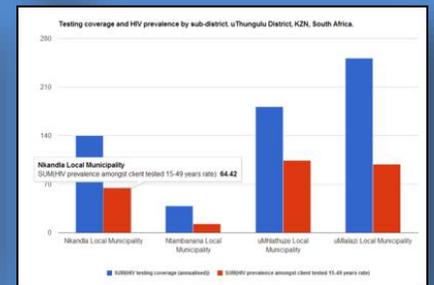
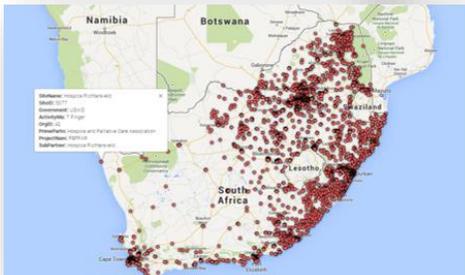


Google Fusion Tables for Health Users Manual

Mock PIMS_South Africa_18June2014

Period	Province	District	Location	Person	Individuals	Female 20+								
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
01 2014 M00 (Jan-Dec)	Eastern Cape Province	uThungulu District	uThungulu District	100 000 000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000



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1. Introduction

This manual offers a systematic approach to using Google Fusion Tables as a tool for informing evidence-based strategic planning. Google Fusion Tables is a web-based interactive worksheet that provides a powerful tool for summarizing large amounts of tabular data to:

- i. Calculating totals, averages, medians, and counts based on source data
- ii. Classifying data based on other fields in the source data
- iii. Auto-generating charts
- iv. Overlaying data on Google Maps

To demonstrate how to use this tool, we will follow an example using publically available ANC Sentinell Surveillance data from Mpumalanga Province in South Africa. It is important to remember that although the manual is organized in a step-by-step format, the use of Google FusionTables is an iterative process. As new information becomes available, previous steps may need to be revisited.

Use Requirements

To produce visual outputs, users will need software and basic operational knowledge of Excel. This manual will refer to Excel 2007 but all Microsoft Office versions have this capability. Users will also need a Google account (also known as a Gmail account) and access to the internet.

To create a Google Account, visit www.google.com and select Sign In => Create an account

2. Preparing data for use in Fusion Tables

2.1. Data Inputs

An Excel dataset consists of rows (individual records displayed horizontally), columns (groups or indicators displayed vertically), and data items (contents within rows and columns). Data to be used in Google FusionTables must first be input into a Microsoft Excel spreadsheet or Google Spreadsheet by doing the following:

1. Input data using the template below:

Column 1: Geographic indicator (Province, district, sub-district, facility). Each spreadsheet should be one geographic disaggregation. If you wish to work with more than one geographic aggregation, create separate spreadsheets for each.

Columns 2+: Descriptive characteristics, indicators

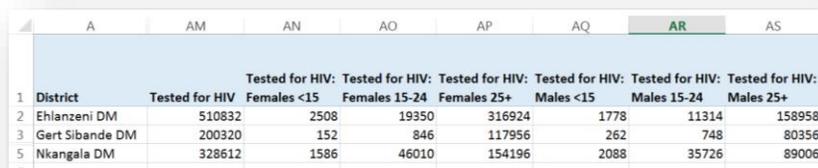
Row 1: Column Headers. Column headers should contain all components necessary to describe the data. Such as “*Number tested for HIV Female 15-24 Q3 2014 DHIS 2013*”. At a minimum, the following should be included:

1. Indicator name (e.g. *Number tested for HIV*);
2. Sex (e.g. *Female*)
3. Age aggregation (e.g. *15-24*);
4. Time frame (e.g. *Q3 2014*);
5. Source (e.g. *DHIS*)

Tip: The contents within a column that match (e.g. same province name) must be identical

Rows 2+: Data elements/values

2. Save your file with a name that is easily recognizable and to a location you remember. For example, a file containing HIV data from DHIS 2010 may be called “HIV indicators DHIS 2010”.



District	Tested for HIV	Females <15	Females 15-24	Females 25+	Males <15	Males 15-24	Males 25+
Ehlanzeni DM	510832	2508	19350	316924	1778	11314	158958
Gert Sibande DM	200320	152	846	117956	262	748	80356
Nkangala DM	328612	1586	46010	154196	2088	35726	89006

2.2. Importing data into Google Fusion Tables

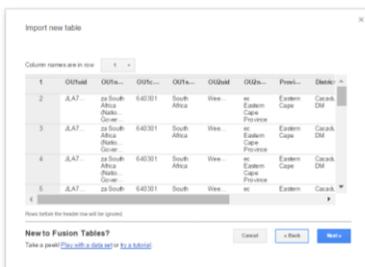
To import data into Google Fusion Table, execute the following steps.

