

06 . Mar . 2023

Display Layout Specification to Flexibly Design and Generate Tables

PHUSE US CONNECT 2023

REGENERON®

The Problem



Make the table like THIS!!!

		PBO (reference) (N=xxx)	Trt 1 (N=xxx)	Trt 2 (N=xxx)
Baseline	Summary Statistics	N	xxx	xxx
		n	xxx	xxx
		Mean	xxx	xxx
		SE	xx	xx
Week 4	Summary Statistics	N	xxx	xxx
		n	xxx	xxx
		Mean	xxx	xxx
		SE	xx	xx
Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx
		SE	xx	xx
		95% CI	xxx, xxx	xxx, xxx
Difference vs Reference	LS mean difference	SE	xx	xx
		95% CI	xxx, xxx	xxx, xxx
		P-value	0.000x	0.000x
Week 8	Summary Statistics	N	xxx	xxx
		n	xxx	xxx
		Mean	xxx	xxx
		SE	xx	xx
Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx
		SE	xx	xx
		95% CI	xxx, xxx	xxx, xxx
Difference vs Reference	LS mean difference	SE	xx	xx
		95% CI	xxx, xxx	xxx, xxx
		P-value	0.000x	0.000x

		Summary Statistics				Statistics based on ANCOVA						
Visit	Treatment	N	n	Mean	SE	LS Means			Difference vs Reference			
						Est	SE	95% CI	Est	SE	95% CI	P-value
Baseline	PBO (reference)	xxx	xxx	xxx	xx							
	Trt 1	xxx	xxx	xxx	xx							
	Trt 2	xxx	xxx	xxx	xx							
Week 4	PBO (reference)	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.000xx
	Trt 1	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.000xx
	Trt 2	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.000xx
Week 8	PBO (reference)	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.000xx
	Trt 1	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.000xx
	Trt 2	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.000xx

Make it like THIS!!!



No, like THIS!!!



		Visit (Unit)		
		Baseline	4	8
PBO (reference) (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Trt 1 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Comparison to Placebo	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x
Trt 2 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Comparison to Reference	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x

The Problem Deconstructed

		Statistic										
Visit	Treatment	Summary Statistics				Statistics based on ANCOVA						
		N	n	Mean	SE	LS Means			Difference vs. Reference			
Visit	Treatment					Est.	SE	95% CI	Est.	SE	95% CI	P-value
Baseline	PBO (reference)	xxx	xxx	xxx	x.x							
	Trt 1	xxx	xxx	xxx	x.x							
	Trt 2	xxx	xxx	xxx	x.x							
Week 4	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
	Trt 1	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
	Trt 2	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
Week 8	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx				
	Trt 1	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
	Trt 2	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x

Visit Statistic Treatment

				PBO (reference) (N=xxx)	Trt 1 (N=xxx)	Trt 2 (N=xxx)
Baseline	Summary Statistics	N		xxx	xxx	xxx
		n		xxx	xxx	xxx
		Mean		xxx	xxx	xxx
		SE		x.x	x.x	x.x
Week 4	Summary Statistics	N		xxx	xxx	xxx
		n		xxx	xxx	xxx
		Mean		xxx	xxx	xxx
		SE		x.x	x.x	x.x
	Statistics based on ANCOVA	LS Means		xxx	xxx	xxx
		SE		x.x	x.x	x.x
		95% CI		xxx, xxx	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference			xxx	xxx
		SE			x.x	x.x
		95% CI			xxx, xxx	xxx, xxx
		P-value			0.000x	0.000x
Week 8	Summary Statistics	N		xxx	xxx	xxx
		n		xxx	xxx	xxx
		Mean		xxx	xxx	xxx
		SE		x.x	x.x	x.x
	Statistics based on ANCOVA	LS Means		xxx	xxx	xxx
		SE		x.x	x.x	x.x
		95% CI		xxx, xxx	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference			xxx	xxx
		SE			x.x	x.x
		95% CI			xxx, xxx	xxx, xxx
		P-value			0.000x	0.000x

1. Same underlying information
 2. Different layouts
 3. Reformat or hide some statistic

Treatment Statistic Visit

			Visit (Unit)		
			Baseline	4	8
PBO (N=xxx)	n		xx	xx	xx
	LS Mean		xxx	xxx	xxx
	SE		xxx	xxx	xxx
Trt 1 (N=xxx)	n		xx	xx	xx
	LS Mean		xxx	xxx	xxx
	SE		xxx	xxx	xxx
	Comparison to Placebo				
	LS Mean Diff			xxx	xxx
	LS Diff SE			xxx	xxx
Trt 2 (N=xxx)	n		xx	xx	xx
	LS Mean		xxx	xxx	xxx
	SE		xxx	xxx	xxx
	Comparison to Reference				
	LS Mean Diff			xxx	xxx
	LS Diff SE			xxx	xxx
	P-value			0.000x	0.000x

The Solution

Display Layout Specifications and Flexible Table Generator



Agenda

1. Upstream Process and the Analysis Results Dataset (ARD)
2. Table Flexibility
 - i. Content
 - ii. Layout
3. Display Layout Specifications
4. Conclusion

Agenda

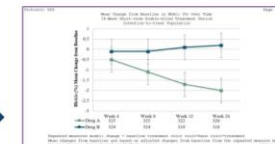
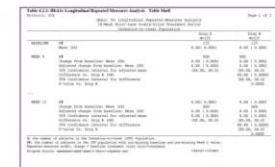
1. Upstream Process and the Analysis Results Dataset (ARD)
2. Table Flexibility
 - i. Content
 - ii. Layout
3. Display Layout Specifications
4. Conclusion

Analysis Results Dataset (ARD)



Description

The Analysis Results Standard will seek to add normative and informative content by illustrating analysis dataset structure, including relevant controlled terminology, methodology guidance, and standardized analysis results metadata for TFL generation for commonly accepted analysis endpoints.

