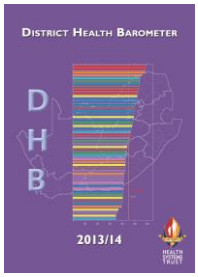


Step-by-Step Guide to using the DISTRICT HEALTH BAROMETER (DHB) 2013/14 Data File, Maps and Graphs

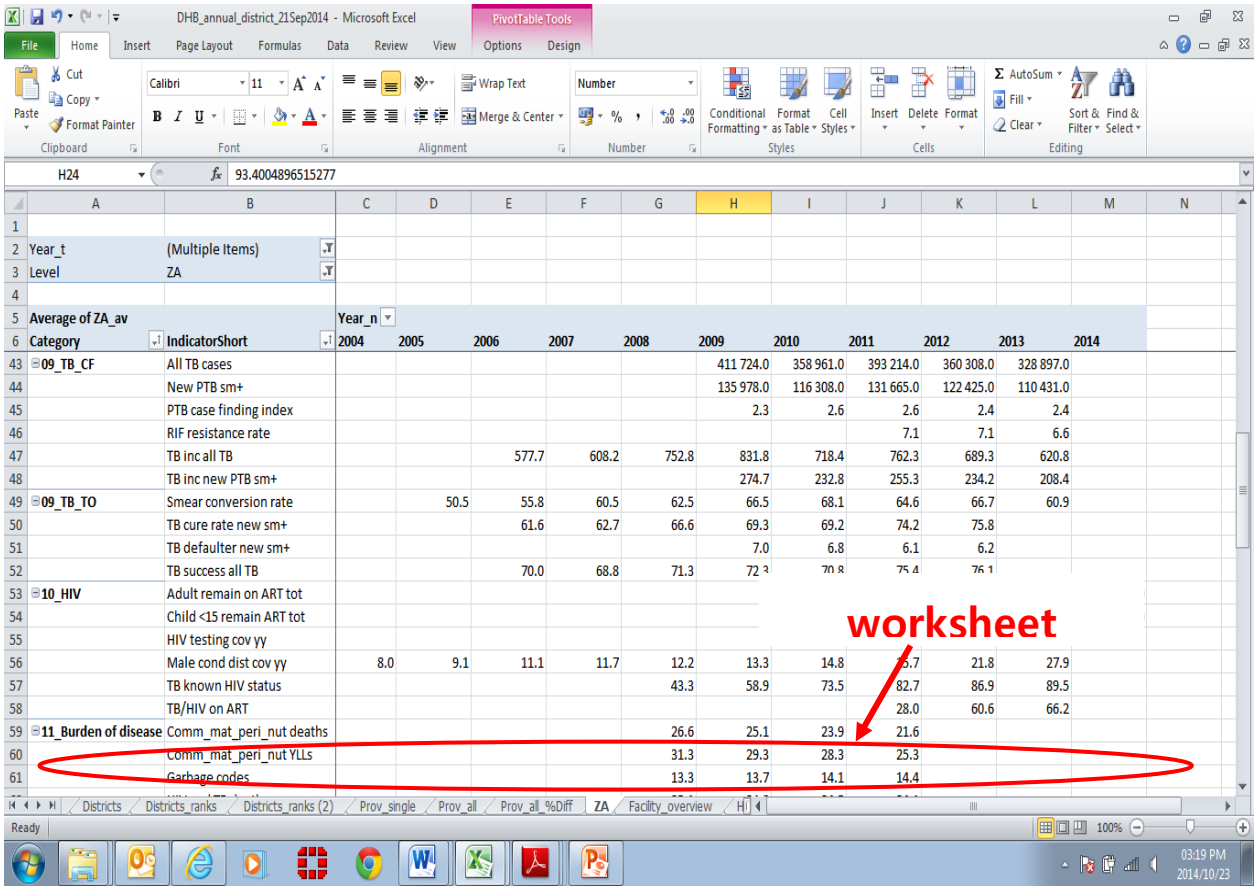
Table of contents

NOTE: This Guide assumes the user to have basic skills in using Microsoft Excel software.

DHB DATA FILE

1. Download "DHB Data file" from (http://www.hst.org.za/publications/district-health-barometer-201314), or extract it from the CD, and open the file (an Excel workbook).
   Note 1: The DHB Data file is compressed to facilitate downloading – select either the WinZip or the 7-zip version.
   Note 2: The 7-Zip compression software can be downloaded from http://www.7-zip.org
   Note 3: Users are advised against saving changes after working in the DHB Data file. Rather copy and paste changes to a new working file so that the DHB Data file maintains the integrity of its layout. A fresh copy can, however, be downloaded from the CD or website if the file is changed.