1. Visit <https://www.google.com/fusiontables/>
2. Select 'Create a Fusion Table'

The following dialog box appears.



3. Select From this computer
4. Browse to find the Excel data file you wish to import
5. The spreadsheet should appear. Select Next.



6. Name your table under Table Name and write a description. Select Next



Your dataset will appear in the Google Fusion Table application.

Longitude	Latitude	Facility	Province	District	Sub-district
24.0609	-32.4862	Aberdeen Hosp	Eastern Cape	Cacadu DM	Camdeboo SD
25.6906	-33.6422	Addis Clinic	Eastern Cape	Cacadu DM	Kouga SD
26.294	-32.6999	Adelaide Gateway	Eastern Cape	Amathole DM	Nkorkebe SD
26.2943	-32.7009	Adelaide Hosp	Eastern Cape	Amathole DM	Nkorkebe SD
25.6035	-32.7496	Aeroville	Eastern Cape	Cacadu DM	Camdeboo SD
28.9481	-30.1799	Albiondering	Eastern Cape	A Nzo DM	Malut SD
27.0313	-31.6975	Agnes Rest	Eastern Cape	C Hani DM	Emalahleni SD
26.4142	-33.6613	Alexandria Clinic	Eastern Cape	Cacadu DM	Makana SD
25.5645	-33.9012	Algoa Park Clinic	Eastern Cape	N Mandela Bay MM	N Mandela C SD
26.6867	-30.6883	Alisal North Block H	Eastern Cape	Joe Gqabi DM	Maletswai SD
26.6867	-30.6883	Alisal North Block H	Eastern Cape	Joe Gqabi DM	Maletswai SD
26.6867	-30.6883	Alisal North Block H	Eastern Cape	Joe Gqabi DM	Maletswai SD

2.3. Editing a dataset

Data in Google Fusion Tables can be edited in the dataset tab titled Row 1.

1. Select the Edit menu to add, delete or change entire rows or columns



2. Double click within a cell to change the contents of cells within a row.

3. Select Save

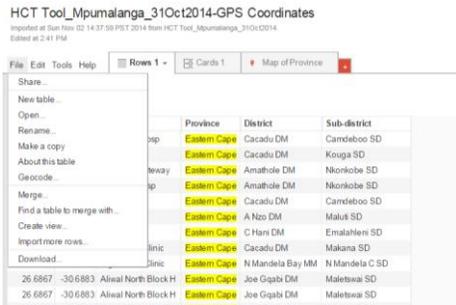
2.4. Merging multiple datasets into one

Data from different datasets can be merged into one dataset by linking a common, aggregated geographic level indicator. The indicator to be linked must contain **identical** values or text in both dataset. For if I will be merging a program dataset aggregated to the district level and a District KML file,

both datasets must contain a column with the districts spelled exactly the same. This step is imperative for displaying data on a polygon map in order to link a KML mapping file to existing program data.

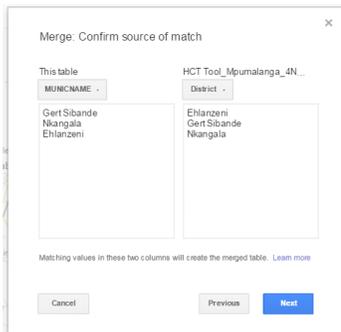
To do this:

1. Select File
2. Select Merge

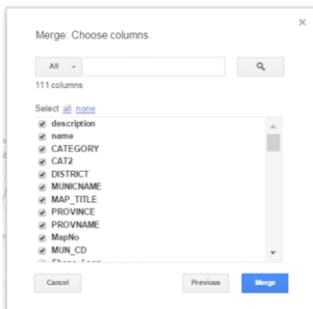


Tip: data to be merged must first be imported into Fusion Tables. When linking mapping data, be sure to import the KML file into Fusion Tables along with the data file

3. Select the Fusion Table file you wish to merge with
4. Select the indicator in each data file that will be merged. Select Next



5. Select which indicators you wish to carry over to your next Fusion Table by checking or unchecking the boxes next to that indicator. Select Merge

