SPIRA SERVER FOR PRESCRIBING INFORMATION REPORTING AND ANALYSIS (SPIRA) USER GUIDE

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INTRODUCTION TO SPIRA

SPIRA is an online application designed to provide access to national prescribing data. There are three dashboards:

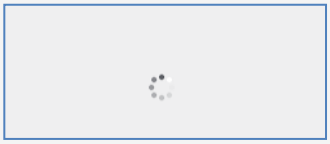
- National Prescribing Indicators
- Low Priority for Funding Medicines
- Biosimilars Efficiencies (restricted access)

GETTING STARTED: LOGGING IN AND LOADING THE DASHBOARD

SPIRA is accessed via the AWTTC website: https://www.awttc.org/spira

A note on performance
SPIRA is written in software called Tableau, so operates in a slightly different way from other online applications. The speed with which the first dashboard loads is governed by both the design of the system and network speed and bandwidth of individual health boards. To date, testing of the system has suggested that where dashboards are slow to load this is due to network issues rather than application design.

While the screen is loading you will see:



Can I "break" a dashboard/alter the data permanently?
No. The interactive report that is published online is intended for community use. No matter how many filters or changes you make, the original report and data will not be affected. Alternatively, you can click the 'revert all' button to clear any changes and view the original report.

Compatible web browsers
SPIRA can be used on the following browsers:

- Chrome on Windows, Mac, and Android 4.4 or newer
- Apple Safari on Mac and iOS 8.x or newer
- Internet Explorer 11 or newer
- Mozilla Firefox 3.x or newer on Windows and Mac

TABLEAU AS A DYNAMIC DATA DISCOVERY ENVIRONMENT

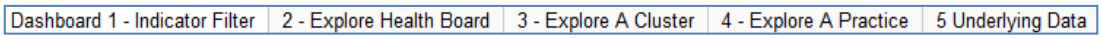
Tableau software comes with a range of inbuilt functionality to allow users to explore and interact with their data. While this functionality has been left intact, not all of it is appropriate in all circumstances. The tool bar with this additional functionality is found at the bottom of the screen.

Icon	Function	Relevant to SPIRA
Undo	Step you back through your mouse clicks	√
Redo	Steps you forward through your mouse clicks	√
Revert	Resets the dashboard	√
Refresh	Refreshes the data – this should not be necessary	X
Pause	Pauses data refreshes – this should not be necessary	X
Share	Allows you to email a link to a dashboard	X
Download	Download image or data files.	√

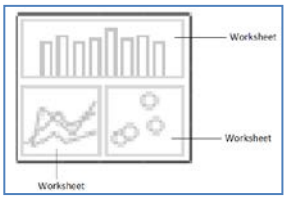
USING AN INTERACTIVE REPORT: FILTERS AND FUNCTIONS

Tabs: Interactive Reports have different tabs (similar to Excel), which contain different views of the same data. The Tabs have filters on them which allow you to drill down in to the data.

For example, the first tab on the National Prescribing Indicators dashboard – **Dashboard 1 – Indicator Filter** – is used to select an indicator of interest. That indicator is then used on the subsequent tabs. The second tab – **Explore a Health Board** – restricts the data on following tabs even further by limiting it to just the selected health board.



Each dashboard is made up of a number of worksheets. You will learn that some actions such as printing can be applied to a single worksheet on a dashboard or all worksheets on that dashboard. On some dashboards one “master” worksheet controls the actions of the other worksheets on the dashboard.

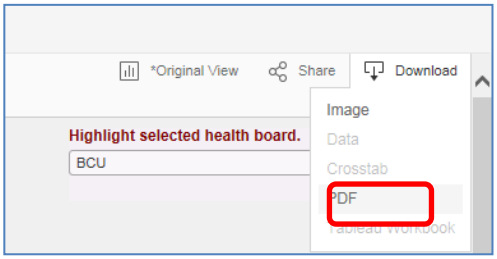


PRINTING FROM TABLEAU

Tableau allows you to export a dashboard or any of the worksheets on the dashboard as an image or write the image to PDF, enabling you to print the required information.

Step 1: Access the download menu

Click the download icon in the bottom right corner of the screen and click the PDF option.



Step 2: Exporting options

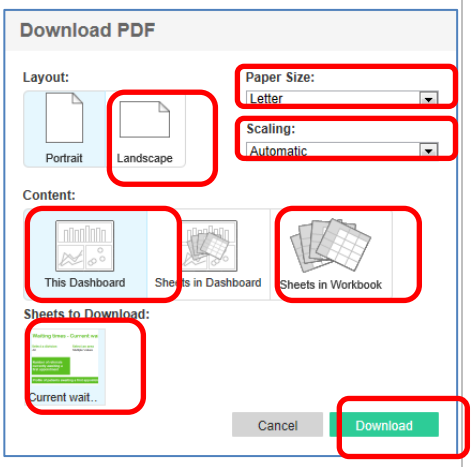
Keep the 'Paper Size' as Letter and 'Scaling' to Automatic.

Set the Layout to Landscape.

If you wish to export only the view you have on screen click 'This Dashboard'.

If you wish to export only one sheet from the Dashboard click 'Sheets in Dashboard'.

If you wish to export multiple views within the workbook click on 'Sheets in Workbook' and select the required views.



Once you have made your selection click on Download.

When prompted either Save or Open the exported PDF. This will then enable you to print the selected sheet/dashboard.

LOW PRIORITY FOR FUNDING MEDICINES DASHBOARD

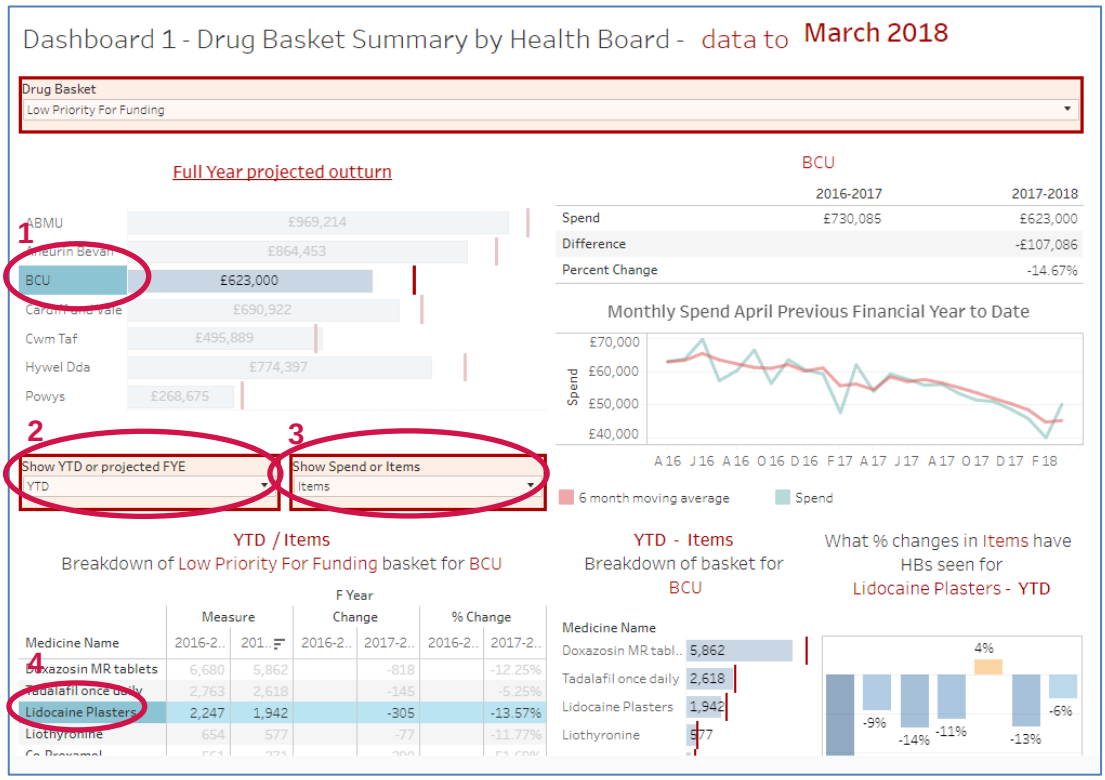
INTRODUCTION

The Low Priority for Funding Medicines dashboard provides national prescribing data for a basket of five medicines that have been identified as low priorities for funding in NHS Wales. The five medicines identified are:

- Co-proxamol
- Doxazosin MR tablets
- Lidocaine plasters
- Liothyronine
- Tadalafil once daily.

The data can be viewed in terms of items prescribed or associated spend, and are provided for the current year to date (YTD) or as a projection for the full year effect (FYE). Data are also provided to enable comparison with the previous year and can be viewed at health board, cluster and practice level.

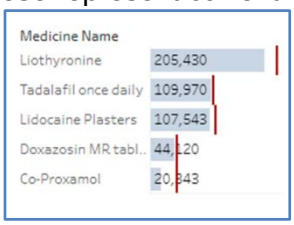
DASHBOARD 1 – DRUG BASKET SUMMARY BY HEALTH BOARD



Dashboard 1 displays low priority for funding medicines usage data across the health boards for the current and preceding financial years.

Selecting a health board in the top left hand histogram populates the rest of the dashboard with data for that health board (see **1** in above image).

Where histograms are displayed as blue bars and red lines, these represent current year activity and previous year's activity respectively.



The top half of the dashboard looks at full year projected outturn versus the actual outturn for the previous year.

The lower half of the dashboard allows for an analysis of the data in terms of:

- *Year to Date (YTD)* or *Full Year Effect (FYE)* (see **2** in above image)
- *Items* or *Spend* – (see **3** in above image).

