

SAS Visual Analytics Dashboards In Clinical Trials



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PhUSE Single Day Event: Striking the Balance – From Coding to Communications

Frankfurt May 15th, 2018

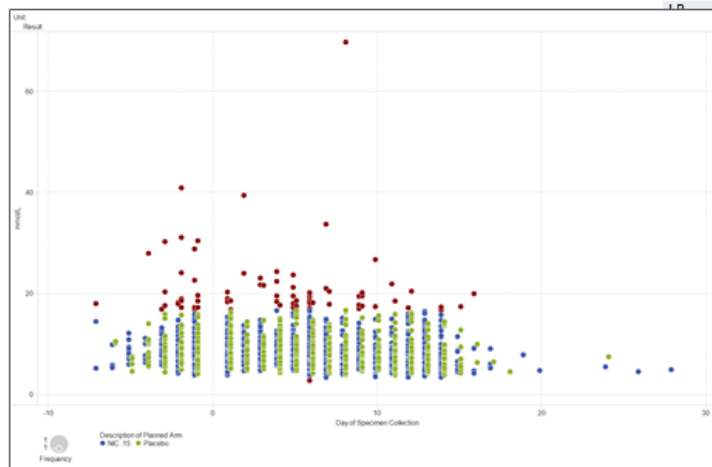
Outline

- Visualisation
- Demonstration
- Take home messages



Visualisation

- Representation of data as a chart or other image



Domain	Subject ID	Test Name	Laboratory Test Result	Laboratory Test Unit	Lower Reference Range Limit	Upper Reference Range Limit	Visit Number	Study Day of Specimen Collection	Reference Range Indicator
LB	101011	Glucose	6.327	mmol/L	3.33	16.65	1	1	Normal
LB	101012	Glucose	8.3805	mmol/L	3.33	16.65	1	1	Normal
LB	101013	Glucose	6.882	mmol/L	3.33	16.65	1	1	Normal
LB	101014	Glucose	7.77	mmol/L	3.33	16.65	1	1	Normal
LB	101017	Glucose	5.2725	mmol/L	3.33	16.65	1	1	Normal
LB	11001	Glucose	6.216	mmol/L	3.33	16.65	1	1	Normal
LB	11006	Glucose	9.324	mmol/L	3.33	16.65	1	1	Normal
LB	11010	Glucose	6.549	mmol/L	3.33	16.65	1	1	Normal
LB	11011	Glucose	8.214	mmol/L	3.33	16.65	1	1	Normal
LB	11013	Glucose	16.761	mmol/L	3.33	16.65	1	1	High
LB	11014	Glucose	6.882	mmol/L	3.33	16.65	1	1	Normal
LB	11015	Glucose	9.9345	mmol/L	3.33	16.65	1	1	Normal
LB	11018	Glucose	5.8275	mmol/L	3.33	16.65	1	1	Normal
LB	11020	Glucose	18.981	mmol/L	3.33	16.65	1	1	High
LB	11023	Glucose	6.771	mmol/L	3.33	16.65	1	1	Normal
LB	11024	Glucose	7.3815	mmol/L	3.33	16.65	1	1	Normal
LB	11026	Glucose	7.9365	mmol/L	3.33	16.65	1	1	Normal
LB	11027	Glucose	9.546	mmol/L	3.33	16.65	1	1	Normal