2. On opening the DHB Date file you will see the display below - except for the red oval and red writing superimposed on the screenshot.



The red oval shown above draws attention to the first important 'route marker' – the worksheet 'tabs'. Each worksheet contains an important set of data or information.

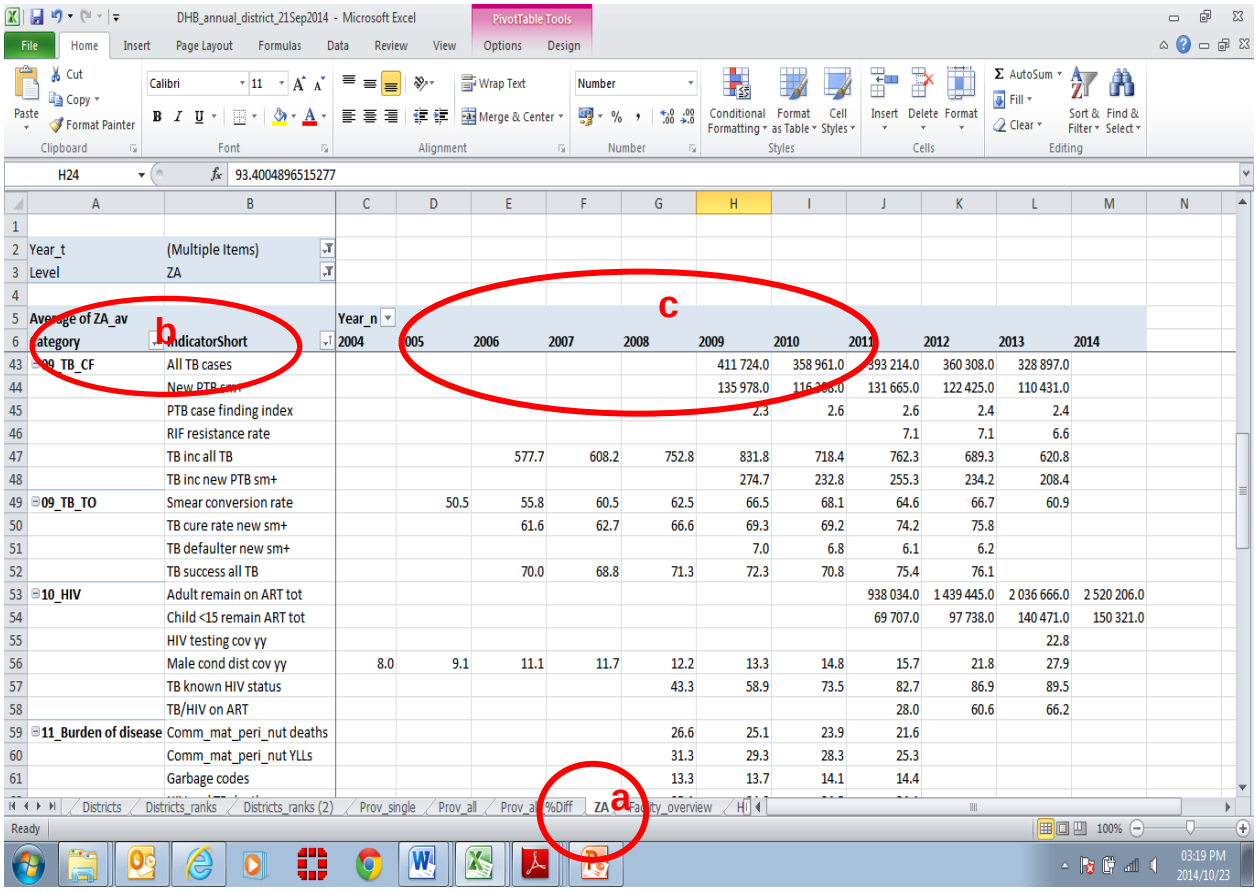
Worksheet (or 'tab') names and content:

Note:	** inserted below indicates that this item is explained in greater detail in the Introduction and Overview section of the DHB book, although the Intro/Overview section does not follow the worksheet order exactly.

