



Example of graphs using SAS 9.2

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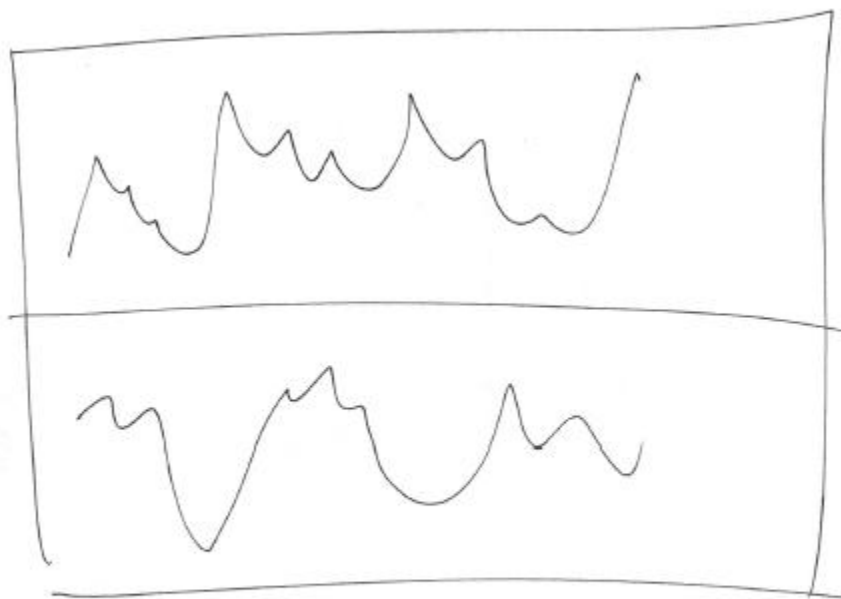
Introduction to topic

- 9.2 vs. 9.1 (or earlier) graphics
- The task at hand
- The solution
- How I got there
- Challenges

Why 9.2 graphics

- Change if you can see a benefit
- Change if you can do some tasks better or easier (or nicer looking)
- Know that *one* change seldom come alone

The task at hand



$$MAP = DIA + \frac{(SYS - DIA)}{3}$$

(Mean Arterial Pressure)