~ 2800 vs 20 data points

Visualisation in Clinical Trials

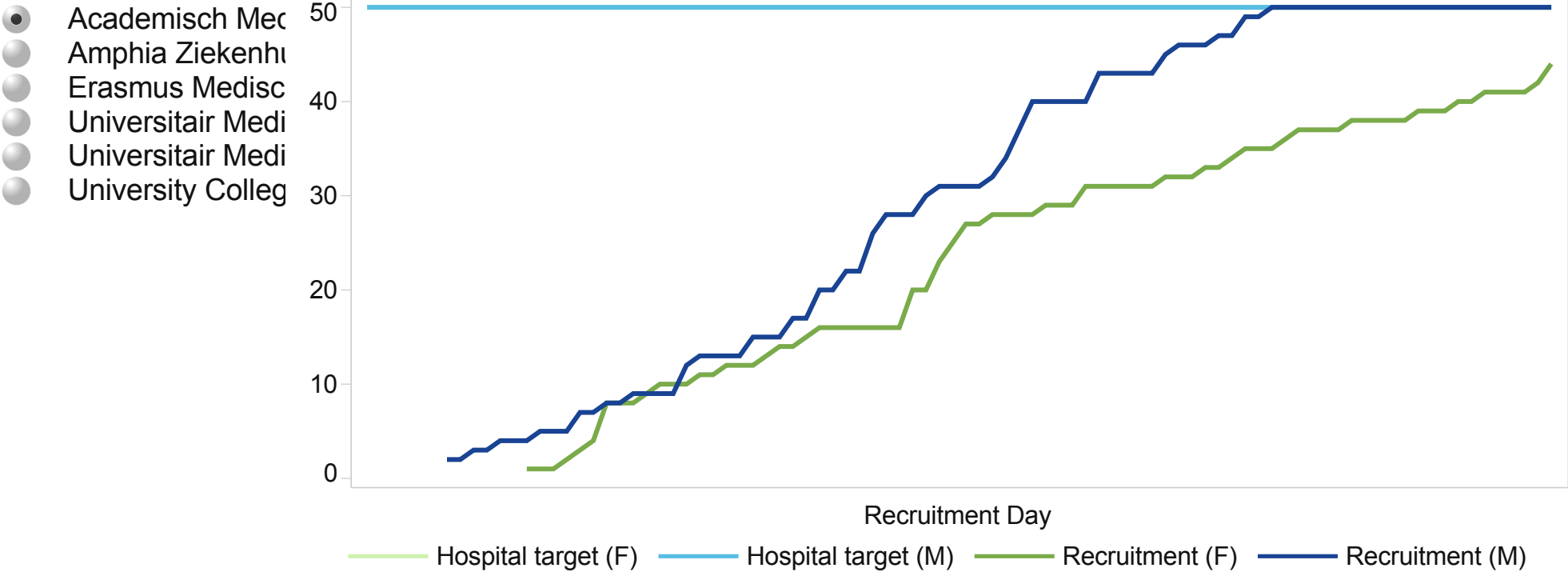
- Early identification of performance, data issues and safety
 - Data quality
 - Risk-based monitoring
 - Data review

Recruitment Progress

- ☐ Birmingham Heartlands
- ☐ BovenIJ Ziekenhuis
- ☐ Ikazia Ziekenhuis
- ☐ London Bridge Hospital
- ☐ Máxima Medisch Centrum
- ☐ Universitair Ziekenhuis

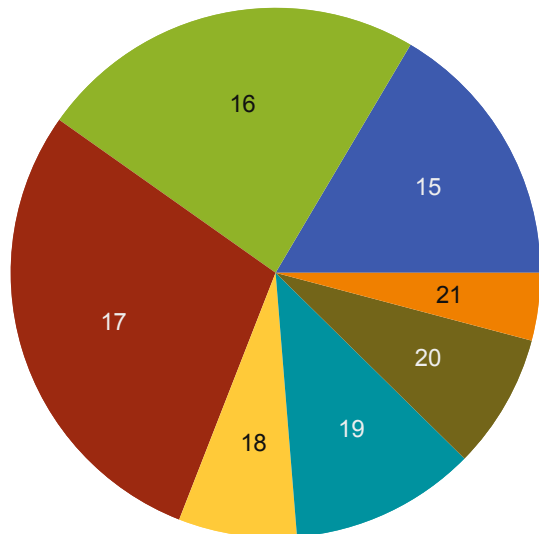


Recruitment Overview-study sites



Subject ID ▲	Gender	BMI Category	Age (1)	Age Category	Alcohol Consumption	Units per week	
1	M	25-<30	89	>75	No	0	
2	M	25-<30	41	36-50	No	0	
3	M	30+	57	51-75	No	0	
4	M	25-<30	69	51-75	Yes	8	
5	M	25-<30	98	>75	No	0	
6	M	25-<30	94	>75	Yes	8	
7	M	30+	51	51-75	Yes	3	
8	M	25-<30	87	>75	Yes	5	
9	M	30+	53	51-75	Yes	1	
10	M	20-<25	61	51-75	No	0	
11	M	20-<25	29	0-35	Yes	2	
12	M	30+	95	>75	Yes	2	