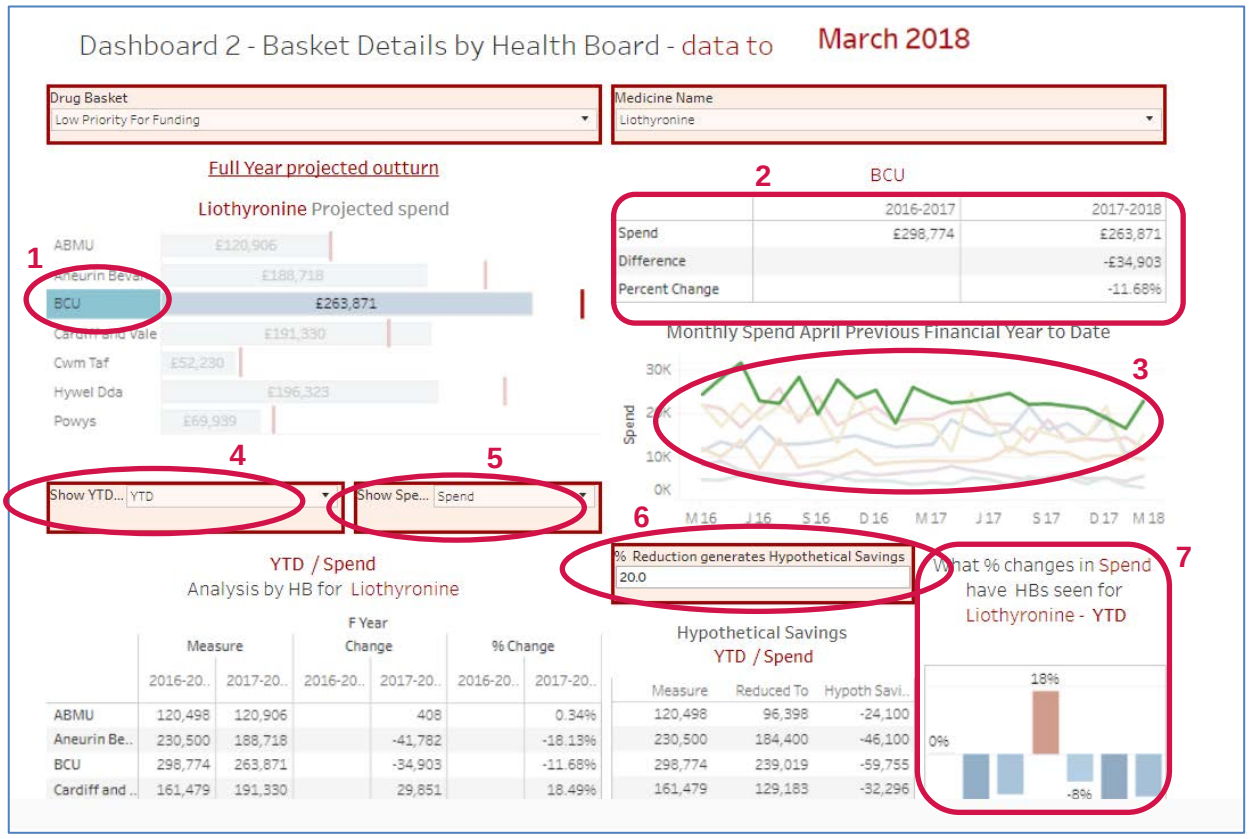
The FYE calculation **IS:** YTD + (Value for latest month * number of remaining months in the year)
The FYE calculation **IS NOT:** (YTD/Number of months passed in the year so far) * 12

The rationale is that as the medicines are part of a savings programme the most recent month's performance is felt to be more representative of future performance.

The bottom left data table gives the absolute figures, together with change and percentage change compared with the previous year. The histogram in the centre displays the same absolute figure data.

Selecting any one medicine in the data table (see **4** in above image) will populate an additional histogram in the bottom right, showing the percentage change there has been for that medicine across each health board based on the selected timeframe (YTD or FYE) and measure (items or spend) parameters.

DASHBOARD 2 – BASKET DETAILS BY HEALTH BOARD



Dashboard 2 allows you to compare use of a single medicine between health boards.

Selecting a health board in the top left hand histogram (see **1** in above image) will populate the table in the top right (see **2** in above image) and highlight the trend line for the health board in the run chart (see **3** in above image).

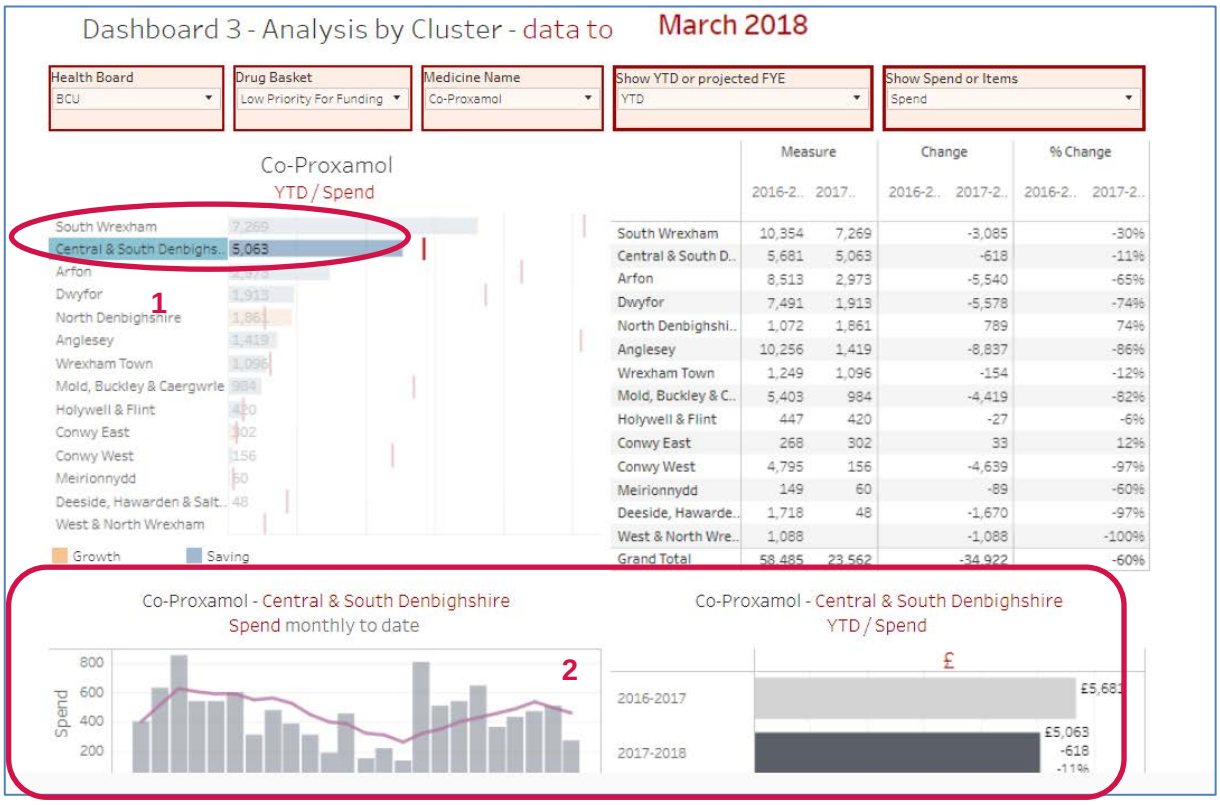
The lower portion of the dashboard allows for an analysis of the data in terms of:

- Year to Date (YTD) or Full Year Effect (FYE) (see **4** in above image)
- Items or Spend (see **5** in above image).

In order to see what saving may have been made if all health boards achieved a given percent reduction, you can input a desired percentage value in the '% Reduction generates Hypothetical Savings' field (see **6** in above image).

The histogram in the bottom right of the dashboard (see **7** in the above image) displays the percentage change seen in all health boards for the metrics selected in areas **4** (YTD or FYE) and **5** (Items or Spend) of the image above.

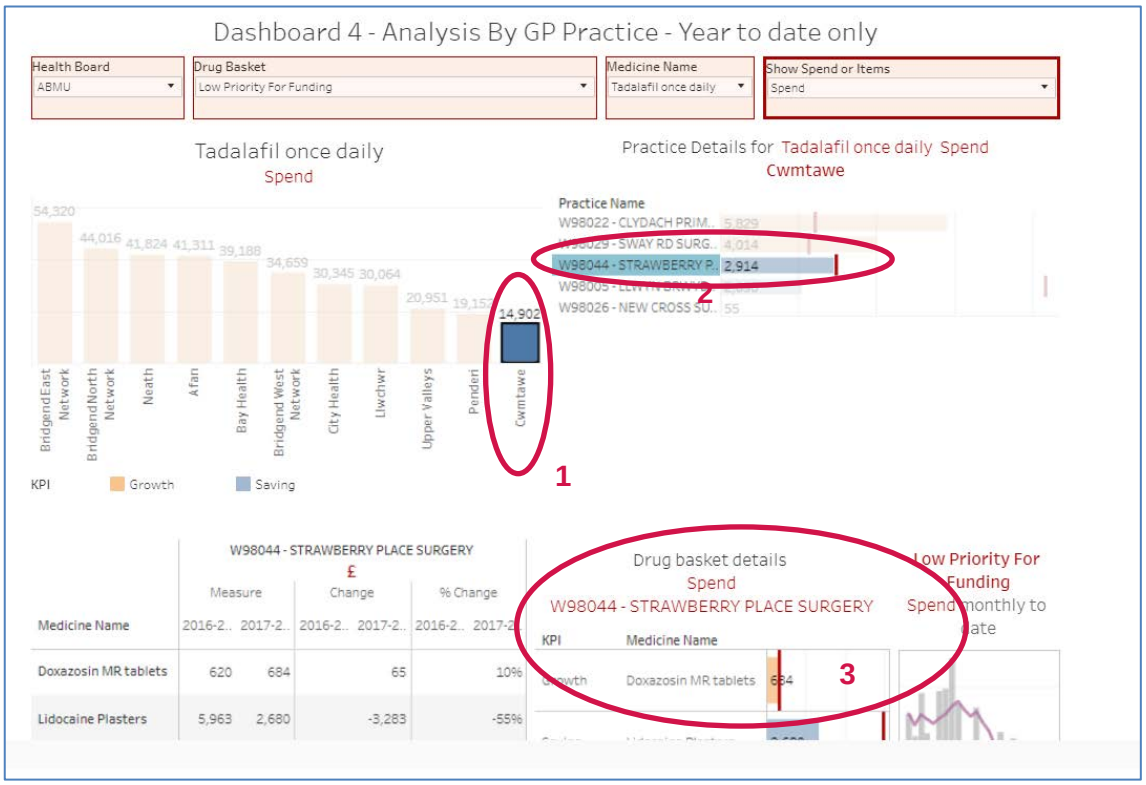
DASHBOARD 3 – ANALYSIS BY CLUSTER



Dashboard 3 allows you to look in more detail at year-on-year changes in the clusters within a health board.