Heart Rate

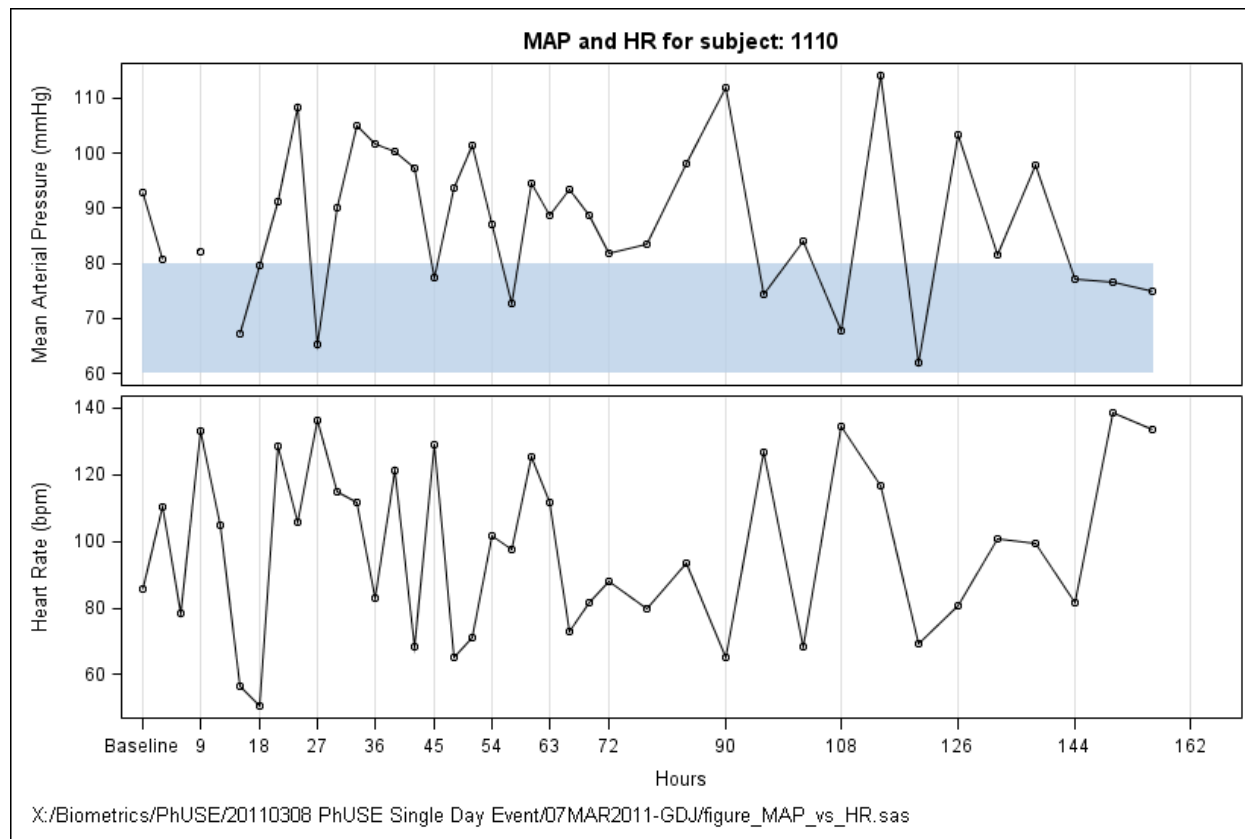
Target MAP is 60-80 mmHg

The good idea

BAND

I WANT bands !!

The solution



How I got there

A big help is the build-in design tool "**ODS Graphics Designer**". Here you can build by drag-and-drop, and you can then get the code afterwards.

After starting a pure SAS session, the following macro-call is made:

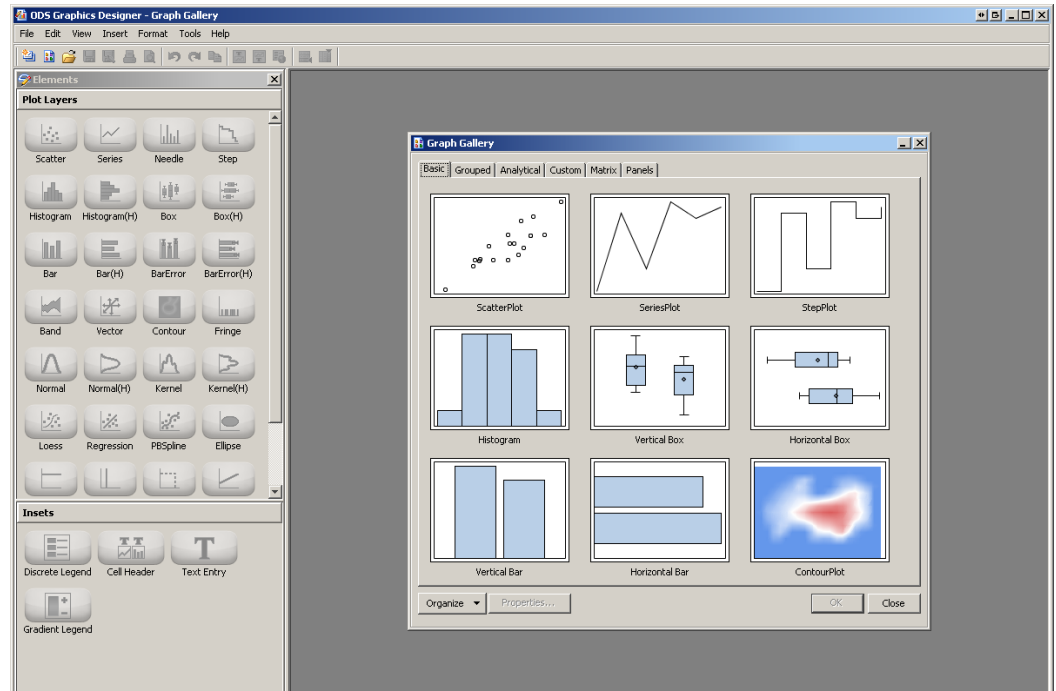
%sgdesign;

This will provide the interactive tool to build graphs/templates.