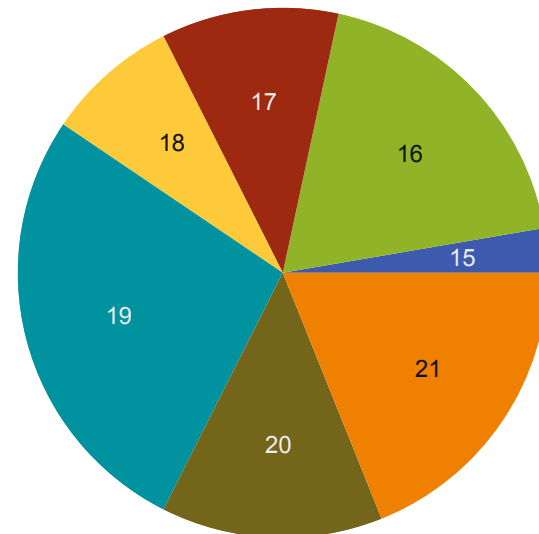
Total Subjects



Unique identifier for site participating in study
 15 16 17 18 19 20 21

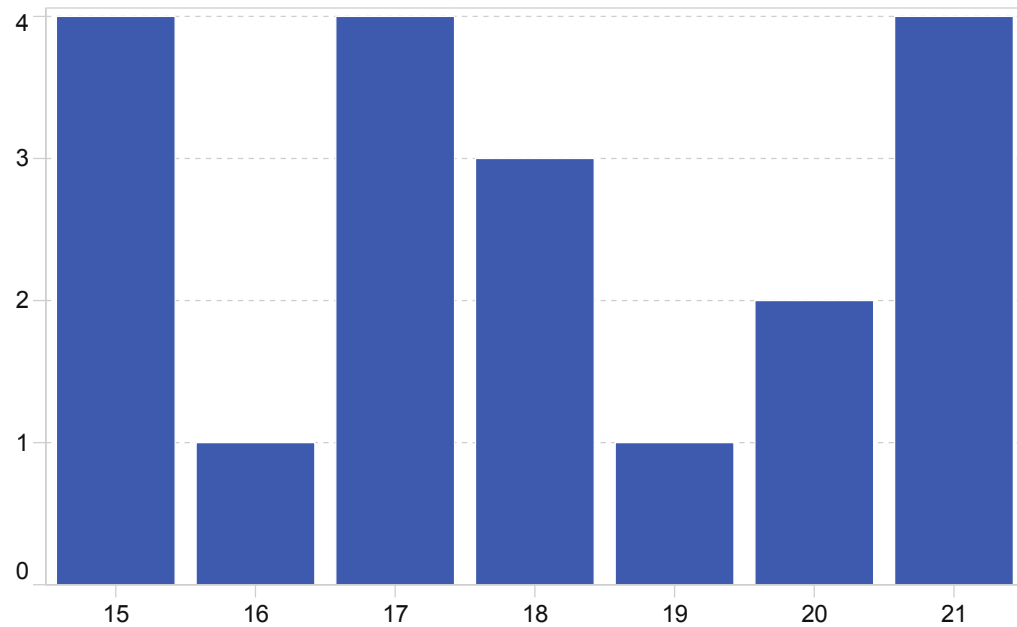
Queries

Total Queries



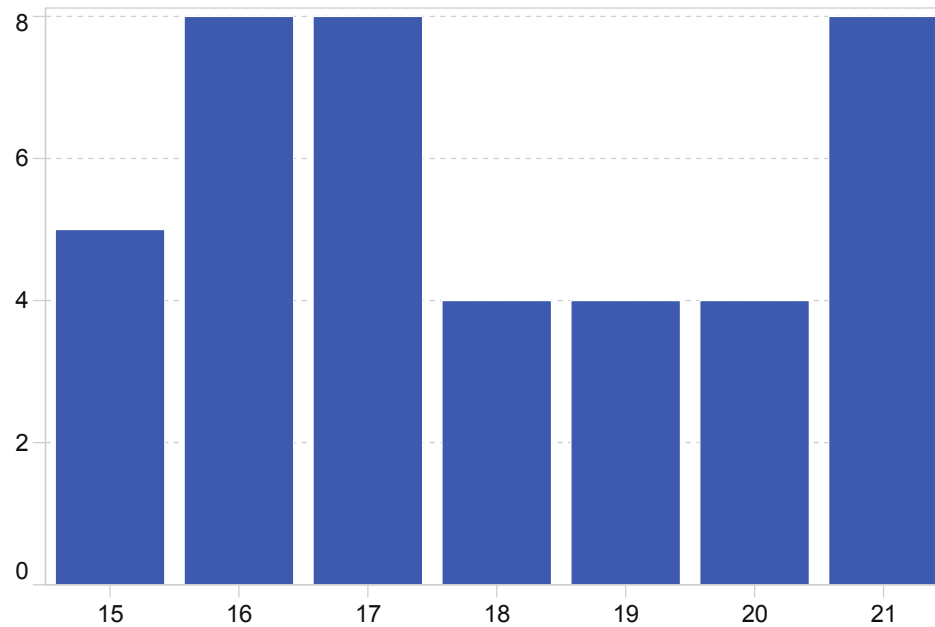