[illegible]

Upstream Process

Analysis Results Dataset (ARD)

ARM	STATCLS1	STATX	STATCD	AVISIT	AVISITN	RESULT
PBO	Summary Statistics	N	BIGN	Baseline	0	xx
PBO	Summary Statistics	Mean	MEAN	Baseline	0	xx.x
PBO	Summary Statistics	SE	SE	Baseline	0	xx.x
PBO	Summary Statistics	n	N	Week 4	4	xx
PBO	Summary Statistics	Mean	MEAN	Week 4	4	xx
PBO	Summary Statistics	SE	SE	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	SE	LSMEANSE	Week 4	4	xx
.....						
Trt 1	Summary Statistics	n	N	Week 4	4	xx
Trt 1	Summary Statistics	Mean	MEAN	Week 4	4	xx.x
Trt 1	Summary Statistics	SE	SE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	SE	SE	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Mean Diff	LSMEANDIFF	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Diff SE	LSMEANDIFFSE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	P-Value	LSMEANPVAL	Week 4	4	xx.x
.....						
Trt 2	Summary Statistics	n	N	Week 8	8	Xx
Trt 2	Summary Statistics	Mean	MEAN	Week 8	8	xx.x
Trt 2	Summary Statistics	SE	SE	Week 8	8	xx.x
Trt 2	Statistics Based on ANCOVA	LS Mean Diff	LSMEANDIFF	Week 8	4	xx.x
Trt 2	Statistics Based on ANCOVA	LS Diff SE	LSMEANDIFFSE	Week 8	4	xx
Trt 2	Statistics Based on ANCOVA	P-Value	LSMEANPVAL	Week 8	4	xx.x
.....						

NOTE: We have been storing the results dataset before CDISC developed ARD.
Therefore, the concept is the same, but the exact structure will differ.

Agenda

1. Upstream Process and the Analysis Results Dataset (ARD)
2. Table Flexibility
 - i. Content
 - ii. Layout
3. Display Layout Specifications
4. Conclusion

Table Flexibility

Content and Layout

Content

		Statistics based on ANCOVA			
		Difference vs Reference			
N	n	Est.	95% CI		P-value

					Statistics based on ANCOVA				
Summary Statistics				LS Means		Difference vs Reference			
N	n	Mean	SE	Est.	SE	Est.	95% CI	P-value	

Statistics based on ANCOVA										
Summary Statistics				LS Means			Difference vs Reference			
N	n	Mean	SE	Est.	SE	95% CI	Est.	SE	95% CI	P-value

Layout

		PBO (reference) (N=xxx)		Trt 1 (N=xxx)	Trt 2 (N=xxx)
Baseline	Summary Statistics	N	xxx	xxx	xxx
		n	xxx	xxx	xxx
		Mean	xxx	xxx	xxx
		SE	x.x	x.x	x.x
Week 4	Summary Statistics	N	xxx	xxx	xxx
		n	xxx	xxx	xxx
		Mean	xxx	xxx	xxx
		SE	x.x	x.x	x.x
	Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx
			SE	x.x	x.x
			95% CI	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference		xxx	xxx
			SE	x.x	x.x
			95% CI	xxx, xxx	xxx, xxx
			P-value	0.0000	0.0000
Week 8	Summary Statistics	N	xxx	xxx	xxx
		n	xxx	xxx	xxx
		Mean	xxx	xxx	xxx
		SE	x.x	x.x	x.x
	Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx
			SE	x.x	x.x
			95% CI	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference		xxx	xxx
			SE	x.x	x.x
			95% CI	xxx, xxx	xxx, xxx
			P-value	0.0000	0.0000

		Summary Statistics		Statistics based on ANCOVA						
					LS Means		Difference vs Reference			
Visit	Treatment	N	n	Mean	SE	Est.	SE	95% CI	Est.	P-value
Baseline	PBO (reference)	xxx	xxx	xxx	x.x					
		xxx	xxx	xxx	x.x					
		xxx	xxx	xxx	x.x					
		xxx	xxx	xxx	x.x					
Week 4	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx		
		xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	0.0000
		xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	0.0000
		xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	0.0000
Week 8	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx		
		xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	0.0000
		xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	0.0000
		xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	0.0000

		Visit (Unit)		
		Baseline	4	8
PBO (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Trt 1 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Comparison to Placebo	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.0000	0.0000
Trt 2 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Comparison to Reference	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.0000	0.0000

Table Flexibility

Flexible Table Generator

```
%macro flexible_table_generator(  
  ...
```

```
  ...
```

Content

```
  statvar = /* List of statistics to display */,  
  combvar = /* Combine variables into a new statistic to display */,
```

Layout

```
  colvar  = /* Variables used to define the columns */,  
  rowvar  = /* Variables used to define the rows */,
```

```
  ...
```

```
);
```

NOTE: There are additional parameters in the macro such as DATAIN. For simplicity and focus, parameters being displayed are limited to those that contribute to table flexibility.

Table Flexibility

Content

STATX	STATCD
N	BIGN
n	N
Mean	MEAN
SE	SE
LS Mean	LSMEAN
SE	LSMEANSE
LS Mean Lower Confidence Limit	LSMEANLCL
LS Mean Upper Confidence Limit	LSMEANUCL
LS Mean Diff	LSMEANDIFF
LS Diff SE	LSMEANDIFFSE
LS Diff Lower Confidence Limit	LSDIFFLCL
LS Diff Upper Confidence Limit	LSDIFFUCL
P-Value	LSMEANPVAL
...	