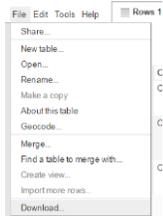


6. Select View Table once the merged table has been created

2.5. Downloading a dataset

Merged datasets do not allow for calculation of formulas and other characteristics. In order to use all components of the FusionTable, a merged dataset must be downloaded onto your computer as a .csv file and then imported back into Google Fusion Tables. To download the file

1. Select File from the menu
2. Select Download.

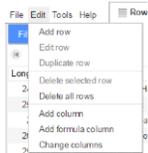


3. Accept the default settings and select Download
4. Your file is now saved as a .csv in the 'Downloads' folder on your computer.
5. Follow the steps above to import the .csv file into Google Fusion Tables

2.6. Calculating Formulas

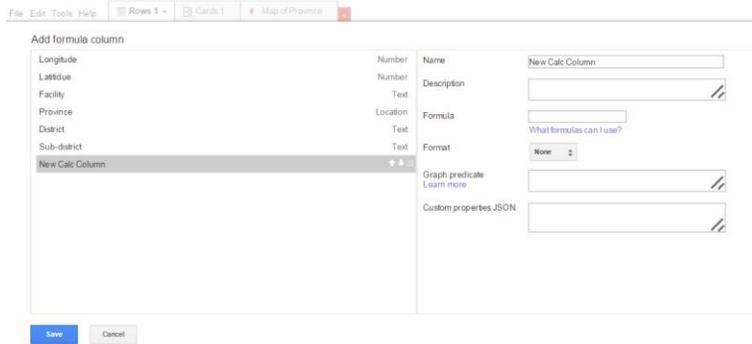
The add formula column allows the data from different fields to be used to calculate a new indicator. To insert and calculate a new indicator item, execute the following steps.

1. Select Edit from the menu
2. Select Add Formula column



3. Enter a name for your new indicator Name (*e.g. HCT Coverage*)
4. Enter a description of this indicator
5. Enter the formula to be calculated.
6. It is important the indicator names in the formula exactly match the indicator names in the dataset. Select the indicator to be included in the formula from the list on the left.
7. Return to the new indicator you just created and paste this indicator name. Continue these steps until you have written a complete formula.
6. Click Save

You can return here anytime to calculate additional indicators



2.7. Filters

Google Fusion Tables allow for certain elements to be included and others to be excluded using the filter function. We can filter out (exclude) elements in all tabs.

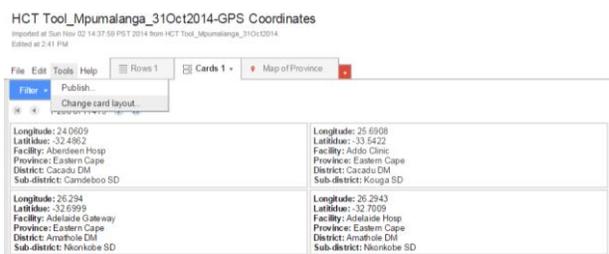
1. Click the blue 'Filter' button.
2. Select the category you wish to filter
3. Uncheck the boxes next to the fields you wish to exclude (e.g. certain provinces or districts)
4. Select Save.

3. Visualizing data

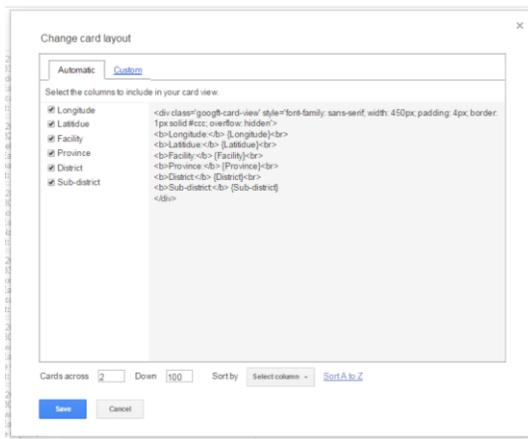
3.1. Cards

The cards tab transforms data listed as a row into one card. Each column header from the dataset is listed as it's own line on the card. By default, each card is organized by the data in Column 1. To change the card layout:

- 6. Select Tools under the menu
- 7. Select Change card layout



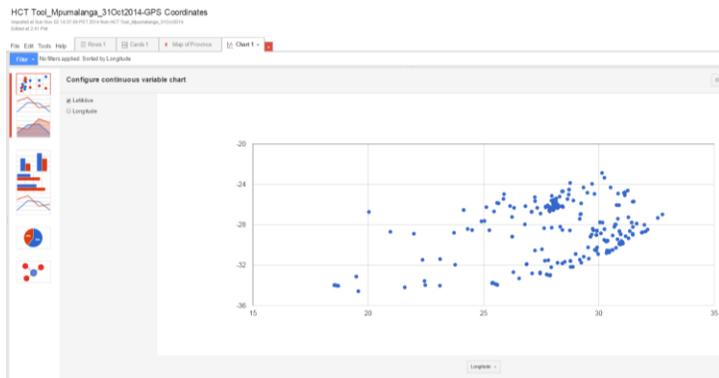
- 8. Check or uncheck the boxes on the left to include or exclude data in your card, respectively.
- 9. Select Sort by and choose a different indicator to adjust how the cards are organized



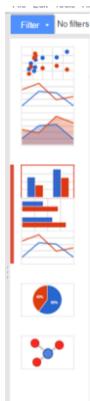
3.2. Charts

The Chart function summarizes data into a chart format. To do this:

- 1. Select the red + button () and choose chart from the drop down menu
- 2. A new tab 'Chart' containing Chart options will appear



3. Select your preferred Chart Type from the left (e.g. bar chart)



3.2.1. Edit chart appearance

Edit the data and format of your chart using the Configure Categorical chart option

Category: Change the indicator appearing on the ex-axis (bottom) of the chart

Values: Change the values or data to be displayed on the chart

Summarize Data: Only show a summary of the data (minimum values, maximum values, average, etc)

Sort by: Change the order the elements on the x-axis appear (e.g. *A=> Z alphabetical, High to low, etc.*)

Maximum categories: Determine the number of categories to appear on the x-axis

Configure categorical chart

Category
Province -

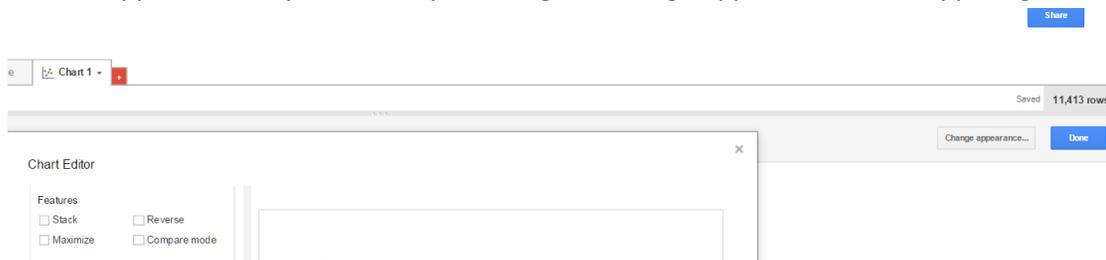
Summarize data?

Values
 Longitude
 Latitude

Sort by [reverse](#)
Province -

Maximum categories
10

10. Edit the appearance of your chart by selecting the Change Appearance in the upper right



Title: Enter the Title of your chart

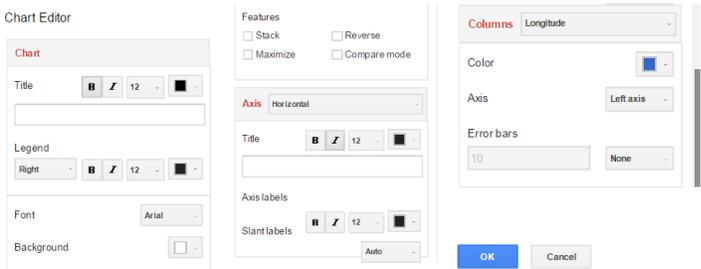
Legend: Change the location and appearance of your legend

Font/Background: Change the overall chart font and background

Features: Select the type of chart you wish to display

Axis: Select which axis you wish to edit (Horizontal or vertical); edit the title, labels and appearance for that axis

Columns: Select which columns on the chart you wish to edit and edit the color and axis location



3.3. Maps

The Map function links program data with GIS data to overlay data on Google Maps. After importing the KML file, merging it with your program data, downloading the merged file and re-importing the downloaded file into GoogleFusion, you will be able to see the polygon shapefile on the maps tab. If you

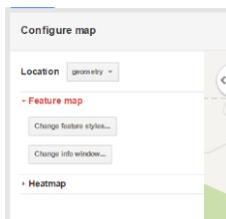
do not see a Polygon, revisit steps above for importing datasets into Fusion Tables and merging datasets.

