Dashboard Development Step-by-Step Instructions
Excel 2010

Dashboards are a useful visual tool for communicating data to either an audience who has management and decision-making responsibility or a public audience who is particularly interested in the outcomes of a project or a funding source. Often, members of either audience may be unfamiliar with the particular set of data or with using data in general. The content of the dashboard can be selected to tell your story, describe what you do, and meet the needs of educating the audience about what is important to your coalition. The first step to a Dashboard is to develop and populate the management Information system (MIS) with the data you need entered for a given time period. A dashboard can be developed from these data using the following steps.

Layout of the Dashboard

First determine the relative importance of charts to be placed on the dashboard. The purpose of the project is communicated by the Outcome – i.e., to reduce XYZ. No matter what else is accomplished, is it having an effect on that outcome? Therefore, it must have prominence on the dashboard. Intermediate variables are next in importance, and strategies must be positioned to show relationship to those intermediate variables. All of the data are important, but space is limited so selection for display must be thoughtful. Selection must be based on what is most valuable for your audience to see without being overwhelmed.

1. Determine if the dashboard will be created within Excel, Word, or PowerPoint, or comparable programs within a Mac.

2. Each dashboard must have a title indicating the *name of the community* and *the time period* covered. Other important additions include a color key for types of data and sources of data for each chart.

3. In Excel, select a chart and click Copy. On a separate worksheet in Excel, or on a PowerPoint slide, or Word document, select Paste Special and paste as a Picture (Enhanced Metafile). By doing this, the proportions of the chart are maintained and all features are preserved. You can now use the corners to resize the chart. Once placed, enter the source of the data under the chart, if it is not listed within the chart.

4. Arrange all charts on the page(s).

5. Feedback from the audience is always useful since the point is to communicate.

Developing the Dashboard

These are general instructions using the example MIS for demonstration purposes. You will need to customize this process for your project and data.

1. Create a blank dashboard canvas
   a. Can do this in Excel, PPT, or Word

b. Create a title on the page: Community ABC Underage Drinking Prevention Dashboard; approximately center it

2. Outcome Charts
   a. For the first chart: 30-day drinking (youth survey and focus group)
      i. Highlight first two rows of outcome indicators (e.g., 30-day drinking data rows)
         1. Highlight both the indicator names and data series
      ii. "Insert" tab → "Charts" area → "Column" (2-D Clustered Column)
      iii. In "Chart Layouts," choose Layout 1 (simplest)
         1. Add Title: Underage Drinking: 30 Day Use
      iv. Right-click in white space of chart → "Select Data"
      v. *(Switch axes, if necessary)*
      vi. Under "Horizontal Axis Labels," click "Edit"
      vii. Delete what's there and highlight both rows of your timeline (years and months); click OK
      viii. Under "Legend Entries," select top indicator and click "Edit"
      ix. Delete the series name and click on the name of the indicator
      x. Delete the series values and highlight the corresponding indicator's data only; click OK
      xi. Select the second indicator and click "Edit"
      xii. Delete the series name for this indicator and click on the name of the indicator
      xiii. Delete the series values and highlight the indicator's data; click OK
      xiv. Click OK
      xv. Add a trendline to this graph:
         1. Under "Chart Tools," click the "Layout" tab
         2. What is a trendline?
            a. Used to summarize the overall pattern that appears in a set of values.
         3. What is a linear trendline?
            a. A linear trendline usually shows that something is increasing or decreasing at a steady rate. It's better for data that doesn't fluctuate too much or data that already looks pretty linear.
         4. See "Analysis" section → "Trendline" → select "Linear Trendline" → select first indicator; click OK
         5. Select "Linear Trendline" again → select second indicator; click OK
      xvi. Add a yellow vertical line to signify when you started implementing your efforts (e.g., October 2011)
         1. "Insert" → "Shapes" → "Line"
         2. Draw vertical line at project implementation date
         3. Right-click on line; "Format Object"
         4. Under "Line Style," increase the width of the line to 1.5
         5. Under "Line Color," change the color of the line to yellow
         6. Click "Close"
      xvii. *Optional:* Right-click in white space of chart → "Format Chart Area"
         1. Under "Fill," select "Solid Fill"

2. Change the fill color to red or pink to signify this chart is for outcome indicators
3. Click "Close"

xviii. Right-click in white/red space of chart and click "Copy"

xix. Go to your blank dashboard sheet and paste the chart at the top

b. For the second chart: Alcohol-involved traffic crashes (adult vs. youth)

 i. Highlight second two rows of outcome indicators (alcohol crashes rows)

 ii. "Insert" tab → "Charts" area → "Line" (2-D Line)
1. We selected a line graph here because we have monthly data and we want to view the entire series of values as a single pattern. This is useful for displaying how values change through time because it is easy to think of the up and down patterns as degrees of change.