Selecting a cluster in the top left histogram (see **1** in above image) will filter the graphs at the bottom of the dashboard (see **2** in above image) to display data for that cluster only. By default, these graphs will display data for all clusters combined.

DASHBOARD 4 – ANALYSIS BY GP PRACTICE

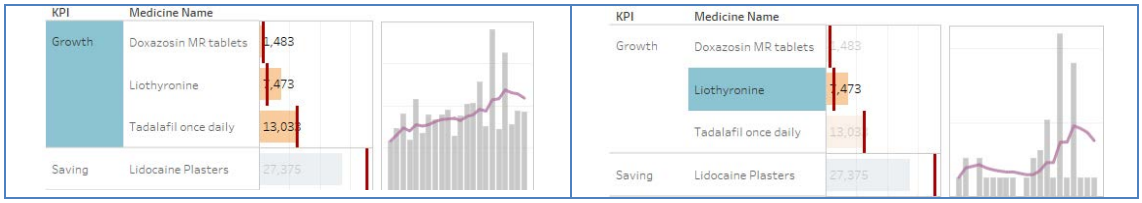


Dashboard 4 allows you to drill down and view data at the individual GP practice level.

Selecting any one cluster in the top left histogram (see **1** in above image) will populate the top right histogram, giving prescribing data relevant to the selected medicine for all practices in the selected cluster.

Selecting any one practice within the top right histogram (see **2** in above image) will populate the bottom half of the dashboard, and display data for that practice for all medicines within the Low Priority for Funding basket.

The histogram in the bottom right hand corner is included as a simple run chart. Highlighting a key performance indicator (KPI) section will show the run chart for all medicines in that section (see **3** in above image), while highlighting just a single medicine will show the run chart for just that medicine (see images below).



APPENDIX 1. DRUG BASKET DETAILS

Appendix 1 shows the drug basket details by health board, and enables checking of raw data against CASPA.

NATIONAL PRESCRIBING INDICATORS DASHBOARD

The National Prescribing Indicators dashboard provides access to national prescribing data; the current dataset available is for the National Prescribing Indicators 2016–2017 and 2017–2018.

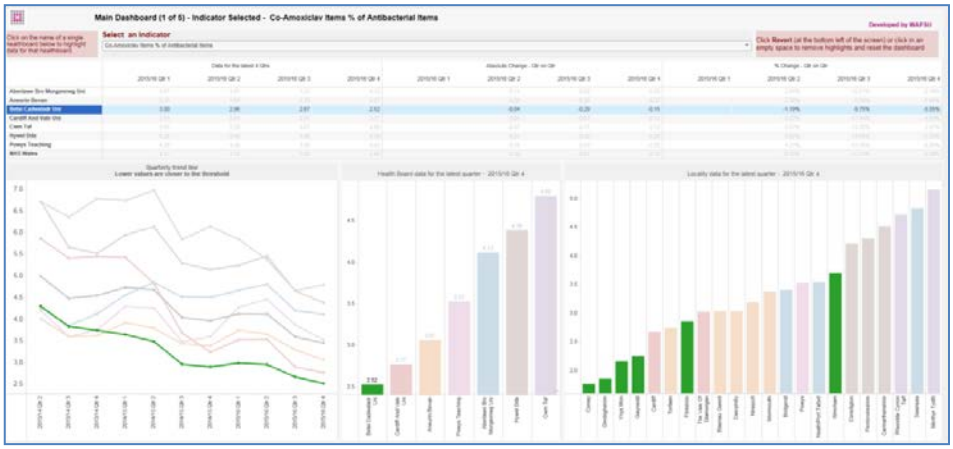
DASHBOARD 1 – INDICATOR FILTER

The main dashboard has four worksheets on it.

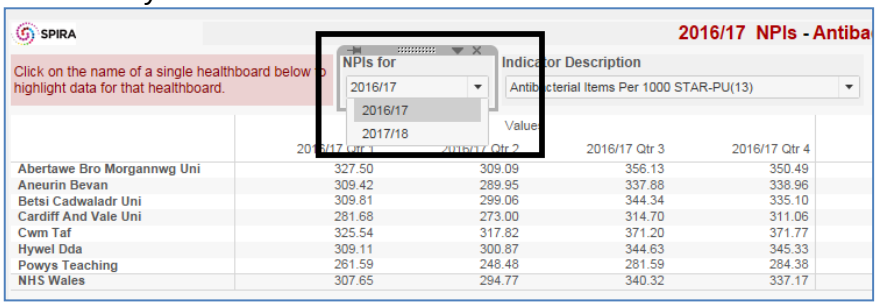
You can hover over data points to access additional information.

There are places where you can change the sorting of the data. For example hovering over the column headings (i.e. Qtr 1–4) in the left hand pane will cause the Sort icon to Appear. Clicking this icon will sort the data based on numeric values for the quarter selected. The default is alphabetic by health board. Remember: ← Undo will step you back through changes you have made.

Using the finger pointer to select a single health board on the top table will highlight details for just that health board.



Dashboard 1 now includes a new drop down which allows you to analyse indicators for a selected year.



DASHBOARD 2 – EXPLORE A HEALTH BOARD

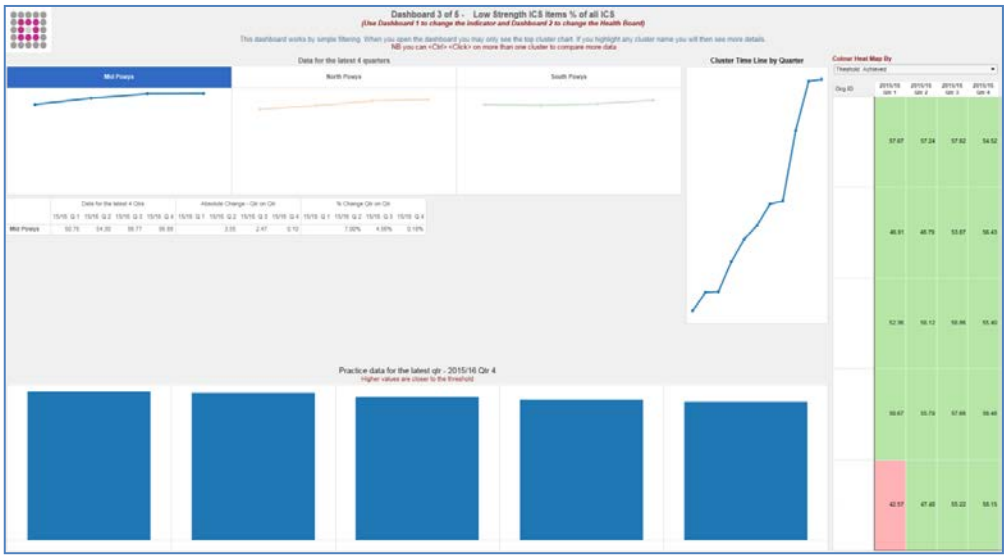
Dashboard 2 has been developed to provide a broad overview of an indicator within a health board. It contains six separate worksheets and allows the user to highlight one health board relative to all other health boards.

DASHBOARD 3 – EXPLORE A CLUSTER

Dashboard 3 allows you to look in detail at cluster and practice level data. When you open the dashboard you may just see trend lines for the clusters for the health board you have selected in Dashboard 2.

Clicking on a cluster name will populate the rest of the dashboard with cluster and practice level information.

The heat map below is coloured to show whether practices have met the threshold or not.

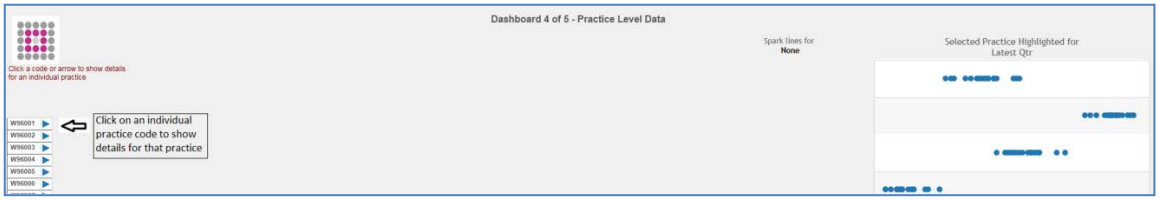


<Ctrl> clicking on more than one cluster name will populate the rest of the dashboard with clusters selected.