1. Select the red + button () and choose Map from the drop down menu
2. A new tab 'Map' will appear with facility coordinate data appearing on your map

3.3.1. Edit map appearance

The appearance of both point and polygon data can be adjusted under the 'Change Feature Style' option.

1. Select Change Feature Style under Feature Map on the left side

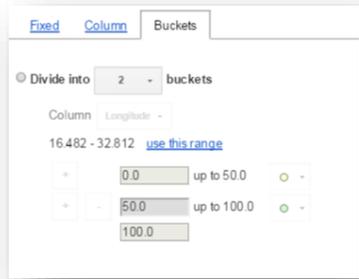


2. Select Fill color under Polygons

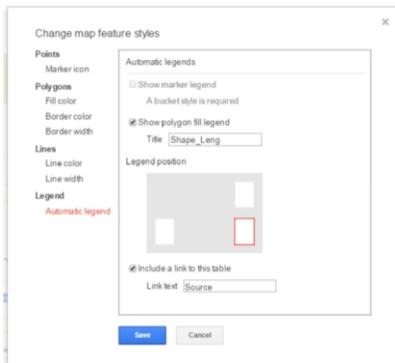


3. Select Buckets. Buckets are the number of categories (or buckets) you wish your data to be divided into. Edit the following:

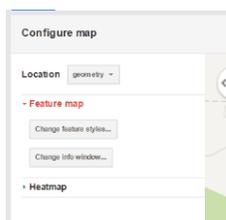
- a. **Divide into:** Adjust the number of categories (or buckets) you want your data to be divided into
- b. **Column:** Select the indicator to be displayed on the map
- c. **Use this range:** Resets the range of the data to match the indicator selected
- d. Click on a value to adjust the cutoff point
- e. Click on the color and choose from the wheel to change the color of each bucket
- f. Select Save



7. Under legend select Automatic Legend
 - a. Check the box next to Show polygon fill legend
 - b. Adjust the title for your legend
 - c. Select Save



8. Select Change Info Window under Feature Map on the left side and follow the steps above under 'Cards' for instruction on how to change the info window contents



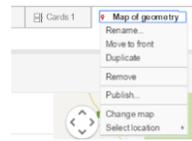
4. Final steps

4.1. Creating additional outputs

You can duplicate your output or table to simplify the process of making large quantities of outputs.

To duplicate your output within a FusionTable

- a. Select down arrow on tab
- b. Select Duplicate
- c. Click on the tab to edit the tab name



To duplicate a Fusion Table

- a. Under the file menu select Make a copy
- b. Select View Table



4.2. Accessing saved FusionTables

You can also access saved Fusion Tables through Google Drive. To do this:

1. Sign into your Google (aka Gmail) account
2. Visit <http://drive.google.com>
3. Select from the list the Fusion Table you wish to view

4.3. Sharing Google FusionTables and Charts

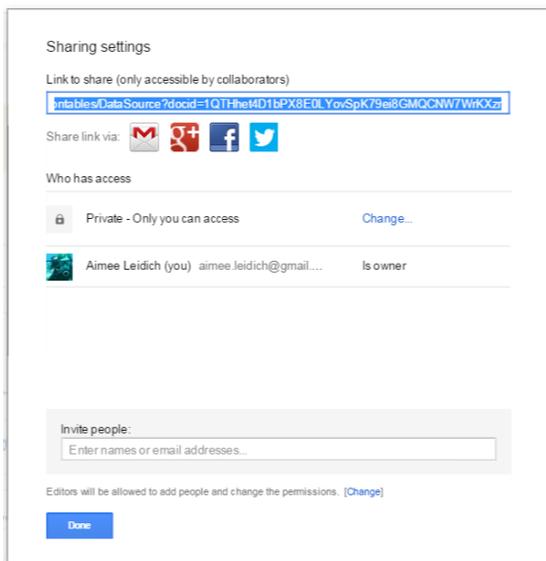
You can either share a static input by taking a screen shot of your final figure or map or share an electronic version through Google.

To share a static output:

1. Center on your screen the image you wish to capture.
2. Select print screen
3. Paste into a Microsoft Office application

To share a live, online output

1. In the upper right corner, select share 
2. Enter someone's gmail address into the Invite People window and select whether they 'Can View' only or 'Can Edit'



3. Copy the Link to share and send to anyone you wish to provide access to your map
4. Select change next to the word private and change to 'Anyone with the link' This will allow others to *view* but not edit your map

