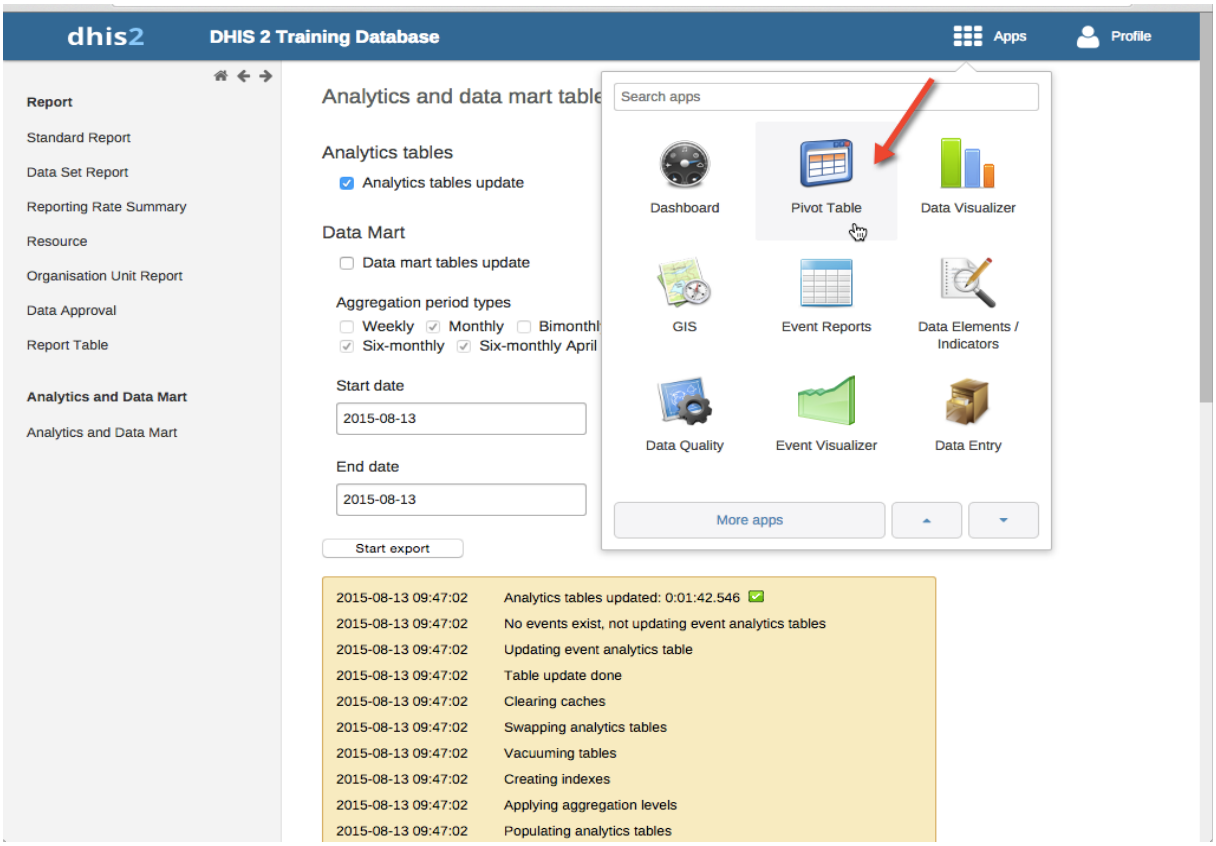


Figure 28 – Screenshot of selecting the 'Pivot Table' App, directly after completing Step 5 (UpdatingAnalytics Tables).

Step 6b – Select the three Pivot Table parameters (what, when, & where)

All DHIS2 Pivot Tables need three key parameters in order to generate a table of results – what (data element), when (the period), and where (the organisational level.

The following figures highlight capture this process (the figures are a little small, but the caption indicates the parameters selected).