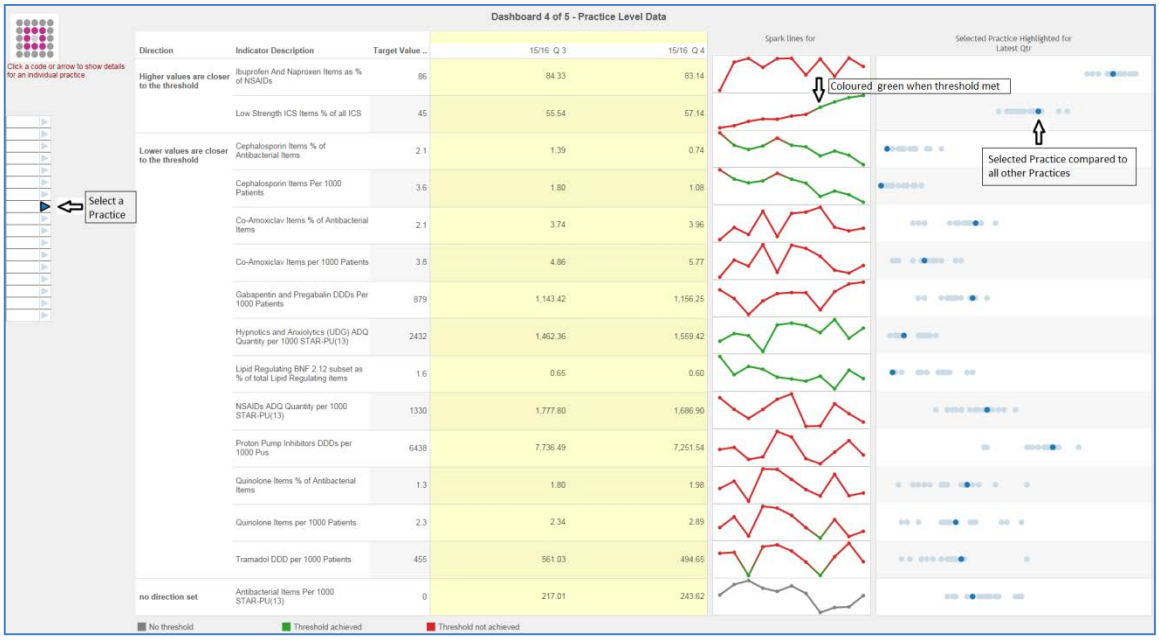
The heat map below is coloured by practice value, with green showing better performance.

DASHBOARD 4 – EXPLORE A PRACTICE

Dashboard 4 allows you to look in detail at all the indicator data for a single practice. When you open the dashboard you will see a list of practice codes on the left hand side. Click on the practice code you are interested in to populate the dashboard.



Dashboard 4 fully populated will appear as below:



Direction	Indicator Description	Target Value ..	15/16 Q 3	15/16 Q 4
Higher values are closer to the threshold	Ibuprofen And Naproxen Items as % of NSAIDs	86	84.33	83.14
	Low Strength ICS Items % of all ICS	45	55.54	57.14
Lower values are closer to the threshold	Cephalosporin Items % of Antibacterial Items	2.1	1.39	0.74
	Cephalosporin Items Per 1000 Patients	3.6	1.80	1.08
	Co-Amoxiclav Items % of Antibacterial Items	2.1	3.74	3.96
	Co-Amoxiclav Items per 1000 Patients	3.8	4.86	5.77
	Gabapentin and Pregabalin DDDs Per 1000 Patients	879	1,143.42	1,156.25
	Hypnotics and Anxiolytics (UDG) ADQ Quantity per 1000 STAR-PU(13)	2432	1,462.36	1,559.42
	Lipid Regulating BNF 2.12 subset as % of total Lipid Regulating items	1.6	0.65	0.60
	NSAIDs ADQ Quantity per 1000 STAR-PU(13)	1330	1,777.80	1,686.90
	Proton Pump Inhibitors DDDs per 1000 Pus	6438	7,736.49	7,251.54
	Quinolone Items % of Antibacterial Items	1.3	1.80	1.98
	Quinolone Items per 1000 Patients	2.3	2.34	2.89
	Tramadol DDD per 1000 Patients	455	561.03	494.65
no direction set	Antibacterial Items Per 1000 STAR-PU(13)	0	217.01	243.62

DASHBOARD 5 – ANALYSIS TO SUPPORT NOF

This new dashboard summarises all indicators for a single quarter.

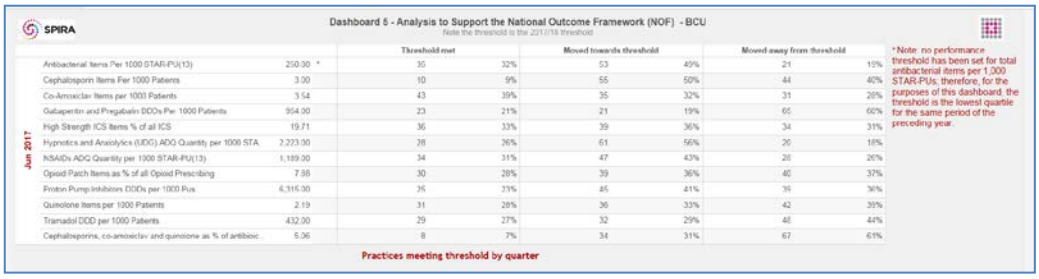
The dashboard shows the number of practices that have:

- met the threshold
- moved towards the threshold
- moved away from the threshold

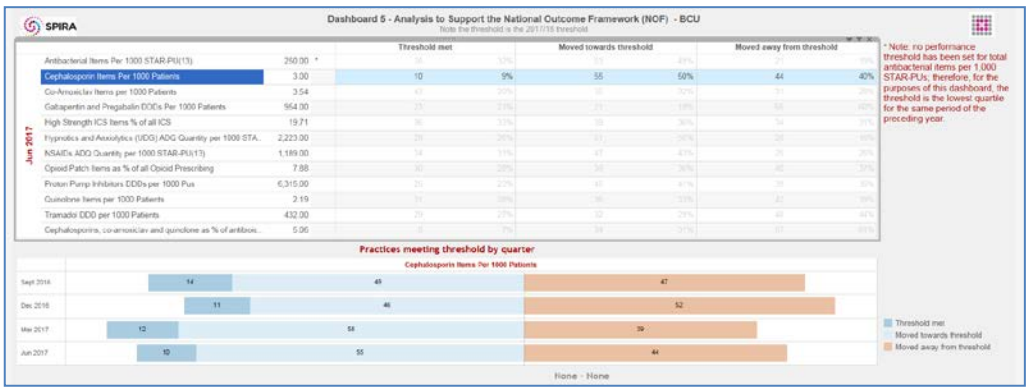
Note: no performance threshold has been set for total antibacterial items per 1,000 STAR-PUs; therefore, for the purposes of this dashboard, the threshold is the lowest quartile for the same period of the preceding year.

To support the National Outcomes Framework, cephalosporins, co-amoxiclav and fluoroquinolones as a percentage of antibiotic items have been combined into a single antibiotic measure. The threshold is the combined threshold of the three underlying indicators.

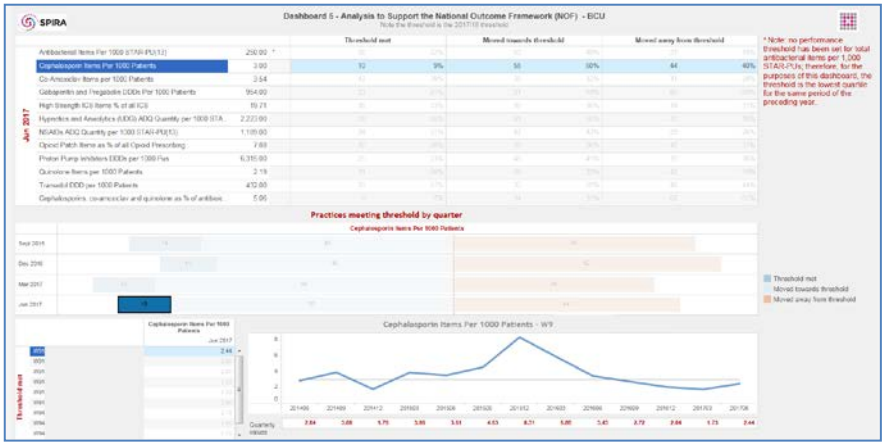
The top table will always show data for the latest quarter.



Selecting an indicator in the top table generates a second table that shows data for the preceding four quarters.



Selecting one bar of the chart gives a table of all practices represented by that bar, and selecting one practice in the table will show their trend line with quarterly values.



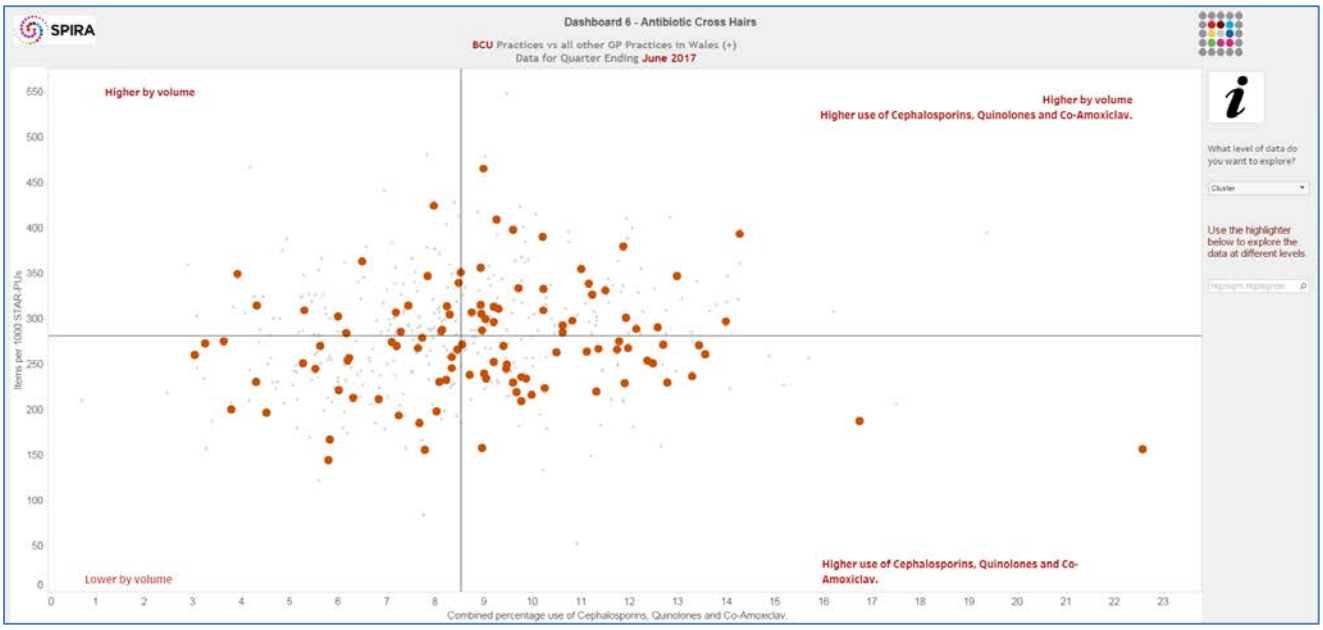
DASHBOARD 6 – ANTIBIOTIC CROSS HAIRS

This dashboard shows data for the latest quarter within four domains.