 iii. In "Chart Layouts," choose Layout 1 (simplest)
1. Add Title: Underage Drinking: Traffic Crashes
2. Edit y-axis label: # of crashes

 iv. Right-click in white space of chart → "Select Data"

 v. Under "Horizontal Axis Labels," click "Edit"

 vi. Delete what's there and highlight both rows of your timeline; click OK

 vii. Under "Legend Entries," select top indicator and click "Edit"

 viii. Delete the series name and click on the name of the indicator

 ix. Delete the series values and highlight the indicator's data; click OK

 x. Select the second indicator and click "Edit"

 xi. Delete the series name for this indicator and click on the name of the indicator

 xii. Delete the series values and highlight the indicator's data; click OK

 xiii. Click OK

 xiv. Add a yellow vertical line to signify when you started implementing your efforts
1. "Insert" → "Shapes" → "Line"
2. Draw a vertical line at implementation date
3. Right-click on line; "Format Object"
4. Under "Line Style," increase the width of the line to 1.5
5. Under "Line Color," change the color of the line to yellow
6. Click "Close"

 xv. Add trendlines to this graph:
1. Under "Chart Tools," click on "Layout" tab
2. See "Analysis" section → "Trendline" → "More Trendline Options…" → select first indicator; click OK
3. Select "Moving Average" → change period to 6 (months); click close
4. Select "More Trendline Options…" again → select second indicator; click OK → select "Moving Average" → change period to 6; click close
   a. You can change the color and style of the trendlines for further differentiation by editing Line Color/Style in the "More Trendline Options" box.
5. Difference between linear trendline and moving average trendline

a. Moving average smooths out fluctuations in data and shows the pattern or trend more clearly.

b. The type of data you have determines the type of trendline you should use.

c. A moving average uses a specific # of data points (e.g., 6 months), averages them, and uses the average value as a point in the line. For example, the moving average of six-month crashes may be computed by taking the average of crashes from January to June, then the average of crashes from Feb to July, then of March to August, and so on, and in doing so they reduce the effect of temporary variations in data and improve the 'fit' of the data to a line to show the data's trend more clearly. It is used to soften the jaggedness that often occurs in change through time.

xvi. *Optional:* Right-click in white space of chart → "Format Chart Area"

    1. Under "Fill," select "Solid Fill"

    2. Change the fill color to red or pink to signify this chart is for outcome indicators

    3. Click "Close"

xvii. Right-click in white/red space of chart and click "Copy"

xviii. Go to your dashboard and paste next to the other outcome chart

3. First intermediate variable indicator charts: Retail availability of alcohol to youth

   a. Compliance checks chart

      i. Highlight the row for compliance check data

      ii. "Insert" tab → "Charts" area → "Line"

      iii. In "Chart Layouts," choose Layout 1

         1. Add Title: Retail Availability: Sales to Minors

         2. Add y-axis label: % of alcohol sales to minors

      iv. Right-click in white space of chart → "Select Data"

      v. Under "Horizontal Axis Labels," click "Edit"

      vi. Delete what's there and highlight both rows of your timeline; click OK

      vii. Under "Legend Entries," select the indicator and click "Edit"

      viii. Delete the series name and click on the name of the indicator

      ix. Delete the series values and highlight the indicator's data; click OK

      x. Click OK

      xi. Add a yellow vertical line to signify when you started implementing your efforts

         1. "Insert" → "Shapes" → "Line"

         2. Draw vertical line at strategy implementation date

         3. Right-click on line; "Format Object"

         4. Under "Line Style," increase the width of the line to 1.5

         5. Under "Line Color," change the color of the line to yellow

         6. Click "Close"

      xii. Add a trendline to this graph:

         1. Under "Chart Tools," click on "Layout" tab

2. Select moving average trendline; change period to 6; close
 xiii. *Optional:* Right-click in white space of chart → "Format Chart Area"
  1. Under "Fill," select "Solid Fill"
  2. Change the fill color to blue to signify this chart is for an IV indicator
  3. Click "Close"
 xiv. Right-click in white/blue space of chart and click "Copy"
 xv. Go to your dashboard and paste beneath the outcome charts