Unique identifier for site participating in study
 15 16 17 18 19 20 21

Time to first reponse (in days)



Unique identifier for site participating in study

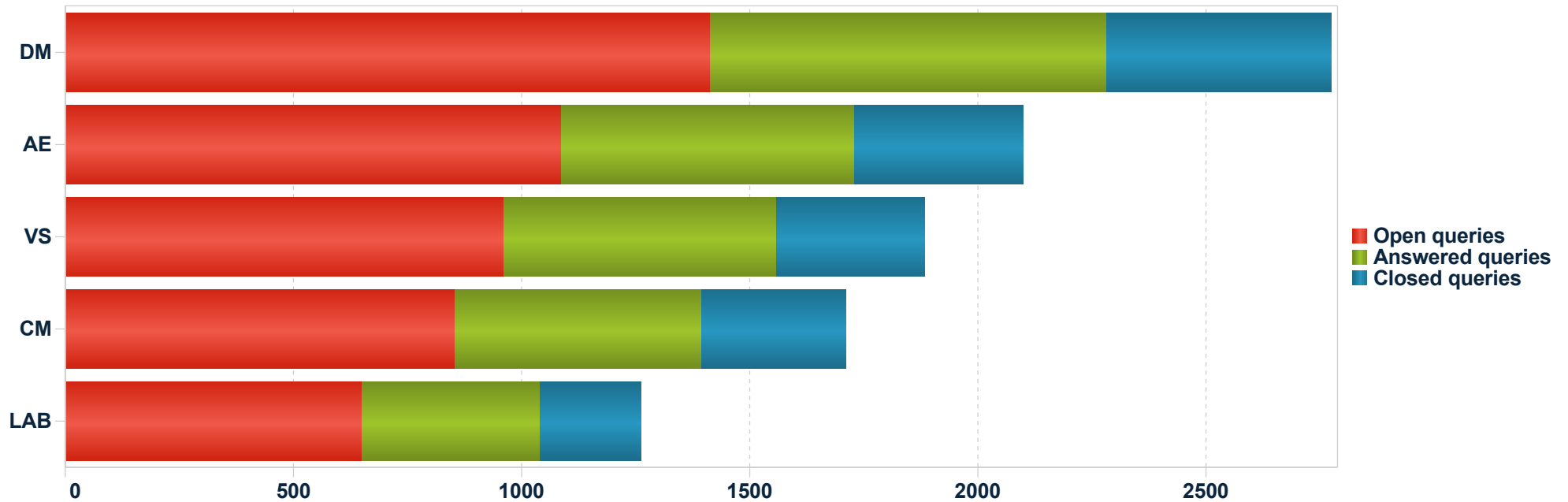
Time to resolve (in days)