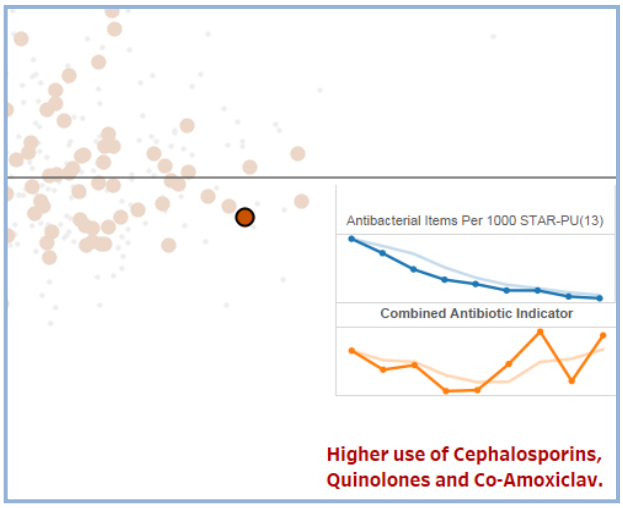
The Y axis is antibiotic items per 1,000 STAR-PUs.

The X axis is the combined percentage use of cephalosporins, co-amoxiclav and fluoroquinolones.

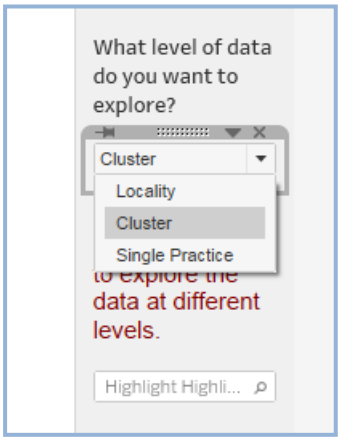
Each mark on the chart is a practice. The spots are practices in the health board selected in Dashboard 2; the small grey dots are practices in other health boards. Hovering over any mark will identify that practice.



Double clicking on a single practice will show quarterly progress data for that practice. The darker lines show actual values, while the paler lines have been smoothed to help remove seasonality and show a general direction of change.

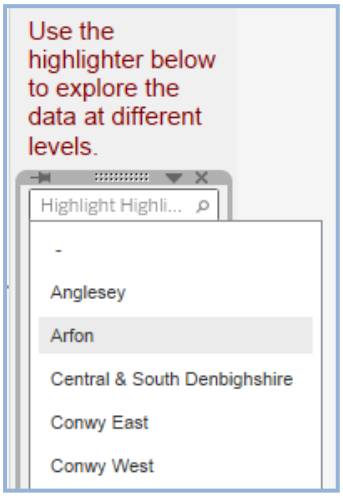


To the left of the chart are two drop downs.



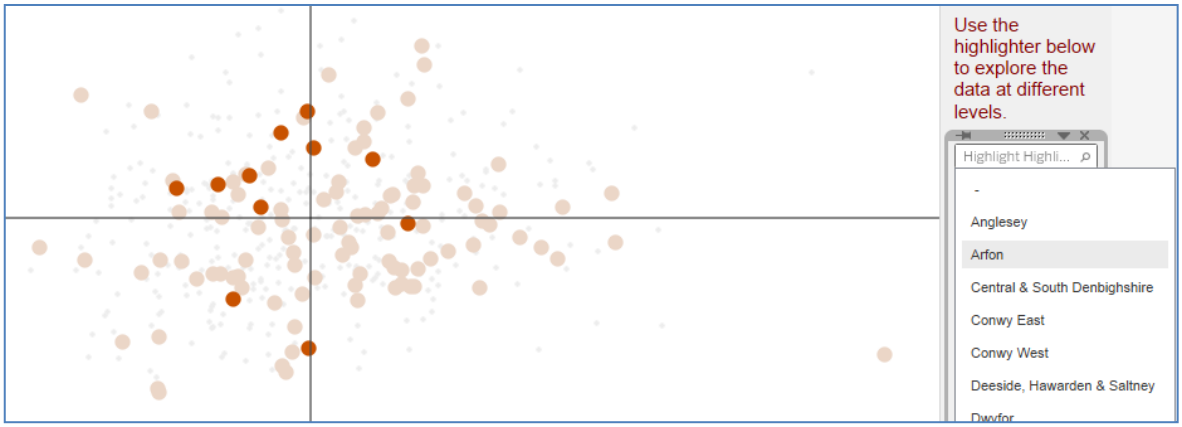
The first drop down allows you to define which level of data you would like to highlight:

- Locality
- Cluster
- Practice



The second drop down allows you to select which locality, cluster or practice you wish to highlight.

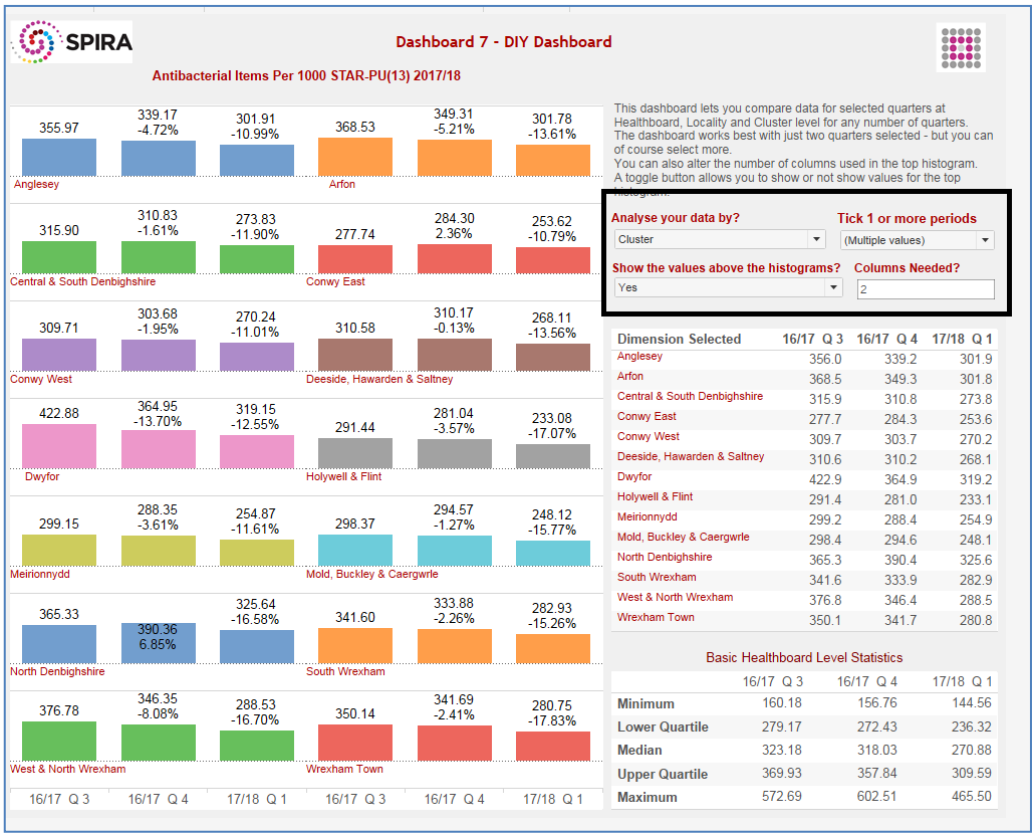
The chart below shows the highlighted area of data.



DASHBOARD 7 – DIY DASHBOARD

Dashboard 7 has been developed as a DIY dashboard to allow you to compare specific quarters.

There are four drop downs highlighted on the image below which control how the dashboard displays data.



Analyse your data by?

- Cluster
- Locality
- Health board

Tick 1 or more periods

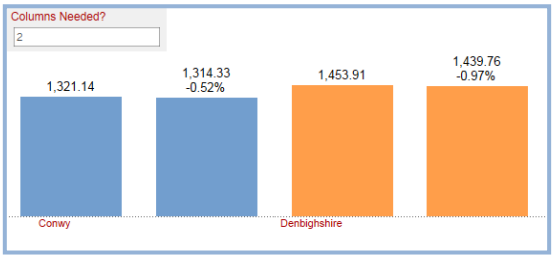
Select the quarters you wish to analyse.

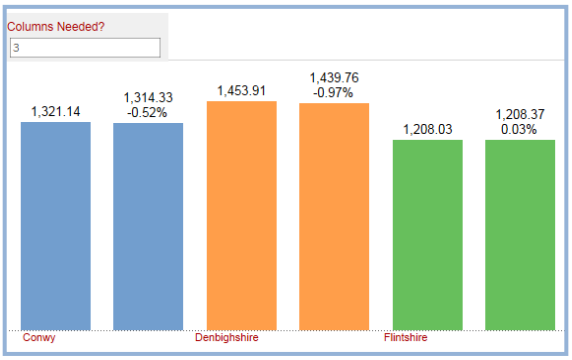
Show values above histogram?