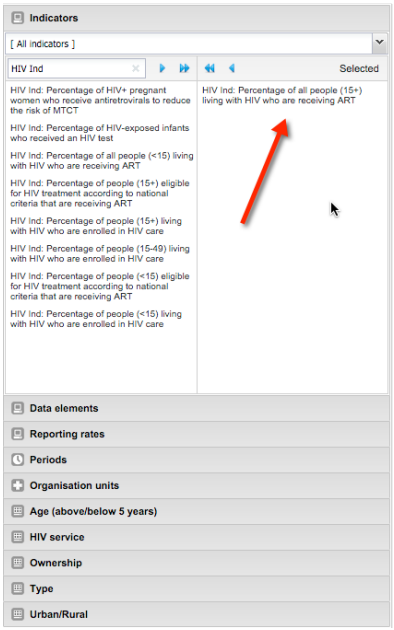


Figure 29 – What: 'UNAIDS: Estimated number of people (15+) living with HIV'

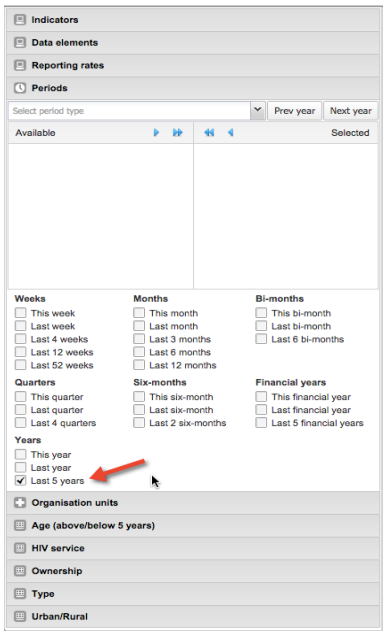


Figure 30 –When: 'Last 5 years'

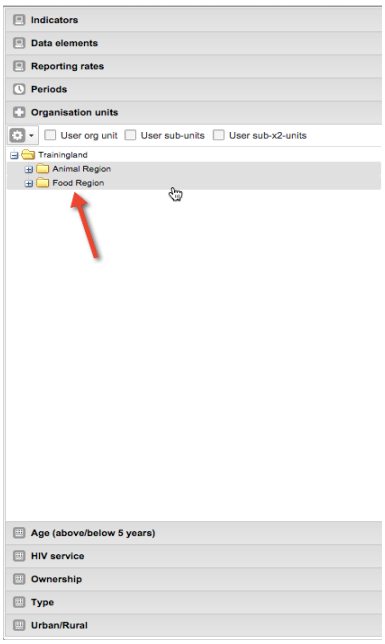


Figure 31 –Where: 'Animal Region and Food Region'

Step 6b – Generate the 'Pivot Table'

Once the 'What', 'When' and 'Where' parameters have been selected, click on the 'Update' menu item. This will result in a pivot table being generated.

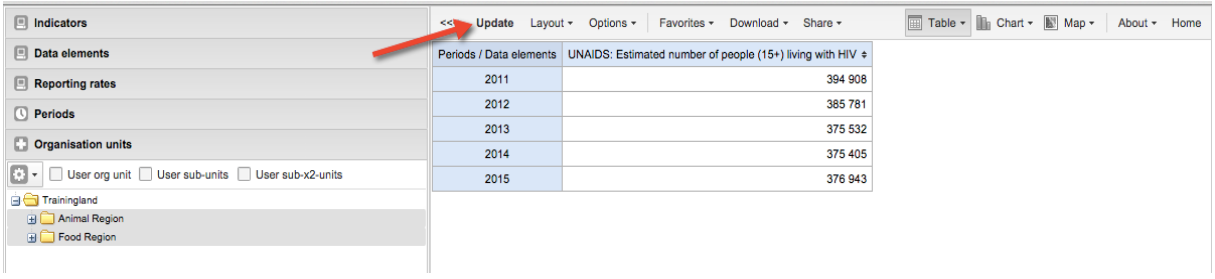


Figure 32 – Results table after clicking on the 'Update' menu link with the selected parameters… What: 'UNAIDS: Estimated number of people (15+) living with HIV', When: 'Last 5 years', and Where: 'Animal Region and Food Region'

Step 6c – Check the disaggregates (for gender and/or region)

As a final verification check, manipulated the layout of the pivot table to disaggregate by gender or organisational unit. The example below demonstrates disaggregation by gender.

Note: The displayed values should match the values you have in Spectrum for the given gender, period and sub-national region.