3. The DHB_data workbook comprises 17 worksheets, each identifiable by a worksheet 'tab'. By clicking on each tab individually, you can view the data contained in that specific worksheet. From left to right, the following worksheets are available:
   - **Notes**
   - **Defns** (indicator definitions)
   - **SEQ** (Socio-economic quintile of each district (based on SAIMD 2011))
   - **Indicators** (all values per indicator)
   - **Indicators Num** (numerator values)
   - **Indicators_% Diff** (values show % change from previous year)
   - **Indicators_Diff** (values show change (in units of the indicator) from previous year)

- **Districts** (indicator values per district)
- **District_ranks** (district ranking per indicator)
- **District_ranks (2)** (an alternate display of district ranks)
- **Prov_single** (indicator values per province)
- **Prov_all** (indicator values comparing provinces)
- **Prov_all_%Diff (**values show % change from previous year)
- **ZA** (indicator values for South Africa)
- **Facility overview** (number of facilities per type)
- **Hospitals** (all hospitals per province)
- **Time_periods** (explain different year periods)

4. Each worksheet has a fairly similar layout which we need to be familiar with to access the contents. On opening the workbook, the '**ZA**' worksheet (identifiable by tab **'a'**) is displayed (as per screenshot below). The three red circles on the screenshot identify certain data in this first worksheet which is explained below.



5. Circled as **'b'** are columns with indicator categories and indicators.
6. Circled as "**c**" are the indicator values per year period. The indicators from DHIS and the BAS financial system cover the 12 months April to March, which is the financial year of the Department of Health. Indicators for financial years are annotated as 2012/13 or FY 2013. Other sources, such as the TB data from ETR.net, cover a calendar year. Data from the Antenatal HIV Sero-prevalence Survey and Stats SA surveys derive from the period of the survey. The single year indicated for summary purposes is the one including majority of the data.

7. To access the other worksheets and data, scroll to the left and click on the selected tab.

Indicator categories

8. The health-related DHB indicators are grouped in categories – **finance, management PHC, management inpatients, delivery, PMTCT, immunisation, child health, reproductive health, TB control and HIV and AIDS** – in both the DHB book and the DHB data file.

DHB MAPS and GRAPHS

DHB maps

9. The maps used in the DHB are thematic maps showing grouped indicator values per district (district indicator maps).

DHB graphs

10. The DHB data are presented in a number of different ways and are included in the DHB book and on the CD as graphs and tables.

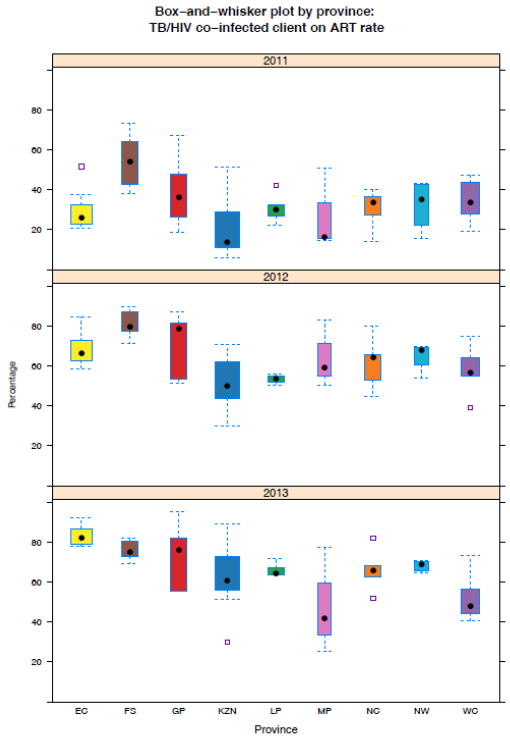
SA and Provincial profiles	Indicator profiles
Map of 52 districts in South Africa as per 2011 demarcation	Colour-coded map of indicator values by district
Annual indicators for South Africa	League graph showing 52 districts
Annual indicators for provinces	League graph showing nine provinces
	Annual trends of districts per province
	Annual indicator trends (as graphs) for districts
	District profiles
	Annual trends for numerator and denominator by indicator
	Annual trends of districts by socio-economic quintile
	Annual trends in average district values by socio-economic quintile by indicator