Unique identifier for site participating in study

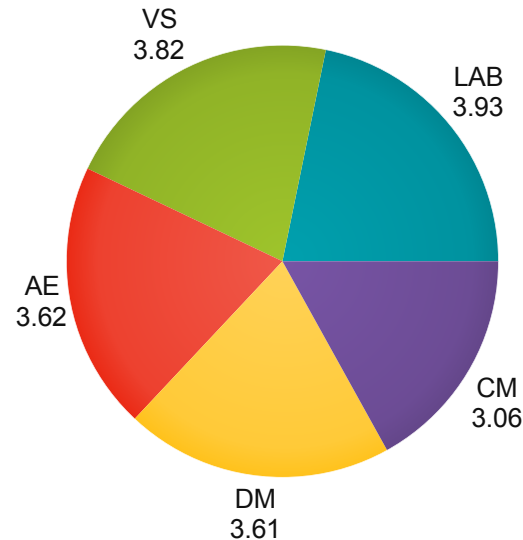
Queries2

Queries per Domain, Country and Site



Queries Response Time per Domain, Country and Site

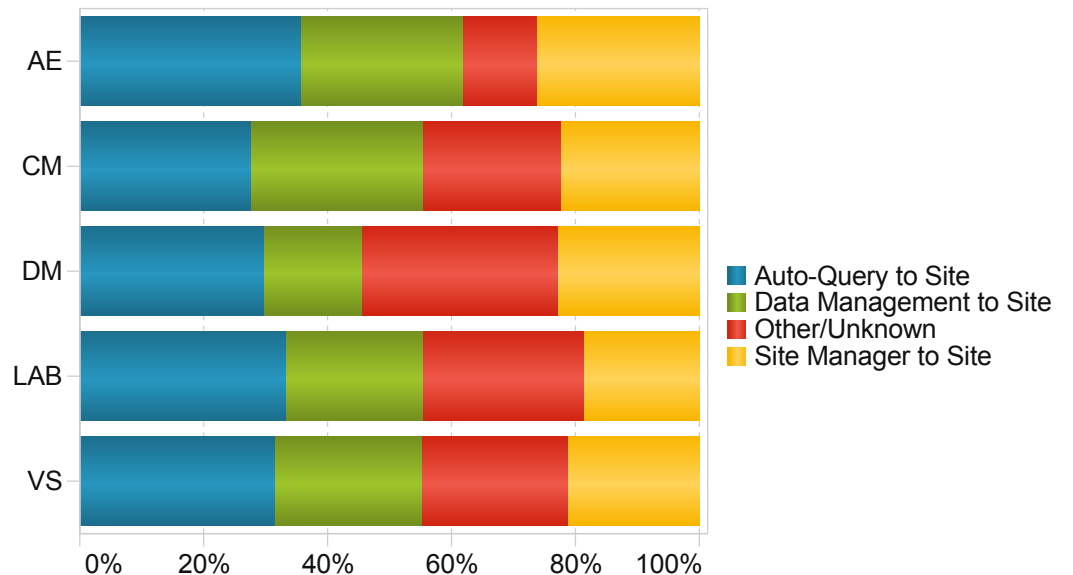