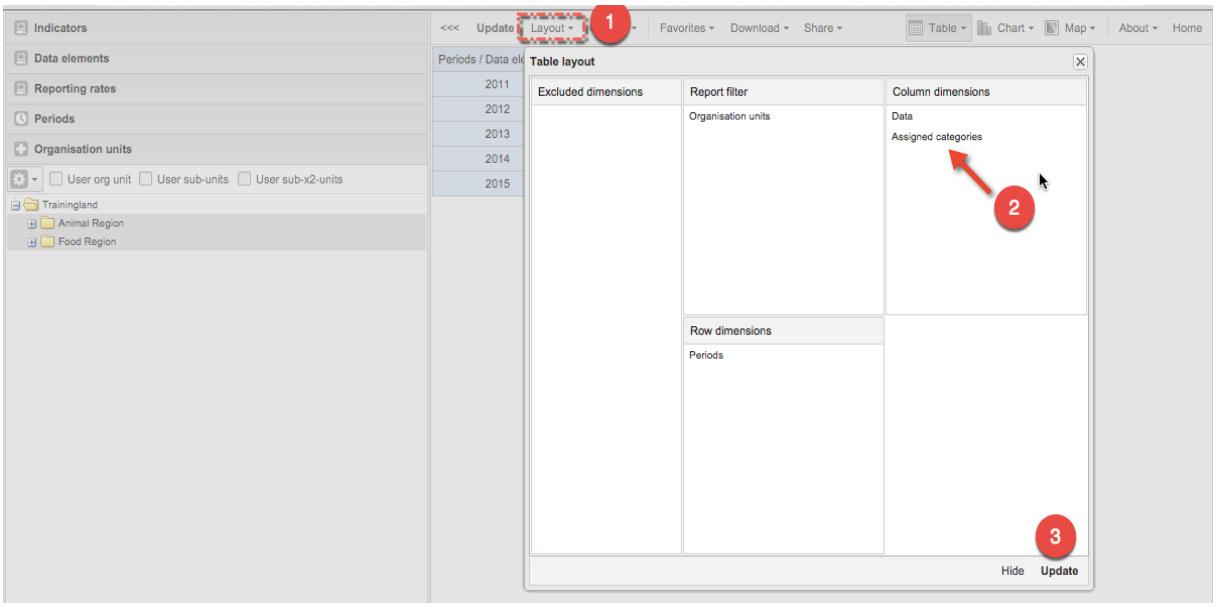


Figure 33 – Viewing Disaggregate Data: 1.) Click on the 'Layout' menu item; 2.) Drag 'Assigned categories' from 'Excluded dimensions' to 'Column dimensions'; 3.) Click on 'Update'.

Note: The resultant pivot table will include disaggregated columns for Male and Female for the selected data element IF the data element was one that included this disaggregation!

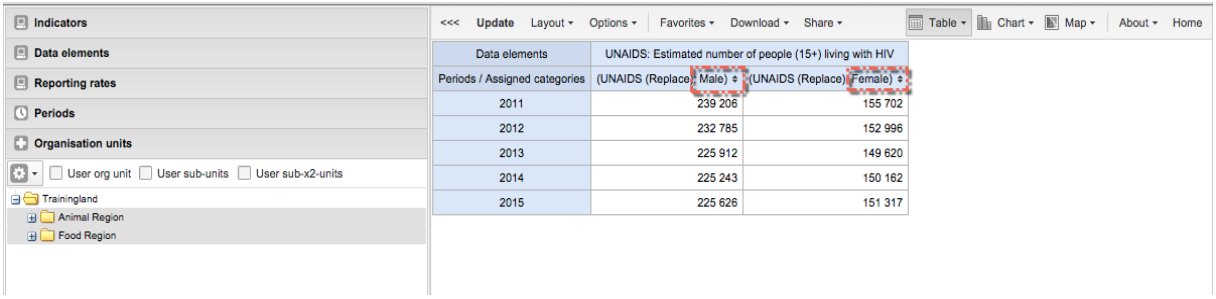


Figure 34 – Result table after applying disaggregation. Use as a verification check on the imported data.

Note: One could similarly 'drag' the 'Organizational Units' into the 'Row Dimensions' Area to further disaggregate by Regions. Such and example is also demonstrated below.