A toggle button to show or hide the value and the percentage change from the previous quarter above the histogram bars.

Columns needed?

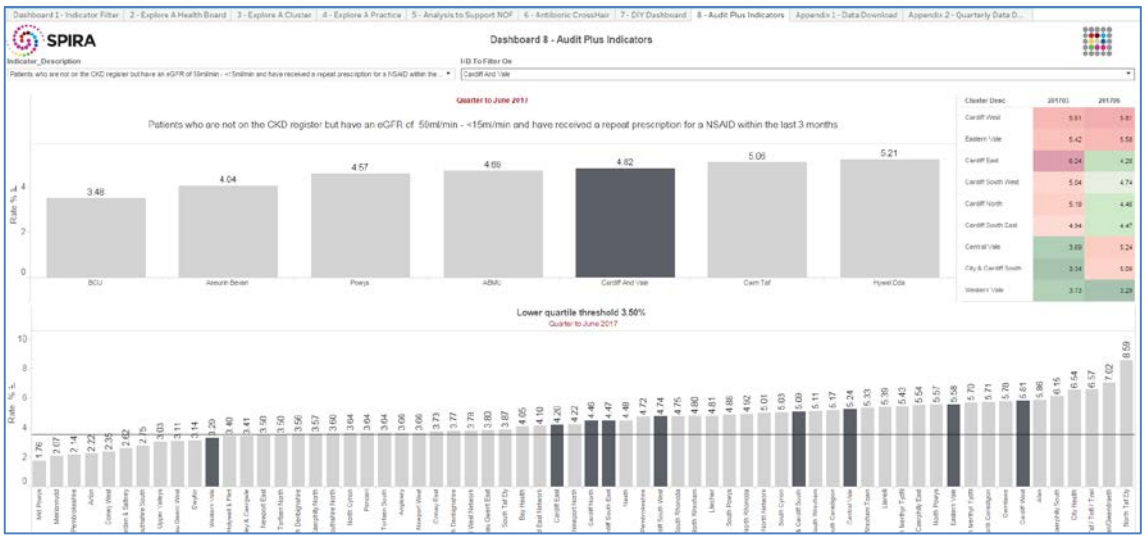
Specify the number of clusters or localities you would like to display per row.





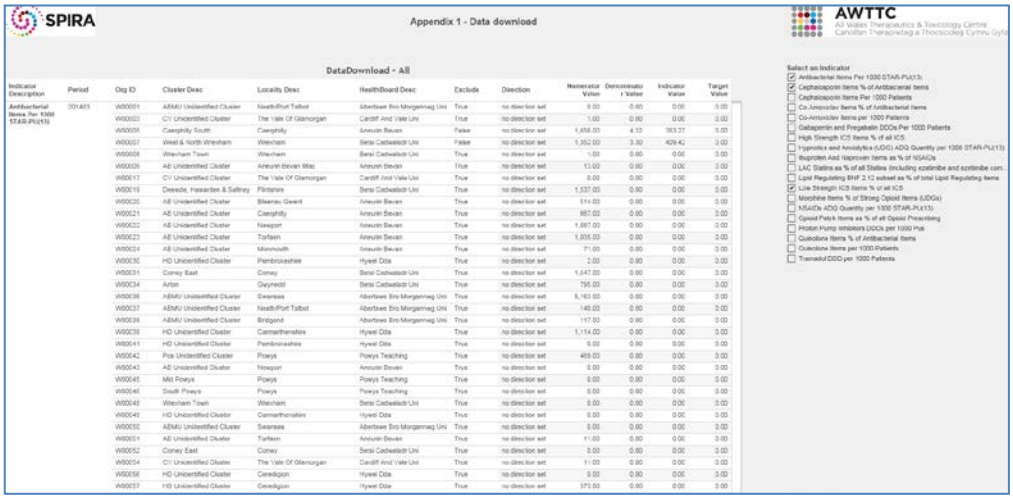
DASHBOARD 8 – AUDIT PLUS INDICATORS

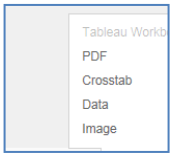
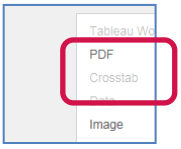
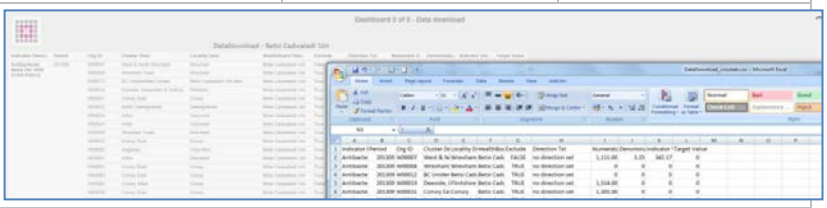
Dashboard 8 shows data for the Audit Plus indicators and allows you to filter by health board.



APPENDIX 1 – DATA DOWNLOAD

If you are clicking on many parts of a dashboard and then choose download you will have an option to not only download an image but also the data. Downloading the data which supports a worksheet may not be particularly useful, so a special data download tab has been developed. This allows you to pull out practice level data for selected indicators. The data are tagged with the practice cluster and locality to allow for easy summarising.

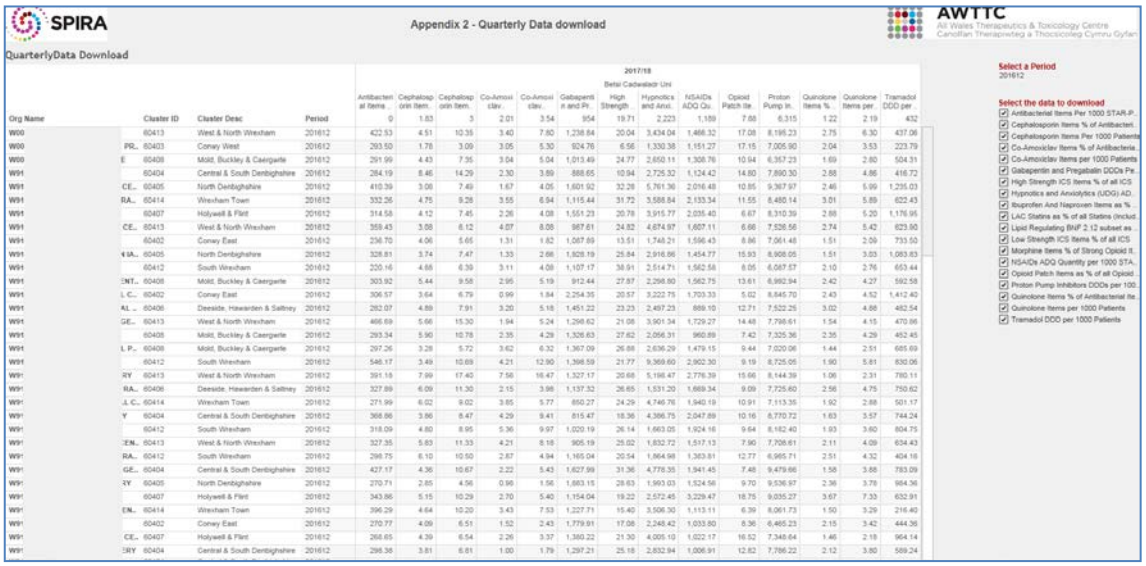


Step 1: Access the download menu First click somewhere on the worksheet and then select the download menu.		*If the Crosstab and Data options are greyed out you have not clicked in the worksheet.*	
Step 2 Select Crosstab to export to Excel.			
Or Select Data to download as a text file.			

Download column name		Comment
Indicator Description	Antibacterial Items Per 1000 STAR-PU(13)	
Period	201603	Dated as Qtr end - so 201603 is Qtr 4 for 2015/16
Org ID	W00007	
Cluster Desc	West & North Wrexham	
Locality Desc	Wrexham	
HealthBoard Desc	Betsi Cadwaladr Uni	
Exclude	FALSE	If TRUE = not a GP Practice but data included in Cluster, Locality and Health Board aggregate figures
Direction Txt	no direction set	The threshold directions
Numerator Value	1,111.00	
Denominator Value	3.25	
Indicator Value	342.17	
Target Value	0	

APPENDIX 2 – QUARTERLY DATA DOWNLOAD

Appendix 2 is a new addition, which gives all the indicator data for a selected quarter. Data can be downloaded by clicking on the data table you require, then clicking the download button at the bottom of the screen. Select ‘Crosstab’ and this will download an Excel spreadsheet of the data.