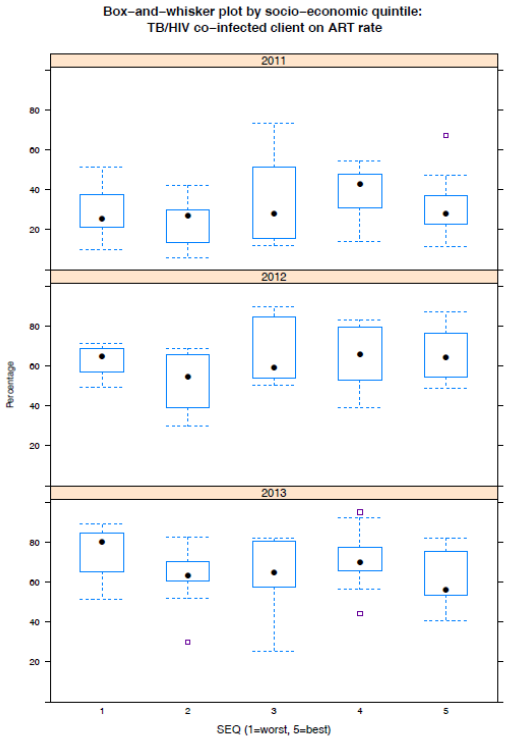
Box-and-whisker graphs

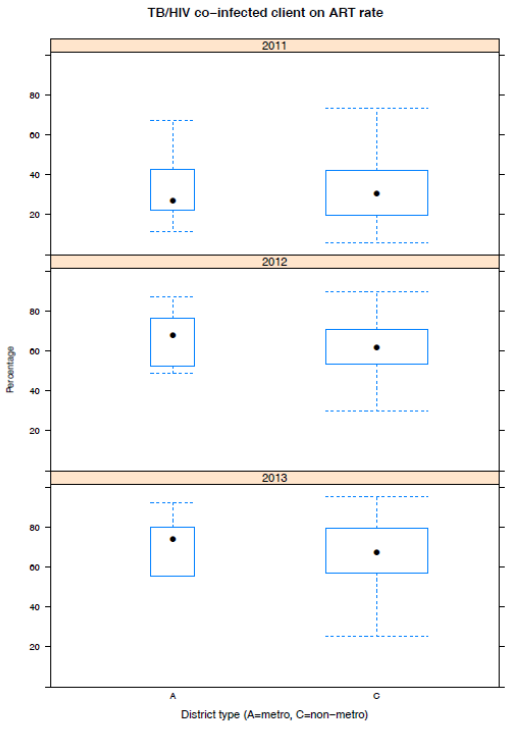
11. Box-and-whisker graphs[1] show the distribution of the district annual values for some indicators according to the four dimensions (province, socio-economic quintile (SEQ), district type (metro / non-metro) and district type (NHI / other)). The box-and-whisker graphs are ideal for comparing the distribution of data sets because the centre, the spread and the overall range of the data are immediately apparent.

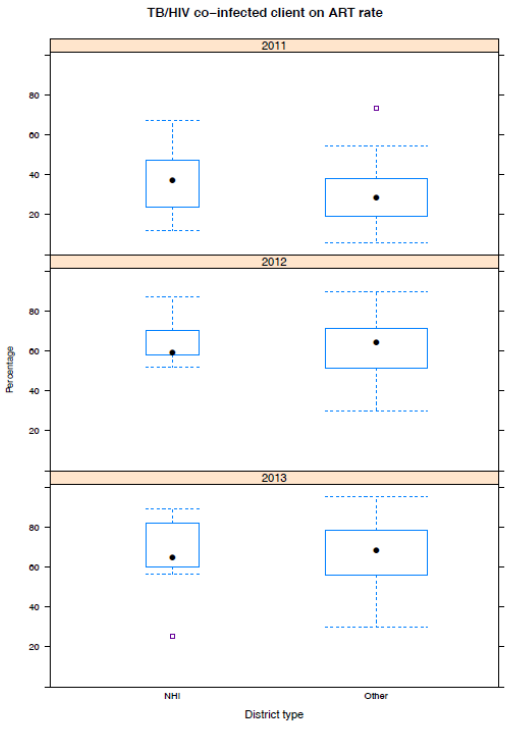
[1] Information for describing box-and-whisker graphs has been collected from a variety of internet sources.

