

Paper 052-31

Custom Template for Reporting Interim Analyses Using PROC REPORT and Output Delivery System (ODS)

Hanaa Girgis, Eli Lilly and Company, Indianapolis, IN USA

ABSTRACT

Since the release of SAS[®] 8, programmers and analysts have been eager to take advantage of the Output Delivery System (ODS). This Object Oriented feature works with PROC PRINT, PROC TABULATE, PROC REPORT and Data _NULL_ and can be used to produce calculated summary statistics using Base SAS and STAT procedures, such as FREQ, MEANS, SUMMARY, UNIVARIATE, ANOVA, GLM, MIXED, and REG. The ODS feature allows programmers and analysts to create output with greater clarity and better aesthetics for their readers. Output can be managed with proportional fonts, embedded images and non-tabular layouts.

INTRODUCTION

In this paper we will show how an ODS template that was created to generate output for several platforms. These platforms include MS Word, web pages (HTML), portable document format (pdf), and MS Excel files. This Paper will also show how to use the output MS Excel file to make a presentation using Power Point.

We are using PROC REPORT to create the reports along with ODS. SAS code to produce MS word, HTML and Excel files will be included in this paper as well.

WITH ODS YOU CAN CREATE DIFFERENT TYPES OF FILES:

- MS Word (RTF file)
- Portable Document Format (PDF file)
- MS Excel (Excel file or CSV file)
- HTML(HTML file)

FOOTNOTE & TITLE (HEADER& COLUMN) OF A REPORT

- **Justify** (Left, Center, Right)
 - Title and Footnote of Your Output.
 - Header and Column Text of a Table Cell.
- **Choose Your Preference of:**
 - Font Style
 - Font Size
 - Font Color
 - Background Color of the of the Header/Column
 - Width and Height of the Header Cell/Column Cell
- **Control Orientation of an Output** (Landscape or Portrait)

FOOTNOTE AND TITLES OPTIONS

- **BOLD** = Specifies Bold.
- **COLOR** = Specifies the Text Color.
- **BCOLOR** = Specifies the Background Color.
- **FONT** = Specifies the Font Name.
- **HEIGHT** = Specifies the Point Size.
- **ITALIC** = Specifies Italic Style.
- **JUSTIFY** = Specifies Left, Right, or Center.
- **UNDERLIN** = Specifies an Underline.

HEADER & COLUMN OPTIONS

- **FONT_FACE** = Specifies the Font Name (Times, "Courier New",).
- **FOREGROUND** = Specifies the Text Color (**Blue**, **Green**,)
- **FONT_WEIGHT** = Specifies Font Style (**Bold**, *Italic*).
- **JUSTIFY** = Specifies Left, Right, or Center.
- **FONT_SIZE** = Specifies the Height of the Font (1, 2, 3, 4,)
- **CELLWIDTH**= xxin
- **CELLHEIGHT**= .xxin
- **BACKGROUND**= (**red**, **black**, **blue**,...)
- **BORDERCOLOR** = **black**

CREATE RTF FILE & EXCEL FILE; USING ODS WITH STYLE = STATDOC

```
options orientation=landscape; /** Portrait is the default **/
ods listing close; /** SAS output window is the default location **/
ods rtf file="fileName.rtf" style = statdoc;
ods html file="fileName.xls" style = statdoc;
SAS statements .....
.....
ods rtf close;
ods html close;
ods listing;
```

CREATE RTF FILE TO PRODUCE LISTING OF AE'S USING ODS&PROC REPORT

```
options orientation=landscape;
ods listing close;
ods rtf file=FileName.rtf' style=statdoc;
proc report data=Event_Patient nowd split='~'
  style(report)={font_face=times font_size=1 bordercolor=black}
  style(column)={just=center font_face=times background=white foreground=black
    font_size=1 bordercolor=black cellwidth=.6in}
  style(header)={just=center font_face=times cellheight=.6in font_size=1
    foreground=black bordercolor=black cellwidth=.6in
    background=white};
column Inv Patient TrtGrp PTClast ActTerm Severe Fatal Threat Disable Hospital
  Congenit ReqIntv Other Relation;
define Inv /'Inv'
  style(column)={cellwidth=.3in}
  style(header)={cellwidth=.3in};
define Patient/'Patient'
  style(header)={cellwidth=.5in};
define TrtGrp/'Tretment~Group';
define PTClast/'MedDRA~Preferred~Term'
  style(header)={just=left cellwidth=1.1in}
  style(column)={just=left};
define ActTerm/'Actual~Event~Description'
  style(header)={just=left cellwidth=1.1in}
  style(column)={just=left cellwidth=1.3in};
define severe/'Maximum~Severity'
define fatal/'Fatal~(Y/N)'
define threat/'Life~Threatening~(Y/N)'
  style(header)={cellwidth=.8in};
define disable/'Permanently~Disabling~(Y/N)'
  style(header)={cellwidth=.8in};
define hospital/'Hospitalization~(Y/N)'
  style(header)={cellwidth=.6in};
define Congenit/'Congenital~Anomaly~(Y/N)'
  style(header)={cellwidth=.8in};
define ReqIntv/'Required~Intervention~(Y/N)'
  style(header)={cellwidth=.8in};
define other/'Other~Serious~Reason for~AE (Y/N)'
```

```

        style(header)={cellwidth=.8in};
        define relation/related to~Study~Drug~(Y/N) '
** create titles for the report **;
        title1 bold font=times color=black h=1 'List of Serious Adverse Events ' ;
        title2 bold font=times color=black h=1 'All Randomized Patients';
run;
ods rtf close;
ods listing;
title;
footnote;