Statistics based on ANCOVA					
Difference vs Reference					
N	n	Est.	95% CI	P-value	
BIGN	N	LSMEANDIFF	LSDIFFCL	LSMEANPVALUE	

Statistics based on ANCOVA					
Summary Statistics				LS Means	
				Difference vs Reference	
N	n	Mean	SE	Est.	SE
				Est.	95% CI
					P-value
BIGN	N	MEAN	SE	LSMEAN	LSMEANSE
				LSMEANDIFF	LSDIFFCL
					LSMEANPVALUE

Statistics based on ANCOVA					
Summary Statistics				LS Means	
				Difference vs Reference	
N	n	Mean	SE	Est.	SE
				95% CI	
				Est.	SE
				95% CI	P-value
BIGN	N	MEAN	SE	LSMEAN	LSMEANSE
				LSMEANLCL	
				LSMEANDIFF	LSMEANDIFFSE
				LSDIFFCL	
					LSMEANPVALUE

Table Flexibility Content

```
%macro_flexible_table_generator(  
...  
  statvar =  
...  
);
```

Statistics based on ANCOVA					
Differences vs Reference					
N	n	Est.	95% CI	P-value	
BIGN	N	LSMEANDIFF	LSDIFFCL	LSMEANPVALUE	

combvar = LSDIFFCL(type=CI, vars=LSDIFFLCL LSDIFFUCL, label="95% CI")

STATX	STATCD	RESULT
LS Diff Lower Confidence Limit	LSDIFFLCL	82
LS Diff Upper Confidence Limit	LSDIFFUCL	94



STATX	STATCD	RESULT
95% CI	LSDIFFCL	(82, 94)

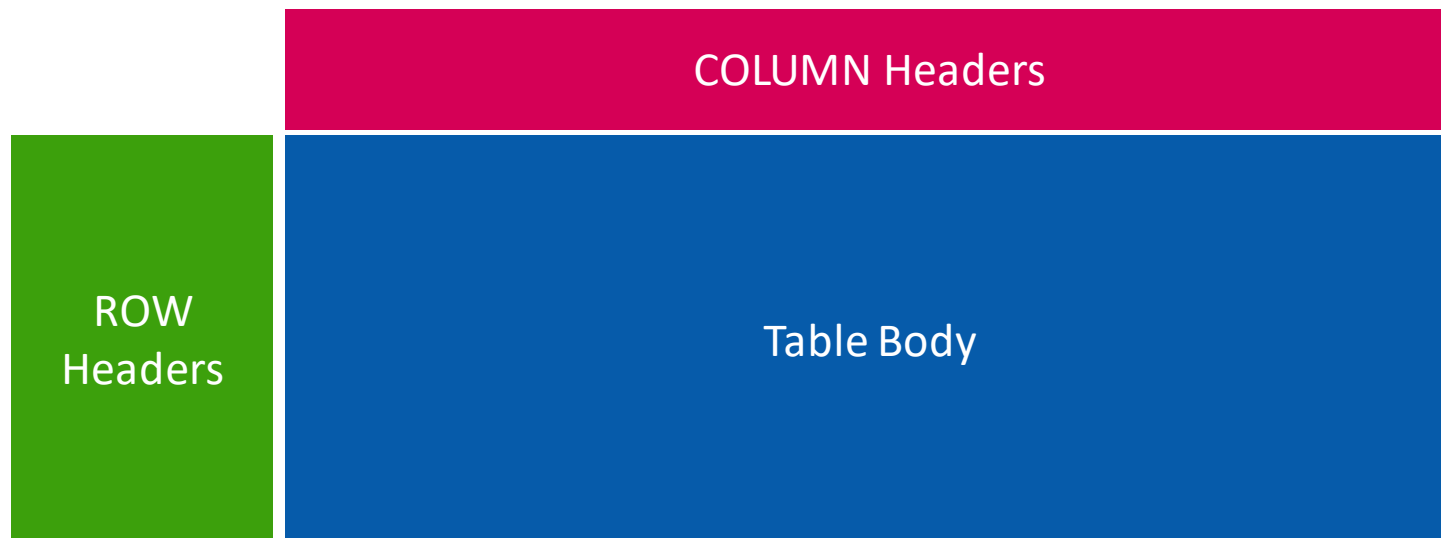
STATX	STATCD
N	BIGN
n	N
Mean	MEAN
SE	SE
LS Mean	LSMEAN
SE	LSMEANSE
LS Mean Lower Confidence Limit	LSMEANLCL
LS Mean Upper Confidence Limit	LSMEANUCL
LS Mean Diff	LSMEANDIFF
LS Diff SE	LSMEANDIFFSE
LS Diff Lower Confidence Limit	LSDIFFLCL
LS Diff Upper Confidence Limit	LSDIFFUCL
P-Value	LSMEANPVAL
...	

↑ ???
LSDIFFCL

Provide method to combine different variables and change its format.

Table Flexibility

Layout: General



Display Flexibility

Layout: Rows and Columns



Row Headers				Column Headers		
				PBO (reference) (N=xxx)	Trt 1 (N=xxx)	Trt 2 (N=xxx)
Baseline	Summary Statistics		N	xxx	xxx	xxx
			n	xxx	xxx	xxx
			Mean	xxx	xxx	xxx
			SE	x.x	x.x	x.x
Week 4	Summary Statistics		N	xxx	xxx	xxx
			n	xxx	xxx	xxx
			Mean	xxx	xxx	xxx
			SE	x.x	x.x	x.x
	Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx	xxx
			SE	x.x	x.x	x.x
			95% CI	xxx, xxx	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference	SE	xxx	xxx	xxx
			95% CI	xxx, xxx	xxx, xxx	xxx, xxx
			P-value	0.0000	0.0000	0.0000
Week 8	Summary Statistics		N	xxx	xxx	xxx
			n	xxx	xxx	xxx
			Mean	xxx	xxx	xxx
			SE	x.x	x.x	x.x
	Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx	xxx
			SE	x.x	x.x	x.x
			95% CI	xxx, xxx	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference	SE	xxx	xxx	xxx
			95% CI	xxx, xxx	xxx, xxx	xxx, xxx
			P-value	0.0000	0.0000	0.0000
				Table Body		

