PHPM 631 Lab 1: Data to Decision
Due date: Submit on E-Campus by 11:59pm Wednesday 1/16

Submission: Submit to Assignments/Lab 1: Data to Decision
- Submit a screen shot of your dashboard with the four graphs you created
- Submit your excel sheet on E-campus.

Guideline for assignment grading
- This is a 0/1 grading based on timely submission. What follows is an exercise to introduce you to using both Tableau and Excel (different aspects).

Objective
By the end of this lab, you should be able to:
- In Tableau
  - Upload Excel data
  - Create figures & graphs
  - Create a dashboard
- In Excel
  - Calculate new columns
  - Calculate summary rows
  - Understand how to use absolute and relative reference
  - Generate graphs

Lab 1: Data to decision
Follow the step by step directions below and submit the Excel file when you are done.

1. Download the data from the class website
2. Do the Tableau exercise and publish online
3. Do the Excel exercise and submit the file

Tableau

Install and start Tableau
1. Search for "Tableau Public"
2. [Not necessary in the lab] Download and install "Tableau Public"
3. Start Tableau Public
4. Watch tutorials: http://www.tableau.com/public/training
   a. In particular watch 1. Tableau Public Overview
   b. Watch what interest you, and follow along as you go

Create a map
   Now, let's try doing one thing:
1. Upload the Excel file (click "Excel" on the left)
2. Select "aha_basic" from your computer (you can download this from the class website)
3. Double click on aha_basic (first item in the Sheets section on the left under "Use Data Interpreter")
4. Click on "Sheet 1" on the bottom
5. Grab "County" (top left list under dimensions) and drop into the main table area that states "Drop field here" (not column or rows)
6. Click on grey button that says "76 unknowns" (bottom right)
7. Select "Edit Locations"
8. Select the state: under fixed – Texas, then click "OK"
9. Select "totbeds" (from bottom left menu under Measures), and drop it on "color" (in the Marks tab)
10. Select "Labels" in the Marks tab, then click on "Show mark labels"

11. Now select "Number of Records" (lower left Measures Menu), and drop this on top of "SUM(Totbeds)" in the Marks Menu. This will change the numbers on the map to the number of hospitals (= number of records) per county * number of years of operation
12. Left click on Year (top left under dimension), click on "duplicate"
13. Then click on "rename", and name the copied variable "cyear" (for categorical year)
14. Now, left click on the new variable and click on "convert to discrete"
15. Then click on "Show Filter"
16. See if you can make the filter a "Single Value (List)" (put your mouse next to cyear in the filter, which will display sort/find/menu icons. The menu icon (upside down triangle) has the option.
17. If you select a year, now you can see how many hospitals there are in each county for the given year
18. Rename the sheet "map"

Create a line graph
1. Click on the icon for new sheet ("plus/bar chart")
2. Select Year from upper left under Dimensions and drop it on Columns (at top)
3. Select Number of records from lower left under Measures and drop it on Rows (at top)
4. Select Htype (Hospital ownership type) from upper left under Dimensions and drop it on color in Marks
5. Select 'Line' in Marks
6. Rename the sheet "nhosp"

Create a bar chart
7. Left click on the nhosp sheet, and "duplicate sheet"
8. Select cyear from upper left under Dimensions and drop it on columns (at top)
9. Delete year from columns (at top)
10. Rename the sheet "nhosp_bar"

Create a box-and-whisker plot (This is difficult because Tableau software tries to guess what you want, but is wrong)
1. Click on the icon for new sheet ("plus/bar chart")
2. Select Number of records from lower left under Measures and drop it on Rows (at top)
3. Select Year from upper left under Dimensions and drop it on the Detail box in Marks
4. Click on "Show me" in the upper right corner
5. Then pick the "box-and-whisker" plot
6. This is when the software will guess wrong and remove the Year on the detail you put in step 3. So just repeat step 3 (select Year and put it on the Detail box). You will then see a box-and-whisker plot"
7. Select Htype from upper left under Dimensions and drop it on columns (at top): This will break out the total counts into owner type. It depicts the spread of each type of hospital (not-for-profit, private, and public) over the different years
8. Rename the sheet "nhosp_bw"

Create a dashboard
1. Click on the icon for new dashboard ("plus/square")
2. Drop the four graphs you made on to a dashboard.
3. Take a screen shot of the dashboard you made and submit

Excel File

1. Copy the first 50 rows into a new sheet (named "sample")
2. Insert 3 columns between column L and column M
3. [calculate new columns]
   a. name the new M column "*subtot*" and sum the three columns *general, peds*, and *ob* in row 2
   b. name the new N column "*total*" and add columns *subtot* and *other* (new column U) in row 2
   c. name the new O column "*check*" and type in the following =*IF(N2-L2=0, "same", "diff")* in row 2
   d. Now select the three cells in row 2, and pull down to row 50 to populate the three columns
4. [calculate summary rows] In row 51
   a. sum columns *general* (columns I)
   b. copy the new cell and paste to columns J to N
   c. insert a new column between column I and J
   d. in cell (2, J) type =*I2/I51*
   e. insert a *$* in the cell (2, J), before 51 (so it should be =*I2/I$51*). $ is used for absolute reference in Excel, so row 51 will not change when you copy and paste this cell into other cells
   f. format the cell as percentage with 1 digit decimal
   g. Now copy the cell (2, J) down the column J to row 51
   h. Notice the changes to columns N to P. Fix this problem by cutting column J and insert it BEFORE column I.
5. [generate a graph] Create a bar chart on the sheet
   a. create a simple bar chart using row 51, cells J, K, and L.
   b. click on the chart using the left button, and select "Select Data Source"
   c. click on the "Edit" button on the Horizontal Axis Labels
   d. Then select row 1, cells J, K, and L to use as labels
   e. Click OK
6. submit this excel sheet