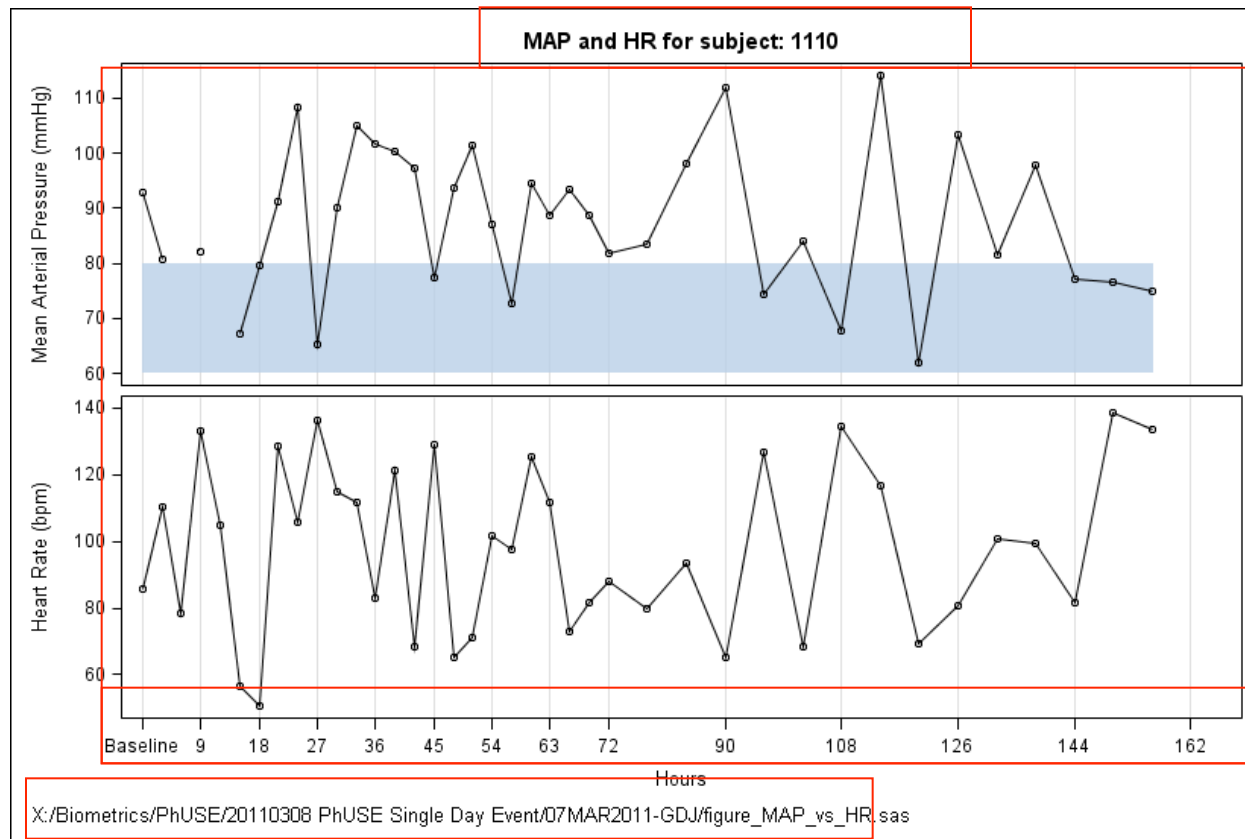
If temporary data are created, or libnames to permanent data made prior to %sgdesign-call, these data will also be available during the session.

Another useful source is the **SAS/GRAPH® Graph Template Language Reference, Second Edition**.

With this at hand you can make all the small refinements that make the difference to your template.