Row Headers		Column Headers										
		Summary Statistics				Statistics based on ANCOVA						
						LS Means		Difference vs Reference				
Visit	Treatment	N	n	Mean	SE	Est	SE	95% CI	Est	SE	95% CI	P-value
Baseline	PBO (reference)	xxx	xxx	xxx	x.x							
	Trt 1	xxx	xxx	xxx	x.x							
	Trt 2	xxx	xxx	xxx	x.x							
Week 4	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx				
	Trt 1	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.0000
	Trt 2	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.0000
Week 8	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx				
	Trt 1	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.0000
	Trt 2	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.0000
		Table Body										

Row Headers		Column Headers		
		Visit (Unit)		
		Baseline	4	8
PBO (N=xxx)	n	xxx	xxx	xxx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Trt 1 (N=xxx)	n	xxx	xxx	xxx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Placebo			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x
Trt 2 (N=xxx)	n	xxx	xxx	xxx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Reference			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x
		Table Body		

Column	Treatment
Row	Visit, Statistics

Column	Statistics
Row	Visit, Treatment

Column	Visit
Row	Treatment, Statistics

Table Flexibility

Rows and Columns

ARM	STATCLS1	STATX	STATCD	AVISIT	AVISITN	RESULT
PBO	Summary Statistics	BIGN	BIGN	Baseline	0	xx
PBO	Summary Statistics	Mean	MEAN	Baseline	0	xx.x
PBO	Summary Statistics	SE	SE	Baseline	0	xx.x
PBO	Summary Statistics	BIGN	BIGN	Week 4	4	xx
PBO	Summary Statistics	Mean	MEAN	Week 4	4	xx
PBO	Summary Statistics	SE	SE	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	SE	LSMEANSE	Week 4	4	xx
.....						
Trt 1	Summary Statistics	BIGN	BIGN	Week 4	4	xx
Trt 1	Summary Statistics	Mean	MEAN	Week 4	4	xx.x
Trt 1	Summary Statistics	SE	SE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	SE	SE	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Mean Diff	LSMEAN DIFF	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Diff SE	LSMEAN DIFFSE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	P-Value	LSMEAN PVAL	Week 4	4	xx.x
.....						
Trt 2	Summary Statistics	BIGN	BIGN	Week 8	8	Xx
Trt 2	Summary Statistics	Mean	MEAN	Week 8	8	xx.x
Trt 2	Summary Statistics	SE	SE	Week 8	8	xx.x
Trt 2	Statistics Based on ANCOVA	LS Mean Diff	LSMEAN DIFF	Week 8	4	xx.x
Trt 2	Statistics Based on ANCOVA	LS Diff SE	LSMEAN DIFFSE	Week 8	4	xx
Trt 2	Statistics Based on ANCOVA	P-Value	LSMEAN PVAL	Week 8	4	xx.x
.....						

```
%macro_flexible_table_generator( ...  
    colvar = arm      (sort=armn)  
    rowvar  = avisit   (sort=avisitn, label="Visit")  
    statcls1 (sort=statn)  
    statcls2 (sort=statn)  
    statx    (sort=statn)  
... );
```