```

CREATE HTML FILE TO PRODUCE SUMMARY OF AE'S USING ODS & PROC REPORT

```

ods listing close;
ods html file='D:\IndySUG\SAE summary.html' style=statdoc;
run;

proc report data=SAE nowd split='~'
  style(report)={font_face=times font_size=1.5 font_weight=bold bordercolor=black}
  style(column)={just=center font_face=times background=white
    foreground=black font_size=1 bordercolor=black}
  style(header)={just=center font_face=times font_size=1 cellheight=.5in
  foreground=black
    bordercolor=black};
  column order1 MedBodyT order2 PTClast GroupA GroupB Overall pvalue;
  define order1/order noprint;
  define MedBodyT/order 'System Organ Class' noprint;
  define order2/order noprint;
  define PTClast/order 'System Organ Class/~Event Classification'
style(column)={just=left}
  style(header)={just=left};
  define GroupA/"Group A~N=&A_N~n (%)";
  define GroupB/"Group B~N=&B_N~n (%)";
  define Overall/"Total~N=&Total_N~n (%)";
define Pvalue/format=7.3 "Fisher's~Exact~P-value*";
  compute before MedBodyT;
    line @1 MedBodyT $50.;
  endcomp;
  break after MedBodyT/skip;
endcomp;
*create titles for the report;
title1 bold font=times color=black h=1 'Serious Adverse Events by System Organ Class';
run;

ods html close;
ods listing;
title;
footnote;

```

Create Excel File Using ODS& PROC REPORT

```
ods listing close;
ods html file='D:\IndySUG\BG_Targets.xls' style=statdoc;
proc report data=BGTarget nowd center split='~'
  style(report)={font_face=times font_size=5 bordercolor=black}
  style(column)={just=center font_face=times cellheight=.3in
    background=white foreground=black font_size=5 bordercolor=black}
  style(header)={font_face=times font_size=5 cellwidth=1.1in cellheight=.5in
    foreground=black bordercolor=black};
column Visit Months ("Group A" nPost PostOPT PostBorder PostUnsatisf)
      ("Group B" nFasting FastOPT FastBorder FastUnsatisf)
      ("Treatment~p-values*" PvalOpt PvalUnsatisf);
define Visit/format= VisitName. 'Visit'
  style(column)={just=left cellwidth=.8in}
  style(header)={just=left cellwidth=.8in};
define Months/'Months'
  style(column)={cellwidth=.7in}
  style(header)={cellwidth=.7in};
define nPost/'n'
  style(column)={cellwidth=.5in}
  style(header)={cellwidth=.5in};
define PostOPT/format=5.1 'Optimal';
define PostBorder/format=5.1 'Borderline';
define PostUnsatisf/format=5.1 'Unsatisfactory';
define nFasting/'n'
  style(column)={cellwidth=.5in}
  style(header)={cellwidth=.5in};
define FastOPT/format=5.1 'Optimal';
define FastBorder/format=5.1 'Borderline';
define FastUnsatisf/format=5.3 'Unsatisfactory';
define PvalOpt/format=5.3 'Optimal';
define PvalUnsatisf/format=5.3 'Borderline';
compute after;
  line @2 "; /* write blank line */
  line @2 ";
** Create footnotes for the report **;
  line @2 "** Compared using the chi-square test";
  line @2 "*** LOCF of post-baseline visits";
  line @2 ";
endcomp;
** Create titles for the Report **;
title1 font=times bold color=black bold h=2.5 'Interim Analysis #2 - 2004';
title2 font=times bold color=black bold h=2.5 "All Randomized Patients.";
run;
ods html close;
ods listing;
title;
footnote;
```

Here is a snap shot of what we will get using Power Point.

Visit	Months	Group A				Group B			
		n	Optimal	Borderline	Unsatisfactory	n	Optimal	Borderline	Unsatisfactory
Baseline	0	539	9.8	16.1	74.0	542	16.2	19.2	64.6
Visit 3	1	499	19.8	28.5	51.7	498	25.9	22.7	51.4
Visit 4	3	473	35.5	27.9	36.6	475	32.0	25.7	42.3
Visit 5	6	415	40.2	27.2	32.5	415	33.7	29.2	37.1
Visit 6	9	365	40.8	29.6	29.6	361	41.0	24.7	34.3

CREATE POWER POINT PRESENTATION USING EXCEL FILE

In Power Point:

- Go to **Insert** select **Slides from Files** {a screen will pop up [Slide Finder]}
- Click **Browse**
- In the files of Type Choose **All Files**
- Highlight all the files that you need to insert
- Click open (the file name will appear beside the **Files** tab)
- Click inside the **Select Slide Box**
- Hit Insert

To Insert Another File:

- Go back to where the **Files** tab is in and click the down arrow and choose the second file
- Hit **Display**
- Click inside the **Select Slide Box**
- Hit **Insert**

If You Have More Files:

- Repeat steps 1 - 4 to insert the rest of the Excel files.

CONCLUSION

Problems:

- You may face some problems creating Power Point presentation using Excel output:
 - Power Point will adjust the output based on the size of the file you are inserting.
 - Do not make your judgment on the output which SAS is producing, you must insert the output file into a Power Point slide to see how it is really going to look like.

Advantages:

- With ODS you can create 5 different types of output (.html, .rtf, .pdf & .xls).
 - The template (Style) that fits one may not fit the other kind!
- ODS provides you with a very flexible and professional output looking report (listing/summary).
 - Titles and Footnotes (Justification, Font style, Border, Color, etc.) are under your control.
 - Control Output orientation (Landscape, Portrait)
- Easy to create a Power Point presentation using MS Excel output.

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REFERENCE

1. **SAS® Procedure Guide, Version 8**

CONTACT INFORMATION

**Hanaa Girgis
Eli Lilly and Company
Indianapolis, IN 46285 USA**

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