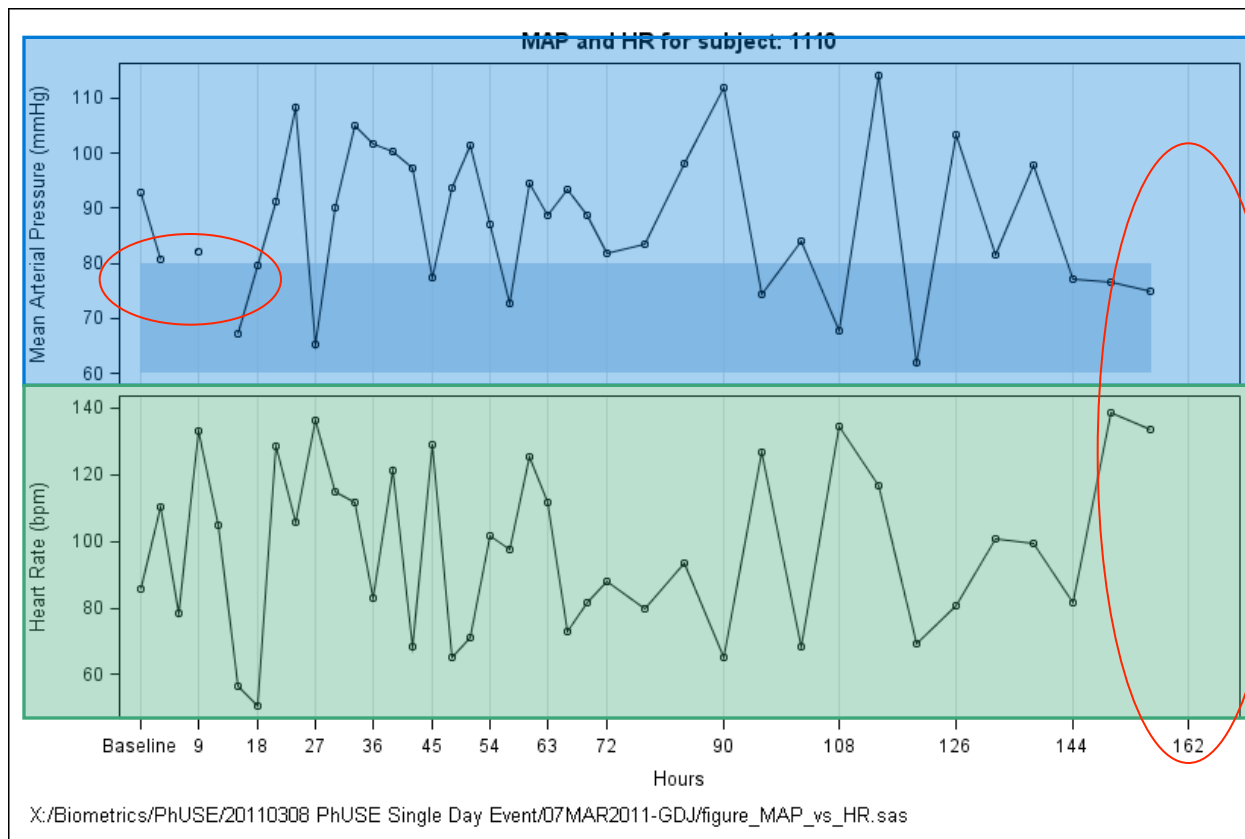


How I got there – the process



MEDICINE ON THE BODY'S OWN TERMS

How I got there – the process



How I got there – the process

The template:

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    dynamic TITLE;
    begingraph;
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      columnaxes;
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          linearopts = (integer = TRUE tickvaluelist = (&xaxis_list.) /* list of timepoints */
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      endcolumnaxes;
    layout overlay;
      bandplot _id='band' x = AVISITN limitlower=LL limitupper=UL / connectorder=axis extend=true
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Note: Full template, environment set-up and test data are located in the notes to slide 21

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How I got there – the process

Using the template

```
%let usubjid = 1110;
```

```
%let plotTitle = MAP and HR for subject: &usubjid.;  
proc sgrender data      = VS2(where=(USUBJID=&usubjid.))  
              template = graph.VITALS;  
  dynamic TITLE = "&plotTitle.";  
run;
```

Challenges met

1. Creating the graph itself. "Easy"
2. Getting full control of axis-presentation. **Not quite there yet**

Challenges met

1. Getting it OUT/Saving it.

Doable

```
ODS LISTING GPATH = FIGOUT; * using filename;  
ODS GRAPHICS / RESET IMAGENAME = "mapHR"  
                        IMAGEFMT = PNG  
                        HEIGHT    = 14cm WIDTH = 21cm;
```

2. Making it run in batch

Doable

```
ODS PATH work.templat(update)  
          sasuser.templat(read)  
          sashelp.tmplmst(read);
```

3. Getting it included in a trial set-up.

Doable – more time

Making routines recognise .png-files and include them in the same manor as the traditional .cgm-files

Challenges to come (or for SAS to update)

1. Graphics directly from statistical procedures

– are they out-of-the-box?

(e.g. problems with the Y-axis scale and titles reflecting filters in Kaplan-Meier plots)

2. Unsupported features.

E.g. Box-plot with subgroup.

Not supported yet. One has to trick the plot by doing a boxplot-statement for each subgroup-value and then use the DISCRETEOFFSET-option to present them side-by-side.

Makes it difficult to create truly generic templates.