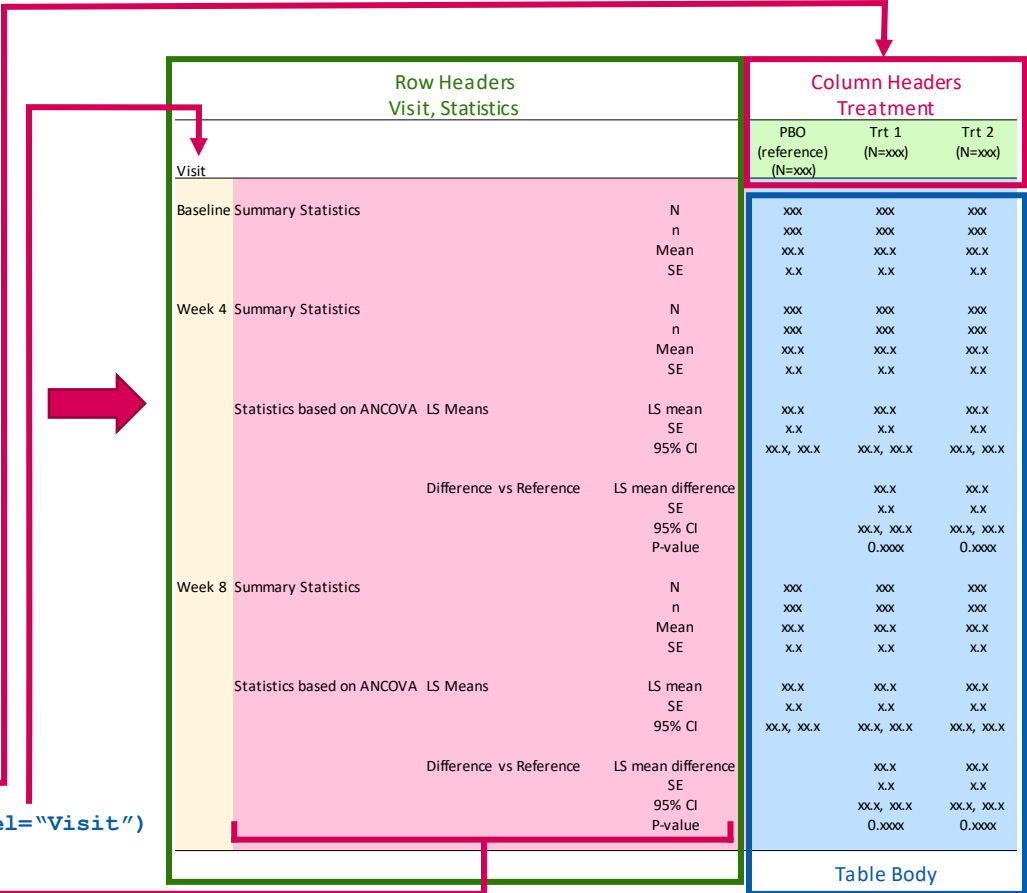


Table Flexibility

Rows and Columns

ARM	STATCLS1	STATX	STATCD	AVISIT	AVISITN	RESULT
PBO	Summary Statistics	BIGN	BIGN	Baseline	0	xx
PBO	Summary Statistics	Mean	MEAN	Baseline	0	xx.x
PBO	Summary Statistics	SE	SE	Baseline	0	xx.x
PBO	Summary Statistics	BIGN	BIGN	Week 4	4	xx
PBO	Summary Statistics	Mean	MEAN	Week 4	4	xx
PBO	Summary Statistics	SE	SE	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	SE	LSMEANSE	Week 4	4	xx
.....						
Trt 1	Summary Statistics	BIGN	BIGN	Week 4	4	xx
Trt 1	Summary Statistics	Mean	MEAN	Week 4	4	xx.x
Trt 1	Summary Statistics	SE	SE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	SE	SE	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Mean Diff	LSMEAN DIFF	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Diff SE	LSMEAN DIFFSE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	P-Value	LSMEAN PVAL	Week 4	4	xx.x
.....						
Trt 2	Summary Statistics	BIGN	BIGN	Week 8	8	Xx
Trt 2	Summary Statistics	Mean	MEAN	Week 8	8	xx.x
Trt 2	Summary Statistics	SE	SE	Week 8	8	xx.x
Trt 2	Statistics Based on ANCOVA	LS Mean Diff	LSMEAN DIFF	Week 8	4	xx.x
Trt 2	Statistics Based on ANCOVA	LS Diff SE	LSMEAN DIFFSE	Week 8	4	xx
Trt 2	Statistics Based on ANCOVA	P-Value	LSMEAN PVAL	Week 8	4	xx.x
.....						



Row Headers	
Visit	Treatment
Baseline	PBO (reference)
	Trt 1
	Trt 2
Week 4	PBO (reference)
	Trt 1
	Trt 2
Week 8	PBO (reference)
	Trt 1
	Trt 2

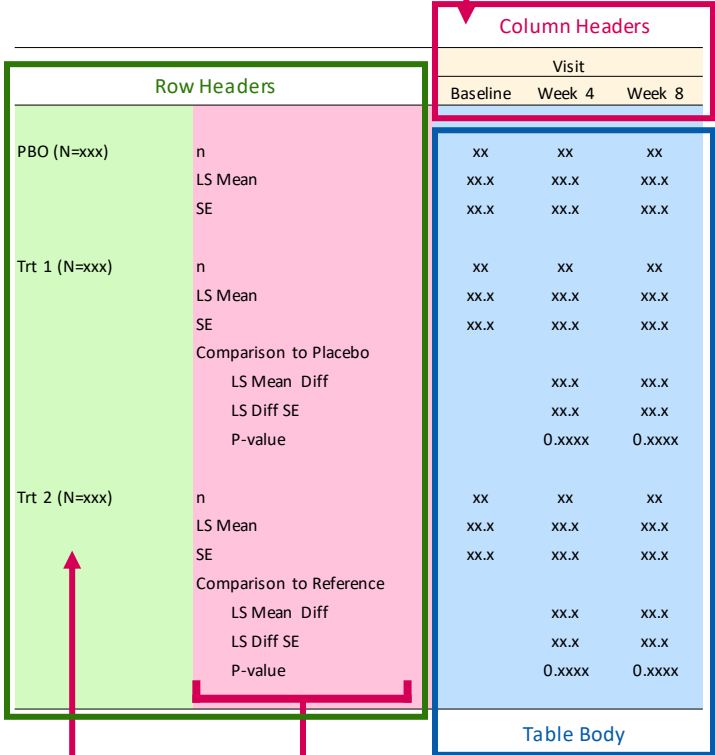
Column Headers											
Summary Statistics				Statistics based on ANCOVA							
				LS Means			Difference vs Reference				
N	n	Mean	SE	Est.	SE	95% CI	Est.	SE	95% CI	P-value	
xxx	xxx	xx.x	x.x								
xxx	xxx	xx.x	x.x								
xxx	xxx	xx.x	x.x								
xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x					
xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx	
xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx	
xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x					
xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x					
xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx	
xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx	

```
%macro_flexible_table_generator( ...  
    colvar = statx (head=statcls1 statcls2)  
    rowvar = avisit (sort=avisitn, label="Visit")  
    arm (sort=armn, label="Treatment")  
... );
```