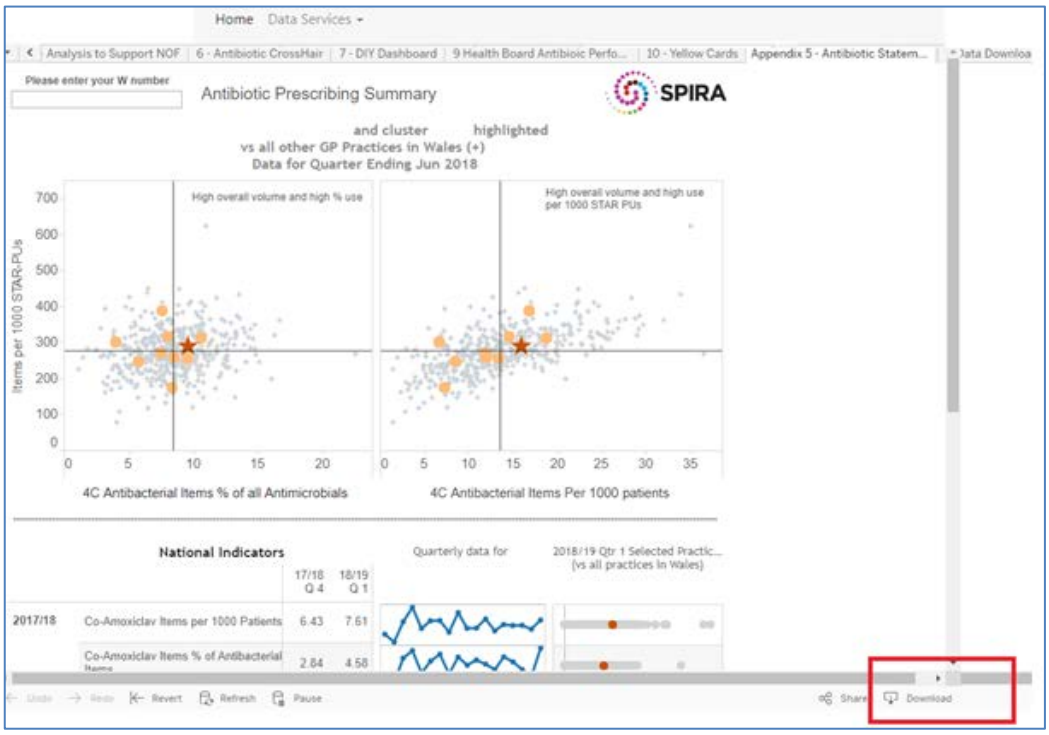


APPENDIX 3 – AUDIT+ DATA

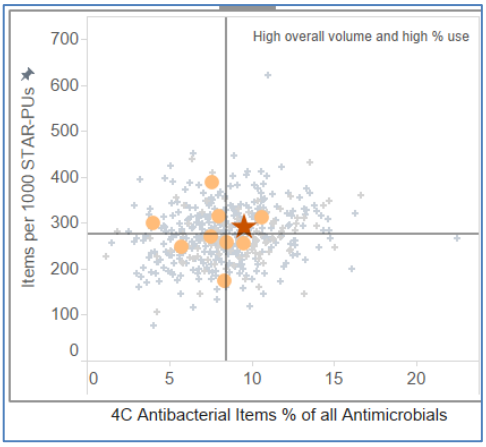
APPENDIX 4 – ANTIBIOTIC THRESHOLDS

APPENDIX 5 – ANTIBIOTIC STATEMENT

The Antibiotic Statement is designed to be downloaded as an A4 pdf. To do this click the download button on the bottom right of the screen (red box below)



The aim of the crosshair is to place practices into one of four quadrants based on their relationship to the All Wales means, which are shown as the solid lines (or crosshairs).



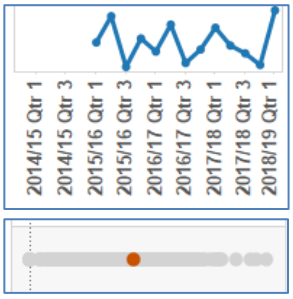
Your practice is a red star. Other practices in your cluster are pale orange circles. All other practices in Wales are small grey crosses.

In the chart to the right, practices in the bottom left quadrant are lower prescribers of antibiotics and lower users of the 4Cs as a percentage of their total antibiotic usage.

Practices in the top left quadrant are higher prescribers of antibiotics, but their use of the 4Cs as a percentage of their total antibiotic use is below the national average. Such practices may need to work on reducing their overall volume on prescribing.

National Prescribing Indicator and Local Comparator data are shown for the latest two quarters.

2018/19	Antibacterial Items Per 1000 STAR-PU(13)	397.63	292.51



The spark lines are used to show a general trend in prescribing over preceding quarters.

The simple bars allow you to see where your practice – highlighted as a red dot – sits against all other practices in Wales which appear as the grey overlapping dots.

In both of these charts, scales have been removed as what is important is trend or relative position rather than absolute values.

BIOSIMILAR EFFICIENCIES DASHBOARD

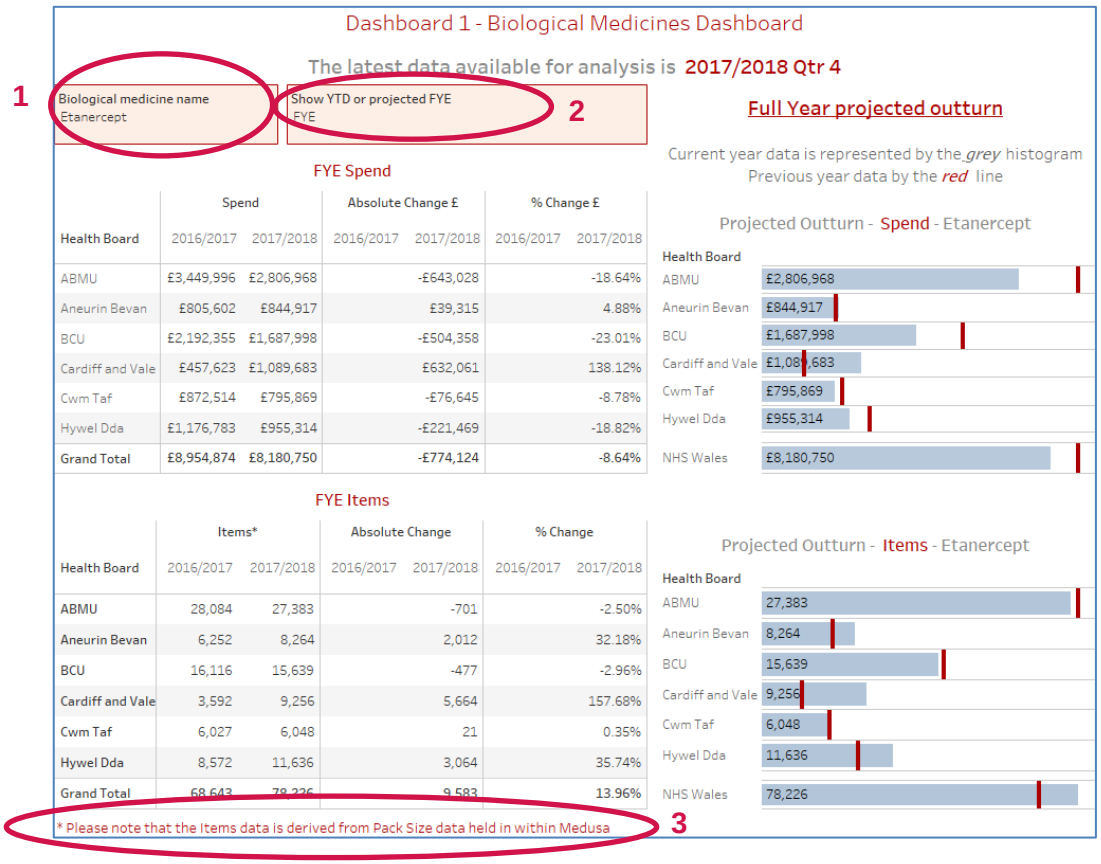
INTRODUCTION

Biosimilar medicines have been developed to be highly similar and clinically equivalent to existing biological medicines. Biological medicines account for a significant expenditure within NHS Wales and as such are seen as a potential cost efficiency target. The biological medicines dashboard provides national prescribing data for a basket of biological medicines that are currently part of the National Prescribing Indicators and the National Outcomes Framework.

The data can be viewed in terms of items prescribed or associated spend, and are provided for the current year to date (YTD) or as a projection for the full year effect (FYE).

The majority of the data included in these dashboards come from the Medusa data warehouse which records the issues of medicines within the secondary care setting in Wales. Medusa is generally used to undertake comparative financial analysis. It has been less widely used to undertake comparative volume analysis. Appendix 1 provides explanation and gives a worked example of how items are calculated.

DASHBOARD 1 – BIOLOGICAL MEDICINES DASHBOARD



Dashboard 1 compares expenditure and item usage for a selected biological medicine. The tables on the left show spend and items, comparing the current and preceding financial year and showing absolute and percent change.

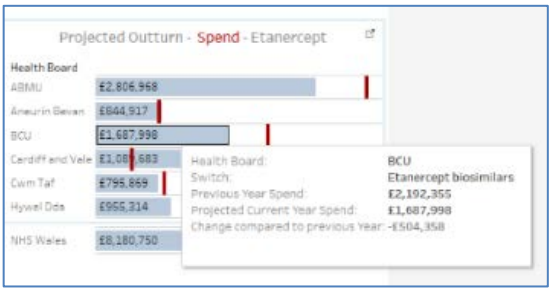
Selecting a biological medicine using the top left hand drop down populates the rest of the dashboard with data for that medicine (see **1** in above image).

There are two views of the data: *Year to Date (YTD)* or *Full Year Effect (FYE)* (see **2** in above image).

The FYE calculation **IS:** YTD + (Value for latest month * number of remaining months in the year)
The FYE calculation **IS NOT:** (YTD/Number of months passed in the year so far) * 12

