



ACCESSIBLE REPORTING BY PROC STREAM

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INTRODUCTION

- Increased Insistency on complete and extensive documentation of the clinical data
- Essential to prove the quality, safety, and efficacy of the new drug
- These reports are frequently monitored by various committees and regulatory authorities.
- Creating these reports with drill down hierarchy will make it much more palatable, as huge amount of data are converted as reports.
- PROC STREAM provides us the easy way achieve these with simple coding technique.

PROCEDURE SYNTAX

```
proc stream outfile= fileref <option(s)>;  
begin <text-1> <text-n> ;;;;
```

PROC STREAM

- PROC STREAM provides a formal and robust tool to allow a SAS job stream to include any text-based content, including macro variables and macros, by redirecting the results of SAS tokenization of the input file to another location.
- Any text between a BEGIN keyword (the first token following the PROC STREAM statement) and four adjacent semi-colons (;;;;) is parsed by the SAS word scanner and passed to PROC STREAM for processing.

SAFETY TABLES AND LISTINGS

- Safety summary or count tables are very important for physicians and pharmaceutical companies to assess the safety profile of the test drug
- The different safety reports are Demography tables, disposition tables, ae tables/listings and lb tables/listings
- **Example:** AE Table - These tables usually display the number of adverse events, the number of patients in each treatment group in whom the event occurred. In most clinical studies, we will have overall AE summary, summary tables of severity, outcome created.

THE PROC STREAM CODE

```
Filename _webout "/path/report/ae.pdf";
proc stream outfile=_webout;
BEGIN
%global pageTitle data hierarchy vars statistic;
<html>
<head>
<title>pageTitle</title>
</head>
<body>
%let rc = %sysfunc(dosubl(%nrquote(%raw))) ;
<table><tr><td>
<fieldset>
<legend>&pageTitle</legend>
%treeNodes(data = &data
,column = &vars
,columnWidths = 100
,textWidth = 125
,divPrefix = R
,headers = Y
```

THE PROC STREAM CODE

```
,expandedTo = 1  
,tableAttributes = cellspacing="2" cellpadding="0"  
)  
</fieldset>  
</td></tr></table>  
</body>  
</html>  
;;;
```

SAMPLE OUTPUT

Adverse Event By SOC and PT with Severity

	Severity/Intensity	A		B	
⊕ Any Treatment-Emergent Adverse Event	Mild	1 (33.3)	1 (33.3)	2 (66.7)	
⊕ Gastrointestinal Disorders	Mild	1 (33.3)	0	1 (33.3)	
⊕ General Disorders And Administration Site Conditions	Mild	0 (0.0)	0	0 (0.0)	
⊖ Investigations	Mild	0	0 (0.0)	0 (0.0)	
	Moderate	0	1 (33.3)	1 (33.3)	
	Severe	0	0 (0.0)	0 (0.0)	
Blood Pressure Increased	Mild	0	0 (0.0)	0 (0.0)	
	Moderate	0	1 (33.3)	1 (33.3)	
	Severe	0	0 (0.0)	0 (0.0)	
⊕ Musculoskeletal And Connective Tissue Disorders	Mild	0	0 (0.0)	0 (0.0)	
⊕ Skin And Subcutaneous Tissue Disorders	Mild	0	1 (33.3)	1 (33.3)	
⊕ Vascular Disorders	Mild	0 (0.0)	0	0 (0.0)	

CONCLUSION

- The main intention of the paper is to create the PDF output with drill-down hierarchy for easy review of the lumpy reports.
- The SAS coding can be series of macros which are pre-prepared and used inside the PROC STREAM.
- The PROC STREAM can also be used to execute javascript with minimal support coding.
- 1000 page of reports are reviewed in one page by Proc stream.
- The validator/reviewer can use the PROC STREAM procedure in the place of PROC REPORT, with which we can compare the counts as well as check the cosmetic of the layout.