Table Flexibility

Rows and Columns

ARM	STATCLS1	STATX	STATCD	AVISIT	AVISITN	RESULT
PBO	Summary Statistics	BIGN	BIGN	Baseline	0	xx
PBO	Summary Statistics	Mean	MEAN	Baseline	0	xx.x
PBO	Summary Statistics	SE	SE	Baseline	0	xx.x
PBO	Summary Statistics	BIGN	BIGN	Week 4	4	xx
PBO	Summary Statistics	Mean	MEAN	Week 4	4	xx
PBO	Summary Statistics	SE	SE	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
PBO	Statistics Based on ANCOVA	SE	LSMEANSE	Week 4	4	xx
.....						
Trt 1	Summary Statistics	BIGN	BIGN	Week 4	4	xx
Trt 1	Summary Statistics	Mean	MEAN	Week 4	4	xx.x
Trt 1	Summary Statistics	SE	SE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	LS Mean	LSMEAN	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	SE	SE	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Mean Diff	LSMEAN DIFF	Week 4	4	xx.x
Trt 1	Statistics Based on ANCOVA	LS Diff SE	LSMEAN DIFFSE	Week 4	4	xx
Trt 1	Statistics Based on ANCOVA	P-Value	LSMEAN PVAL	Week 4	4	xx.x
.....						
Trt 2	Summary Statistics	BIGN	BIGN	Week 8	8	Xx
Trt 2	Summary Statistics	Mean	MEAN	Week 8	8	xx.x
Trt 2	Summary Statistics	SE	SE	Week 8	8	xx.x
Trt 2	Statistics Based on ANCOVA	LS Mean Diff	LSMEAN DIFF	Week 8	4	xx.x
Trt 2	Statistics Based on ANCOVA	LS Diff SE	LSMEAN DIFFSE	Week 8	4	xx
Trt 2	Statistics Based on ANCOVA	P-Value	LSMEAN PVAL	Week 8	4	xx.x
.....						



```
%macro_flexible_table_generator( ...  
    colvar = avisit (sort=avisitn, label="Visit")  
    rowvar = arm (sort=armn, label= )  
    statcls1 (sort=statn, label=, indent=Y)  
    statx (sort=statn, label=, indent=Y)  
... );
```

Table Flexibility

Layout: Sub-Options

Option	Scope	Description
SORT	ROWVAR	Variable used to define the sort order
LABEL	ROWVAR, COLVAR	Define the row or column label to be used for the variable
INDENT	ROWVAR	Indent row header
HEAD	COLVAR	Define column header nesting

Table Flexibility

Sub-Options: SORT

ARM	ARMN
PBO	0
Trt 1	1
Trt 2	2

AVISIT	AVISITN
Baseline	0
Week 4	1
Week 8	2
Week 12	3

```
%macro_flexible_table_generator( ...
  colvar = statx (head=statcls1 statcls2)
  rowvar = avisit (sort=avisitn, label="Visit")
             arm   (sort=armn, label="Treatment")
... );
```

- Variable defined in the SORT sub-option is used as the sorting variable.
- In this example, alpha numeric sorting of AVISIT would have sorted Week 12 before Week 4

Visit	Treatment	Summary Statistics				Statistics based on ANCOVA						
		N	n	Mean	SE	LS Means			Difference vs Reference			
						Est.	SE	95% CI	Est.	SE	95% CI	P-value
Baseline	PBO (reference)	xxx	xxx	xx.x	x.x							
	Trt 1	xxx	xxx	xx.x	x.x							
	Trt 2	xxx	xxx	xx.x	x.x							
Week 4	PBO (reference)	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x				
	Trt 1	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx
	Trt 2	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx
Week 8	PBO (reference)	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x				
	Trt 1	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx
	Trt 2	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx
Week 12	PBO (reference)	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x				
	Trt 1	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx
	Trt 2	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx

Table Flexibility

Sub-Options: LABEL

```
%macro_flexible_table_generator( ...  
  colvar = statx (head=statcls1 statcls2)  
  rowvar = avisit (sort=avisitn, label="Visit")  
  arm (sort=armn, label="Treatment")  
... );
```

		Statistics based on ANCOVA										
		Summary Statistics				LS Means		Difference vs Reference				
Visit	Treatment	N	n	Mean	SE	Est.	SE	95% CI	Est.	SE	95% CI	P-value
Baseline	PBO (reference)	xxx	xxx	xx.x	x.x							
	Trt 1	xxx	xxx	xx.x	x.x							
	Trt 2	xxx	xxx	xx.x	x.x							
Week 4	PBO (reference)	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x				
	Trt 1	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx
	Trt 2	xxx	xxx	xx.x	x.x	xx.x	x.x	xx.x, xx.x	xx.x	x.x	xx.x, xx.x	0.xxxx
...												

```
%macro_flexible_table_generator( ...  
  colvar = avisit (sort=avisitn, label="Visit")  
  rowvar = statcls1 (sort=statn, label=, indent=Y)  
  statx (sort=statn, label=, indent=Y)  
... );
```

		Visit		
		Baseline	Week 4	Week 8
PBO (N=xxx)	n	xx	xx	xx
	LS Mean	xx.x	xx.x	xx.x
	SE	xx.x	xx.x	xx.x
Trt 1 (N=xxx)	n	xx	xx	xx
	LS Mean	xx.x	xx.x	xx.x
	SE	xx.x	xx.x	xx.x
	Comparison to Placebo			
	LS Mean Diff		xx.x	xx.x
	LS Diff SE		xx.x	xx.x
	P-value		0.xxxx	0.xxxx

- If label is not defined, the variable label will be used
- If populated, the defined label will be used as the row/column header label

Table Flexibility

Sub-Options: INDENT

```
%macro_flexible_table_generator( ...
  colvar  = avisit  (sort=avisitn, label="Visit")
  rowvar  = statcls1 (sort=statn, label=, indent=Y)
           statx    (sort=statn, label=, indent=Y)
... );
```

		Visit		
		Baseline	Week 4	Week 8
PBO (N=xxx)	n	xx	xx	xx
	LS Mean	xx.x	xx.x	xx.x
	SE	xx.x	xx.x	xx.x
Trt 1 (N=xxx)	n	xx	xx	xx
	LS Mean	xx.x	xx.x	xx.x
	SE	xx.x	xx.x	xx.x
	Comparison to Placebo			
	LS Mean Diff		xx.x	xx.x
	LS Diff SE		xx.x	xx.x
	P-value		0.xxxx	0.xxxx
...				

```
%macro_flexible_table_generator( ...
  colvar  = arm      (sort=armn)
  rowvar  = avisit   (sort=avisitn, label="Visit")
           statcls1  (sort=statn)
           statcls2  (sort=statn)
           statx     (sort=statn)
... );
```