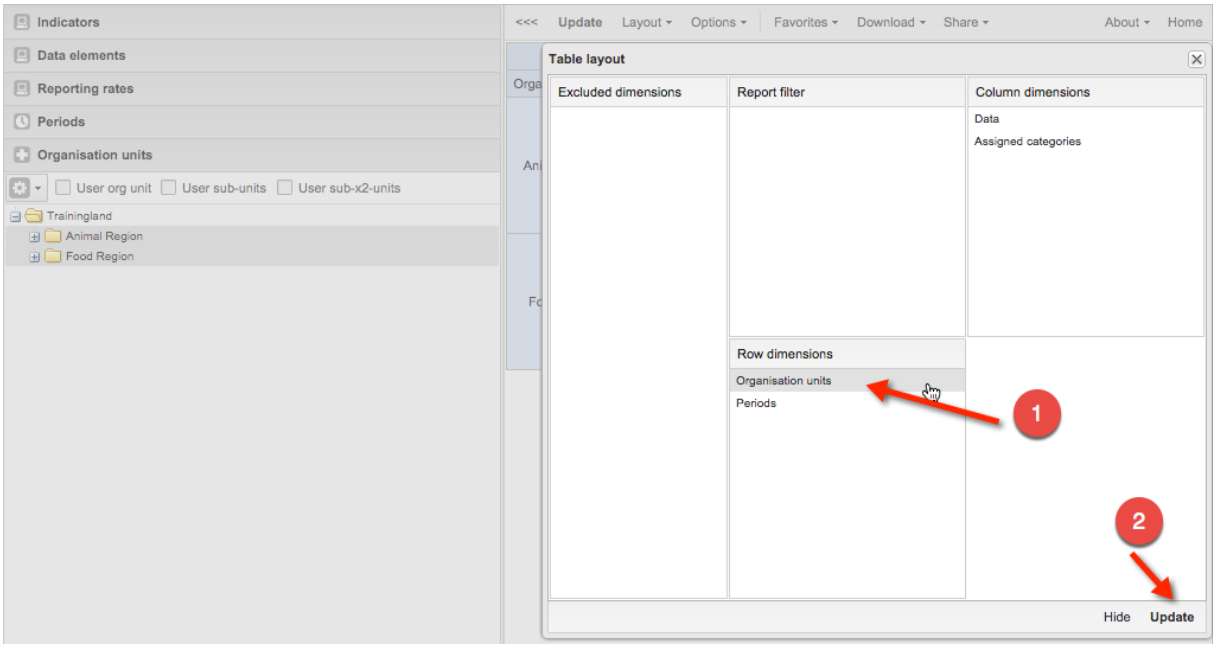
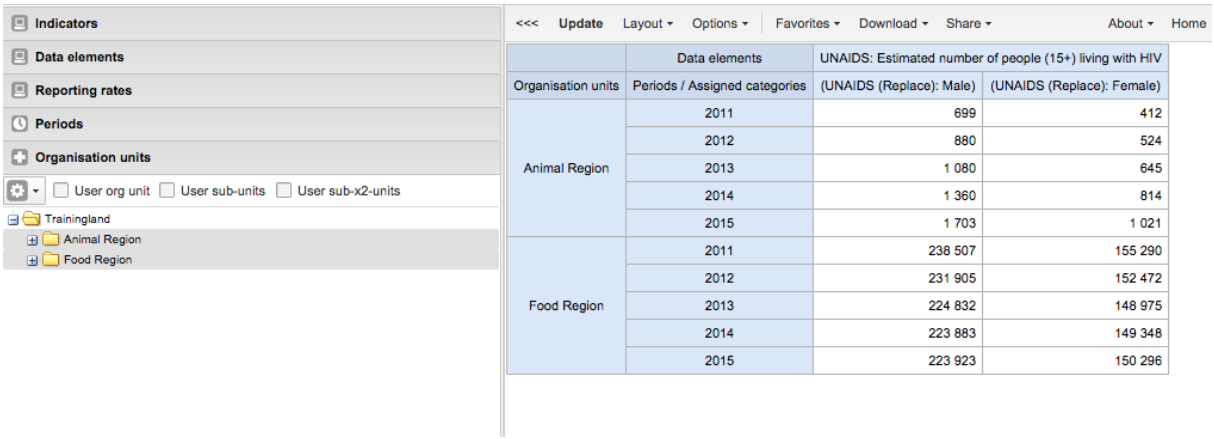


Figure 35 – Viewing Disaggregate Data: 1.) Drag 'Organisational units" from 'Report Filter" to "Row dimensions'; 2.) Click on 'Update'.

The resulting pivot table should now display disaggregation by both gender and subnational region.



	Data elements	UNAIDS: Estimated number of people (15+) living with HIV	
Organisation units	Periods / Assigned categories	(UNAIDS (Replace): Male)	(UNAIDS (Replace): Female)
Animal Region	2011	699	412
	2012	880	524
	2013	1 080	645
	2014	1 360	814
	2015	1 703	1 021
Food Region	2011	238 507	155 290
	2012	231 905	152 472
	2013	224 832	148 975
	2014	223 883	149 348
	2015	223 923	150 296

Figure 36 – Result table after applying further disaggregation. Use as a verification check on the imported data.