12. Selecting the box-and-whisker graph file for an indicator will provide the display imaged below. In this sheet, annual data for 2011 through to 2013 is presented for each province and SEQ. The provinces are colour-coded in the same shades as are used in the league graphs. The width of the boxes is scaled according to the number of values; narrow for MP (with only 3 districts) and wide for KZN (with 11 districts). By definition, quintiles contain an equal number of districts (approximately) and so all the boxes in the second plot are of equal width.



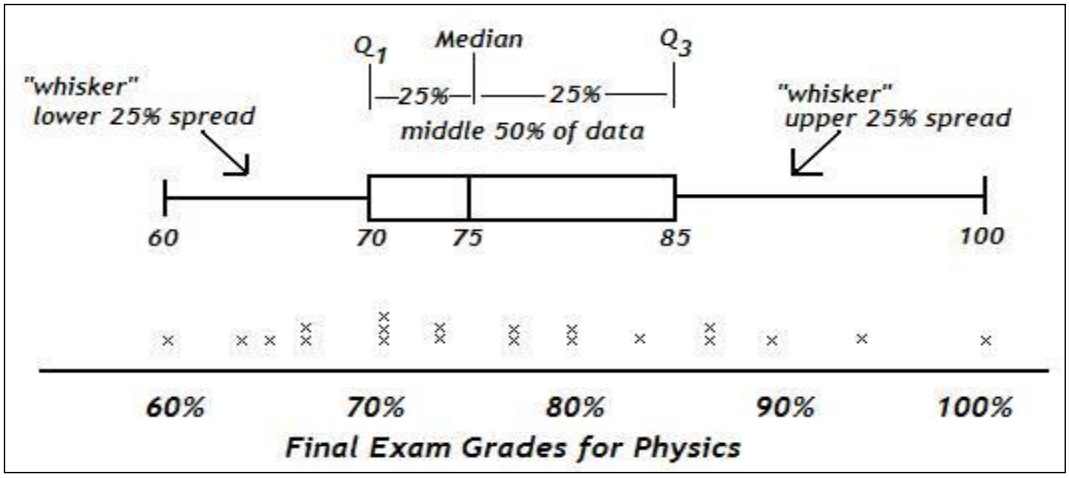






13. The black dot represents the median value for the districts within a province. The box is drawn between the first and third quartiles of the values. The horizontal lines (whiskers) extend to at most 1.5 times the box width (the interquartile range) from either or both ends of the box. They must end at an observed value, thus connecting all the values outside the box that are not more than 1.5 times the box width away from the box. Any value more than 1.5 times the interquartile range is shown by a square box (outlier).

14. The following diagram illustrates the components of a box-and-whisker. Each graph in the DHB data file can then be interpreted and used to compare the distribution of that indicator's annual data with other provinces or districts data.



The spacing between the different parts of the box help indicate the degree of dispersion (spread) and the skewness in the data.

In the diagram we can easily see that:

- 25% of the students scored between 70 and 75 on the test (a spread of 5 points)
- The upper 50% of the scores is more spread out than the lower 50%.
- The high score (end of upper whisker) was a 100.
- The low score (end of lower whisker) was a 60.
- The interquartile range is 85-70=15. So, the inner 50% of the scores are within 15 percentage points of each other.

15. The box-and-whisker graphs in the DHB data sometimes have square symbols beyond the 'whiskers' in the graphs. These represent values that are 'too far' from the central value and are called "outliers" because they 'lie outside' the range in which we expect them. An 'outlier' is any value that lies more than one and a half times the length of the box (the interquartile range - IQR) from either end of the box. In these cases the 'whisker' extends only to the last value within the 1.5xIQR range (i.e. the lowest or highest non-outlier).

NHI districts

16. The National Health Insurance (NHI) is a financing system that will make sure that **all** citizens of South Africa (and legal long-term residents) are provided with essential healthcare, regardless of their employment status and ability to make a direct monetary contribution to the NHI Fund. Piloting of NHI commenced in eleven selected districts in 2012.

The 11 NHI districts are:

Code	District	Province
TSH	Tshwane	Gauteng
DC4	Eden	Western Cape
DC7	Pixley ka Seme	Northern Cape
DC15	Oliver Tambo	Eastern Cape
DC19	Thabo Mofutsanyana	Free State
DC22	uMgungundlovu	KwaZulu-Natal
DC24	uMzinyathi	KwaZulu-Natal
DC25	Amajuba	KwaZulu-Natal
DC30	Gert Sibande	Mpumalanga
DC34	Vhembe	Limpopo
DC40	Dr Kenneth Kaunda	North West