		Visit			PBO (reference) (N=xxx)	Trt 1 (N=xxx)	Trt 2 (N=xxx)
Baseline	Summary Statistics	N	xxx	xxx	xxx		
		n	xxx	xxx	xxx		
		Mean	xxx.X	xxx.X	xxx.X		
		SE	x.X	x.X	x.X		
Week 4	Summary Statistics	N	xxx	xxx	xxx		
		n	xxx	xxx	xxx		
		Mean	xxx.X	xxx.X	xxx.X		
		SE	x.X	x.X	x.X		
	Statistics based on ANCOVA LS Means	LS mean	xxx.X	xxx.X	xxx.X		
		SE	x.X	x.X	x.X		
		95% CI	xxx.X, xxx.X	xxx.X, xxx.X	xxx.X, xxx.X		
Difference vs Reference	LS mean difference		xxx.X	xxx.X			
	SE		x.X	x.X			
	95% CI		xxx.X, xxx.X	xxx.X, xxx.X			
	P-value		0.xxxx	0.xxxx			
...							

- INDENT collapses individual column-based display into an indented single column display
- Top example uses INDENT. Bottom example maintains each variable as separate columns

Table Flexibility

Sub-Options: HEAD

STATCLS1	STATCLS2	STATX	STATCD
Summary Statistics		BIGN	BIGN
Summary Statistics		n	N
Summary Statistics		Mean	MEAN
Summary Statistics		SE	SE
Statistics Based on ANCOVA	LS Mean	LS Mean	LSMEAN
Statistics Based on ANCOVA	LS Mean	SE	LSMEANSE
Statistics Based on ANCOVA	LS Mean	95% CI	LSMEANCI
Statistics Based on ANCOVA	LS Mean Diff	LS Mean Diff	LSMEANDIFF
Statistics Based on ANCOVA	LS Mean Diff	LS Diff SE	LSMEANDIFFSE
Statistics Based on ANCOVA	LS Mean Diff	95% CI	LSMEANDIFFCI
Statistics Based on ANCOVA	LS Mean Diff	P-Value	LSMEANPVAL

```
%macro_flexible_table_generator(  
  colvar = statx (head=statcls1 statcls2)  
  Rowvar = avisit (sort=avisitn, label="Visit")  
  ar = (statcls1, label="Statistics based on ANCOVA")  
  ... );
```

statcls1	Statistics based on ANCOVA											
statcls2	Summary Statistics				LS Means				Difference vs Reference			
statx	N	n	Mean	SE	Est.	SE	95% CI	Est.	SE	95% CI	P-value	

- HEAD defines the variables to be used as nested column headers

Agenda

1. Upstream Process and the Analysis Results Dataset (ARD)
2. Table Flexibility
 - i. Content
 - ii. Layout
3. Display Layout Specifications
4. Conclusion

Display Layout Specifications

Machine Interpretable Metadata to Fully Define a Table

Row Headers				Column Headers			
				PBO (reference) (N=xxx)	Trt 1 (N=xxx)	Trt 2 (N=xxx)	
Baseline	Summary Statistics		N	xxx	xxx	xxx	
			n	xxx	xxx	xxx	
			Mean	xxx	xxx	xxx	
			SE	x.x	x.x	x.x	
Week 4	Summary Statistics		N	xxx	xxx	xxx	
			n	xxx	xxx	xxx	
			Mean	xxx	xxx	xxx	
			SE	x.x	x.x	x.x	
	Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx	xxx	
			SE	x.x	x.x	x.x	
			95% CI	xxx, xxx	xxx, xxx	xxx, xxx	
			Difference vs Reference	LS mean difference	SE	x.x	x.x
	95% CI	xxx, xxx			xxx, xxx		
			P-value	0.0000	0.0000		
	Week 8	Summary Statistics		N	xxx	xxx	xxx
				n	xxx	xxx	xxx
			Mean	xxx	xxx	xxx	
			SE	x.x	x.x	x.x	
Statistics based on ANCOVA		LS Means	LS mean	xxx	xxx	xxx	
			SE	x.x	x.x	x.x	
			95% CI	xxx, xxx	xxx, xxx	xxx, xxx	
			Difference vs Reference	LS mean difference	SE	x.x	x.x
95% CI		xxx, xxx			xxx, xxx		
			P-value	0.0000	0.0000		
				Table Body			

Row Headers		Column Headers										
		Summary Statistics				Statistics based on ANCOVA						
						LS Means		Difference vs. Reference				
Visit	Treatment	N	n	Mean	SE	Est	SE	95% CI	Est	SE	95% CI	P-value
Baseline	PBO (reference)	xxx	xxx	xxx	x.x							
	Trt 1	xxx	xxx	xxx	xx							
	Trt 2	xxx	xxx	xxx	xx							
Week 4	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx				
	Trt 1	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000
	Trt 2	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000
Week 8	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx				
	Trt 1	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.0000
	Trt 2	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.0000
		Table Body										

Row Headers		Column Headers		
		Visit (Unit)		
		Baseline	4	8
PBO (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Trt 1 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Placebo			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x
Trt 2 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Reference			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x
		Table Body		

Column	Treatment
Row	Visit, Statistics

Column	Statistics
Row	Visit, Treatment

Column	Visit
Row	Treatment, Statistics

Develop a structured systematic language (metadata) to describe a table from both a content and layout perspective

Display Layout Specifications

Machine Interpretable Metadata to Fully Define a Table

```
%macro flexible_table_generator(  
...
```

Content

```
statvar = /* List of statistics to display */,  
combvar = /* Combine variables into a new statistic to display */,
```

Layout

```
colvar  = /* Variables used to define the columns */,  
rowvar  = /* Variables used to define the rows */,
```

```
...  
);
```

Option	Scope	Description
SORT	ROWVAR	Variable used to define the sort order
LABEL	ROWVAR, COLVAR	Define the row or column label to be used for the variable
INDENT	ROWVAR	Indent row header
HEAD	COLVAR	Define column header nesting

Develop a tool to use that metadata to
define and create any table design

Agenda

1. Upstream Process and the Analysis Results Dataset (ARD)
2. Table Flexibility
 - i. Content
 - ii. Layout
3. Display Layout Specifications
4. Conclusion

The Problem



Make the table like THIS!!!