b. Level of perceived retail availability chart
 i. Highlight both indicator rows
 ii. "Insert" tab → "Charts" area → "Column"
 iii. In "Chart Layouts," choose Layout 1
  1. Add Title: Retail Availability: Youth Perceived Availability
 iv. Right-click in white space of chart → "Select Data"
 v. (Switch axes, if necessary)
 vi. Under "Horizontal Axis Labels," click "Edit"
 vii. Delete what's there and highlight both rows of your timeline; click OK
 viii. Under "Legend Entries," select top indicator and click "Edit"
 ix. Delete the series name and click on the name of the first indicator
 x. Delete the series values and highlight the indicator's data; click OK
 xi. Select the second indicator and click "Edit"
 xii. Delete the series name for this indicator and click on the name of the indicator
 xiii. Delete the series values and highlight the indicator's data; click OK
 xiv. Click OK
 xv. Add a yellow vertical line to signify when you started implementing your efforts
  1. "Insert" → "Shapes" → "Line"
  2. Draw vertical line at implementation date
  3. Right-click on line; "Format Object"
  4. Under "Line Style," increase the width of the line to 1.5
  5. Under "Line Color," change the color of the line to yellow
  6. Click "Close"
 xvi. Add trendlines to this graph:
  1. Under "Chart Tools," click on "Layout" tab
  2. Select linear trendline for each indicator
 xvii. *Optional:* Right-click in white space of chart → "Format Chart Area"
  1. Under "Fill," select "Solid Fill"
  2. Change the fill color to blue to signify this chart is for IV indicators
  3. Click "Close"
 xviii. Right-click in white/blue space of chart and click "Copy"
 xix. Go to your dashboard and paste next to the other IV chart

4. Strategy chart: Retail sales training
 a. Accumulative % of outlets trained
  i. Highlight the indicator row
  ii. "Insert" tab → "Charts" area → "Column"
  iii. In "Chart Layouts," choose Layout 1

1. Add Title: Retail Sales Training: Outlets Trained
iv. Right-click in white space of chart → "Select Data"
v. Under "Horizontal Axis Labels," click "Edit"
vi. Delete what's there and highlight both rows of your timeline; click OK
vii. Under "Legend Entries," select the indicator and click "Edit"
viii. Delete the series name and click on the name of the indicator
ix. Delete the series values and highlight the indicator's data; click OK
x. Click OK
xi. Add a yellow vertical line to signify when you started implementing your efforts
1. "Insert" → "Shapes" → "Line"
2. Draw a vertical line at strategy implementation date
3. Right-click on line; "Format Object"
4. Under "Line Style," increase the width of the line to 1.5
5. Under "Line Color," change the color of the line to yellow
6. Click "Close"
xii. Add a trendline to this graph:
1. Under "Chart Tools," click on "Layout" tab
2. Select linear trendline
xiii. *Optional:* Right-click in white space of chart → "Format Chart Area"
1. Under "Fill," select "Solid Fill"
2. Change the fill color to green to signify this chart is for a strategy indicator
3. Click "Close"
xiv. Right-click in white/green space of chart and click "Copy"
xv. Go to your dashboard and paste beneath IV charts

5. Second intermediate variable indicator chart: Social availability of alcohol to youth
   a. Level of perceived social availability
      i. Highlight both indicator rows
      ii. "Insert" tab → "Charts" area → "Column"
      iii. In "Chart Layouts," choose Layout 1
         1. Add Title: Social Availability: Youth Perceived Availability
      iv. Right-click in white space of chart → "Select Data"
      v. *(Switch axes, if necessary)*
      vi. Under "Horizontal Axis Labels," click "Edit"
      vii. Delete what's there and highlight both rows of your timeline; click OK
      viii. Under "Legend Entries," select top indicator and click "Edit"
      ix. Delete the series name and click on the name of the indicator
      x. Delete the series values and highlight the indicator's data; click OK
      xi. Select the second indicator and click "Edit"
      xii. Delete the series name for this indicator and click on the name of the indicator
      xiii. Delete the series values and highlight the indicator's data; click OK
      xiv. Click OK
      xv. Add a yellow vertical line to signify when you started implementing your efforts

1. "Insert" → "Shapes" → "Line"
2. Draw a vertical line
3. Right-click on line; "Format Object"
4. Under "Line Style," increase the width of the line to 1.5
5. Under "Line Color," change the color of the line to yellow
6. Click "Close"

xvi. Add a trendline to this graph:
   1. Under "Chart Tools," click on "Layout" tab
   2. Select linear trendline for each indicator

xvii. *Optional:* Right-click in white space of chart → "Format Chart Area"
   1. Under "Fill," select "Solid Fill"
   2. Change the fill color to blue to signify this chart is for IV indicators
   3. Click "Close"

xviii. Right-click in white/blue space of chart and click "Copy"