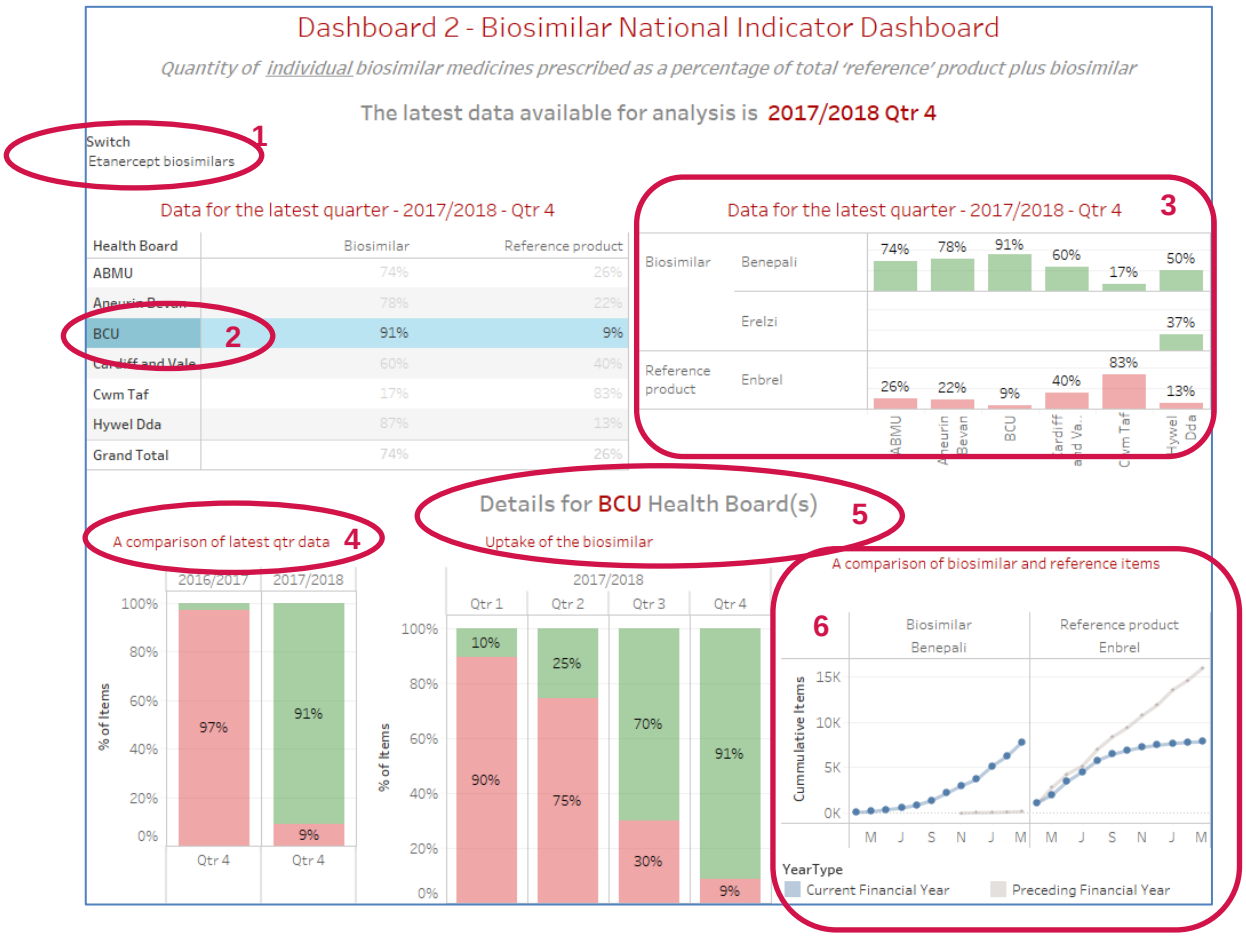
The rationale is that if the medicines being analysed are part of a substitution programme then the most recent month's performance is likely to be most representative of future performance.

Where histograms are displayed as blue bars and red lines, these represent current year activity and previous year's activity respectively. Hovering over a mark will display a tool tip which contains more information.



The top half of the dashboard shows spend data while the bottom half shows items. Note **3** on the dashboard is a reminder that the item data is derived from quantity and pack size as described in detail in Appendix 1.

DASHBOARD 2 – BIOSIMILAR NATIONAL INDICATOR DASHBOARD



Dashboard 2 supports the biosimilar National Prescribing Indicator which looks at the percentage uptake of biosimilar versus reference product measured in items. Please see Appendix 1 for details of the item calculation.

The dashboard allows you to compare use of a single medicine between health boards. Drop down **1** allows you to select the biologic you are interested in.

Selecting a health board in the top left hand table (see **2** in above image) will filter the bottom half of the dashboard. Clicking on the words 'Health Board' in the top left hand table will show combined data for all health boards in the bottom half of the dashboard.

3 in the image above shows the percentage uptake of both the biologic and reference product for all health boards for the latest quarter.

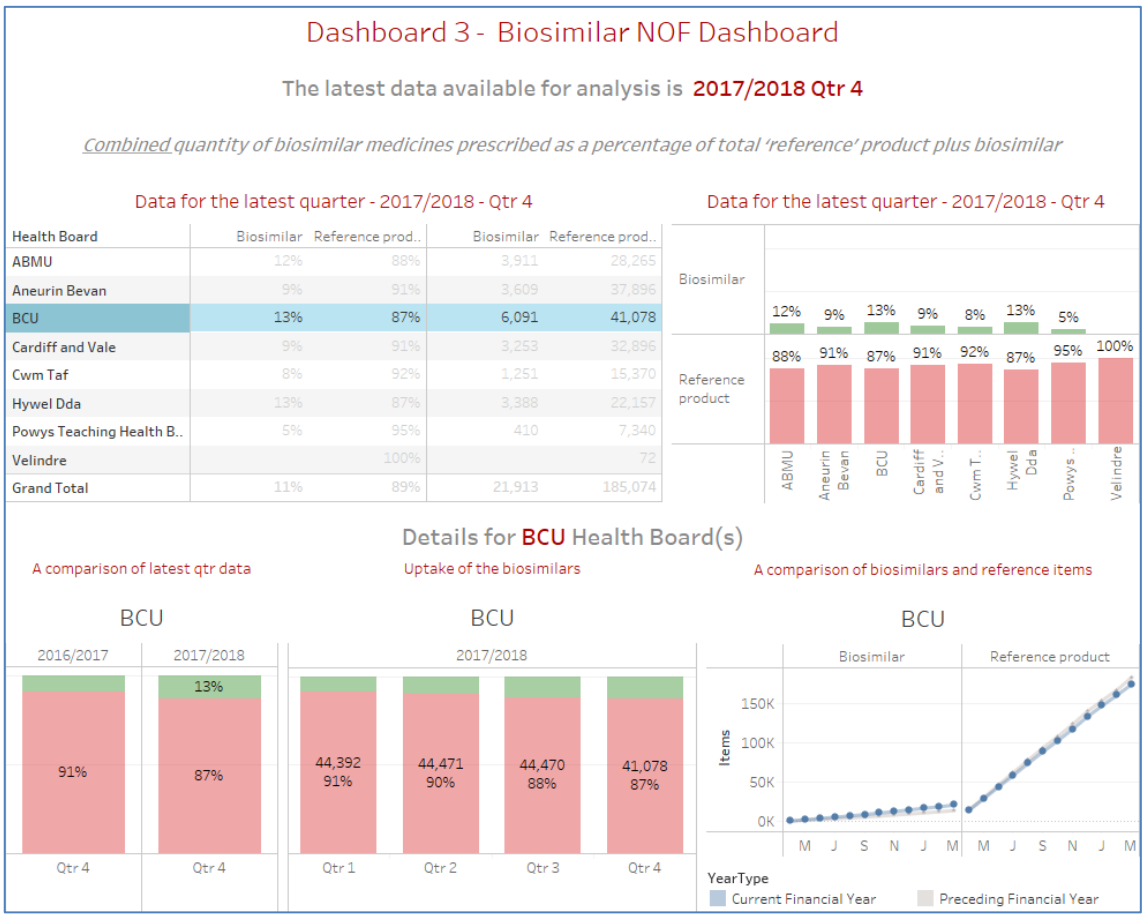
4 in the image above compares the latest quarter of this financial year with the equivalent quarter of the previous financial year.

5 in the image above gives a run chart of data for the latest four quarters.

6 in the image above shows the preceding year's cumulative use of the biosimilar and reference product (grey line) versus current YTD actual and projected use (blue line).

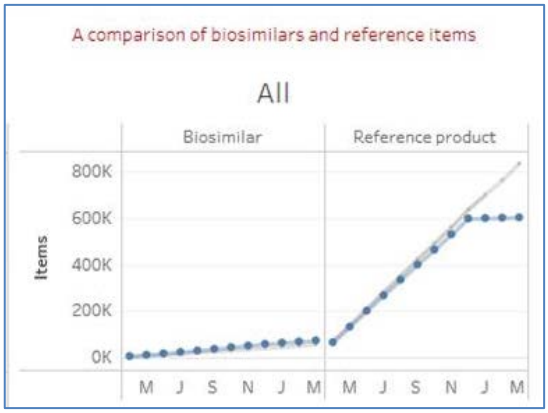
Please note these dashboards include primary and secondary care data. The availability of primary care data will always be approximately two months behind that of the secondary care data.

DASHBOARD 3 – BIOSIMILAR NOF DASHBOARD



Dashboard 3 follows the form and functionality of Dashboard 2. The only difference is that it shows a combined view of the biosimilars versus reference products. The dashboard is therefore combining primary and secondary care data.

The chart below was generated after quarter 4 Medusa data were available but before quarter 4 CASPA data had been released. The current year cumulative chart for the reference product appears to tail off because of the missing CASPA data.



APPENDIX 1 – ITEM CALCULATIONS IN MEDUSA FOR ALL HEALTH BOARDS

The Medusa data warehouse does not provide an equivalent to the 'items' measure used by CASPA. Instead Medusa measures are based on the number of issues, where, for example, having a number of issues equal to 1 could be a quantity of 1 tablet or 1 box of 28 tablets. Therefore, to enable analysis of prescribing volume in both primary and secondary care on SPIRA dashboards, pack size also has to be factored in. A comparative volume measure termed a ***Dose*** has been generated, which is used as an equivalent to items in SPIRA dashboards. Dose in this instance is simply the product of the number of issues and actual pack size (see table below).

Medicine name	Pack size description	Strength	Number of issues	Actual pack size	Dose calculation	Doses
Etanercept	1 prefilled syringe	25 mg	1	1	1 * 1	**1**
Etanercept	4 x 1 prefilled syringe	25 mg	1	4	1 * 4	**4**
Etanercept	4 x 1 prefilled syringe	25 mg	6	4	6 * 4	**24**

The calculations are partially automated through the use of a number of manually maintained lookup tables which extract numeric data from the pack size description text fields in Medusa. While every care has been made with the preparation of these lookup tables there is obviously scope for error, especially when dealing with large data sets. These data should therefore be viewed with caution. However, errors that occur in this way would be applied consistently across data for all health boards with identification and rectification being equally applied.