		PBO (reference) (N=xxx)	Trt 1 (N=xxx)	Trt 2 (N=xxx)
Baseline	Summary Statistics			
	N	xxx	xxx	xxx
	n	xxx	xxx	xxx
	Mean	xxx	xxx	xxx
Week 4	Summary Statistics			
	N	xxx	xxx	xxx
	n	xxx	xxx	xxx
	Mean	xxx	xxx	xxx
Statistics based on ANCOVA	LS Means	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	95% CI	xxx, xxx	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference	xxx	xxx
Week 8	Summary Statistics			
	N	xxx	xxx	xxx
	n	xxx	xxx	xxx
	Mean	xxx	xxx	xxx
Statistics based on ANCOVA	LS Means	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	95% CI	xxx, xxx	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference	xxx	xxx
		SE	xxx	xxx
		95% CI	xxx, xxx	xxx, xxx
		P-value	0.0000	0.0000

Make it like THIS!!!

Visit	Treatment	Summary Statistics				Statistics based on ANCOVA							
						LS Means				Difference vs Reference			
		N	n	Mean	SE	Est.	SE	95% CI	Est.	SE	95% CI	P-value	
Baseline	PBO (reference)	xxx	xxx	xxx	xx								
	Trt 1	xxx	xxx	xxx	xx								
	Trt 2	xxx	xxx	xxx	xx								
Week 4	PBO (reference)	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000	
	Trt 1	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000	
	Trt 2	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000	
Week 8	PBO (reference)	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000	
	Trt 1	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000	
	Trt 2	xxx	xxx	xxx	xx	xxx	xx	xxx, xxx	xxx	xx	xxx, xxx	0.0000	



No, like THIS!!!

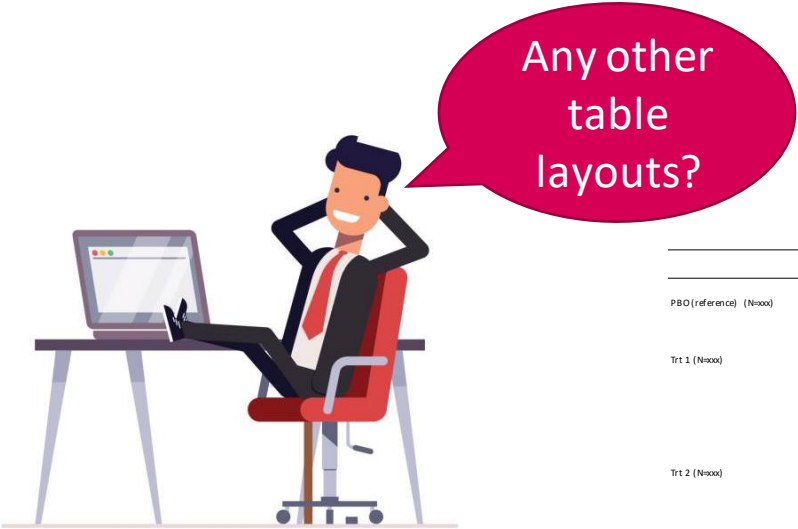


		Visit (Unit)		
		Baseline	4	8
PBO (reference) (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Trt 1 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Placebo			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
Trt 2 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Reference			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value	0.0000	0.0000	0.0000

The Solution

		Summary Statistics				Statistics based on ANCOVA						
Visit	Treatment	N	n	Mean	SE	LS Means		Difference vs. Reference			P-value	
						Est	SE	95% CI	Est	SE		95% CI
Baseline	PBO (reference)	xxx	xxx	xxx	x.x							
	Trt 1	xxx	xxx	xxx	x.x							
	Trt 2	xxx	xxx	xxx	x.x							
Week 4	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
	Trt 1	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
	Trt 2	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
Week 8	PBO (reference)	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx				
	Trt 1	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x
	Trt 2	xxx	xxx	xxx	x.x	xxx	x.x	xxx, xxx	xxx	x.x	xxx, xxx	0.000x

		PBO (reference) (N=xxx)	Trt 1 (N=xxx)	Trt 2 (N=xxx)
Baseline	Summary Statistics	N	xxx	xxx
		n	xxx	xxx
		Mean	xxx	xxx
		SE	x.x	x.x
Week 4	Summary Statistics	N	xxx	xxx
		n	xxx	xxx
		Mean	xxx	xxx
		SE	x.x	x.x
Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx
		SE	x.x	x.x
		95% CI	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference	xxx	xxx
		SE	x.x	x.x
		95% CI	xxx, xxx	xxx, xxx
		P-value	0.000x	0.000x
Week 8	Summary Statistics	N	xxx	xxx
		n	xxx	xxx
		Mean	xxx	xxx
		SE	x.x	x.x
Statistics based on ANCOVA	LS Means	LS mean	xxx	xxx
		SE	x.x	x.x
		95% CI	xxx, xxx	xxx, xxx
	Difference vs Reference	LS mean difference	xxx	xxx
		SE	x.x	x.x
		95% CI	xxx, xxx	xxx, xxx
		P-value	0.000x	0.000x



		Visit (Unit)		
		Baseline	4	8
PBO (reference) (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
Trt 1 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Placebo			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x
Trt 2 (N=xxx)	n	xx	xx	xx
	LS Mean	xxx	xxx	xxx
	SE	xxx	xxx	xxx
	Comparison to Reference			
	LS Mean Diff		xxx	xxx
	LS Diff SE		xxx	xxx
	P-value		0.000x	0.000x