xix. Go to your dashboard and paste next to other IV charts

6. Strategy chart: Party patrols
   a. Party dispersals and MIPs
      i. Highlight the rows for party dispersals and MIPs data
      ii. "Insert" tab → "Charts" area → "Line"
      iii. In "Chart Layouts," choose Layout 1
         1. Add Title: Party Patrols: Dispersals and MIPs
      iv. Right-click in white space of chart → "Select Data"
      v. Under "Horizontal Axis Labels," click "Edit"
      vi. Delete what's there and highlight both rows of your timeline; click OK
      vii. Under "Legend Entries," select top indicator and click "Edit"
      viii. Delete the series name and click on the name of the indicator
      ix. Delete the series values and highlight the indicator's data; click OK
      x. Select the second indicator and click "Edit"
      xi. Delete the series name for this indicator and click on the name of the indicator
      xii. Delete the series values and highlight the indicator's data; click OK
      xiii. Click OK
      xiv. Add a yellow vertical line to signify when you started implementing your efforts
         1. "Insert" → "Shapes" → "Line"
         2. Draw a vertical line
         3. Right-click on line; "Format Object"
         4. Under "Line Style," increase the width of the line to 1.5
         5. Under "Line Color," change the color of the line to yellow
         6. Click "Close"
      xv. Add a trendlines to this graph:
         1. Under "Chart Tools," click on "Layout"
         2. Select 6 month moving average for both indicators
            a. Blue line for dispersals
            b. Red line for MIPs
      xvi. *Optional:* Right-click in white space of chart → "Format Chart Area"

1. Under "Fill," select "Solid Fill"
2. Change the fill color to green to signify this chart is for a strategy indicator
3. Click "Close"
xvii. Right-click in white/green space of chart and click "Copy"
xviii. Go to your dashboard and paste next to other strategy chart

7. *Optional:* Print dashboard in Excel
   a. "Page Layout" tab → "Orientation" → "Landscape"
   b. "View" tab → "Page Break View" → move dashed line over to edge of page → "Normal" view
   c. "File" → "Print"

Example MIS Development Step-by-Step Instructions
Excel 2010

Please reference the example MIS Tab in the provided template Appendix F.

1. Title: Underage Drinking Prevention Management Information System
   a. Cell B2; 18; **Bold**
2. Last Updated: 1-10-2013 [insert the date your MIS was last updated; insert creation date if new]
   a. Cell A1; **Bold**
3. Legend: Outcome (red/pink **bold**), Intermediate Variable (blue **bold**), Strategy (green **bold**), Indicator (white), Action Step (orange **bold**)
   a. Cells A2-A7; <u>Legend</u>
4. Outcome (red; two rows): Underage Drinking (**bold**)
   a. Cells A11-12
5. Outcome Indicators:
   a. A13: % drank in 30 days – youth survey
   b. A14: % drank in 30 days – focus grp
   c. A15: # alcohol crashes <21 [where driver was minor]
   d. A16: # alcohol crashes 21+ [where driver was adult]
6. Intermediate Variable (blue; two rows): Retail Availability of Alcohol (**bold**)
   a. A17-18
7. Intermediate Variable Indicators:
   a. A19: % sales – compliance checks
   b. A20: Level (%) of perceived retail availability (high + very high) – youth survey
   c. A21: Level (%) of perceived retail availability (high + very high) – focus group
   d. Wrap text [This ensures the longer text fits well within a cell.]
8. Strategy (green; two rows): Retail Sales Training (**bold**)
   a. A22-23
9. Strategy Indicator:
   a. A24: Accumulative % of outlets trained (or the accumulative monthly % of total off-premise retail outlets trained); wrap text
   b. Can continue on and add in your action step data; A25-27
10. Intermediate Variable (blue; 2 rows): Social Availability of Alcohol (**bold**)
    a. A28-29
11. Intermediate Variable Indicators:
    a. A30: Level (%) of perceived social availability (high + very high) – youth survey
    b. A31: Level (%) of perceived social availability (high + very high) – focus group
    c. Wrap text
12. Strategy (green; 2 rows): Party Patrols (**bold**)
    a. A32-33
13. Strategy Indicators:
    a. A34: # parties dispersed
    b. A35: # youth MIPs [minor in possession charges] from party dispersals
14. Timeline:
    a. Starting with B10: Jan-Dec, Jan-Dec; color light purple row

  b. B9: 2011, N9: 2012, Z9: 2013; highlight light purple columns
  c. Column A: right-sided black line border
15. Fill in data values
16. Notes on data
  a. Monthly data is recommended because it creates a time series. A time series/trend is composed of monthly data values over as long of a historical period for which data are available. Monthly measurement enables a community to monitor change frequently and thus have early information to make modifications or changes in strategies as necessary. Less frequent measurement (like biannual, annual, or biennial) can result in significant delays in necessary and essential changes to the project. For instance, if data are available only annually or biennially (like YRBS data), then you'll have to wait until an entire year or more has passed before you get can the information you need to consider making any necessary modifications to your prevention efforts.
  b. You should begin with the oldest historical records available and work forward in time to the most recently available data. The longer the historical data available, the more informed your community can become about what has been the historical patterns or trends of the outcome prior to the initiation of your prevention efforts. The more monthly and historical data available, the more useful information you will have.
  c. However, if you just can't get monthly data, then insert the data you do have, whether it's quarterly, biannual, annual, or biennial. You have to work within the limitations of your data.