Nr of Days Response Time



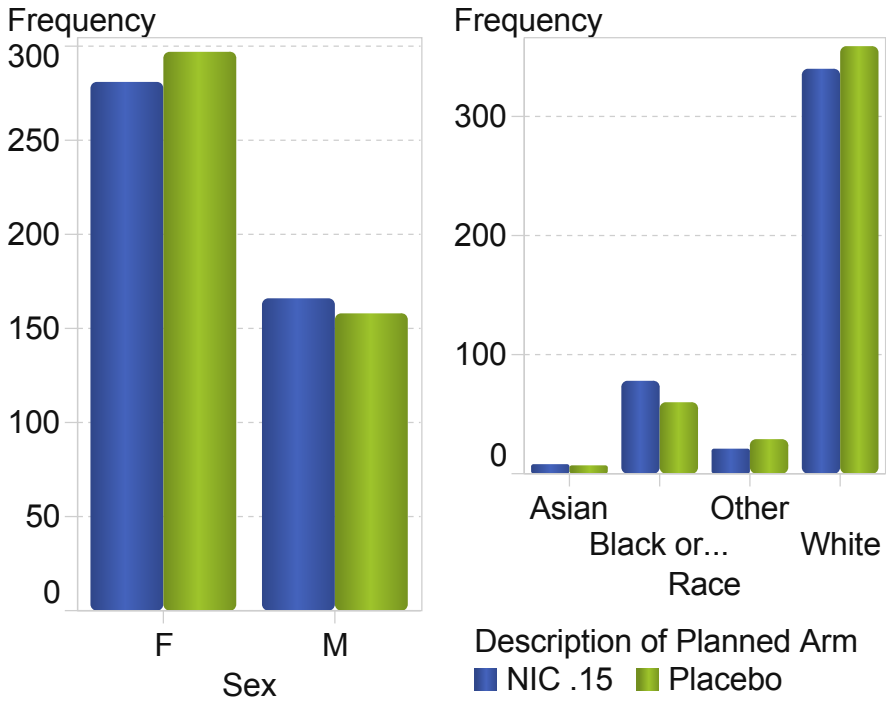
Domain

LAB
VS
AE
DM
CM

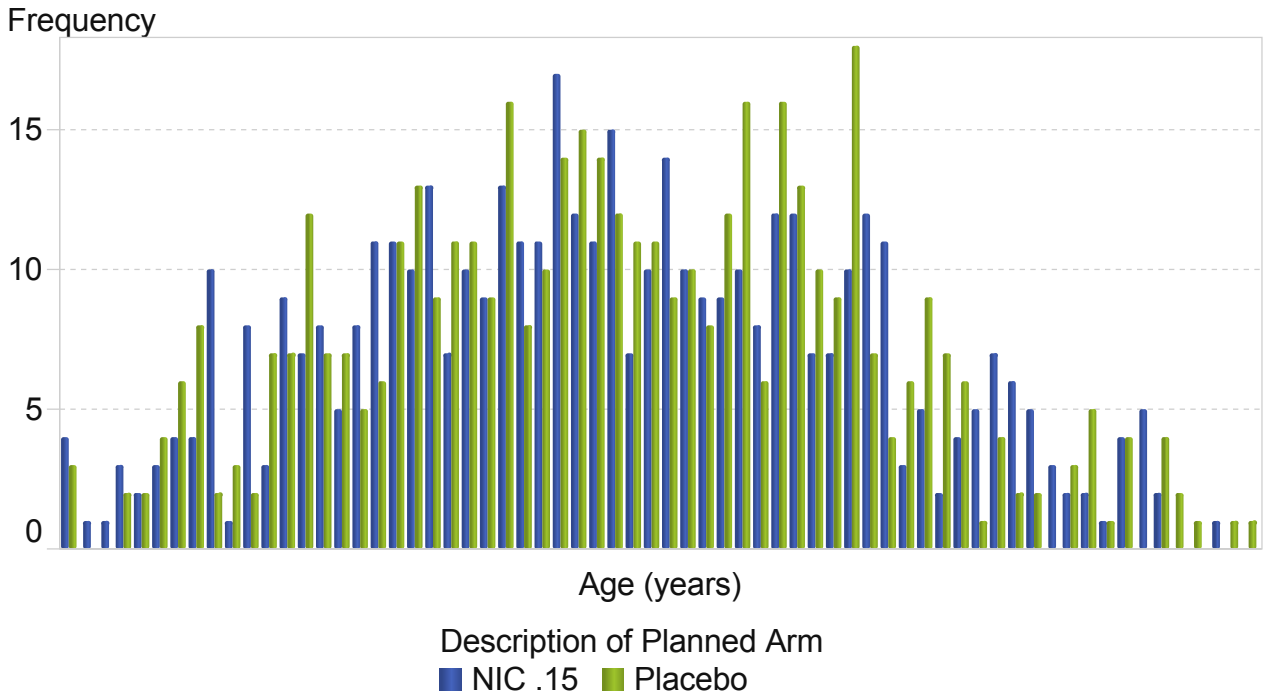
Data Corrections per Domain, Country and Site



Demographics



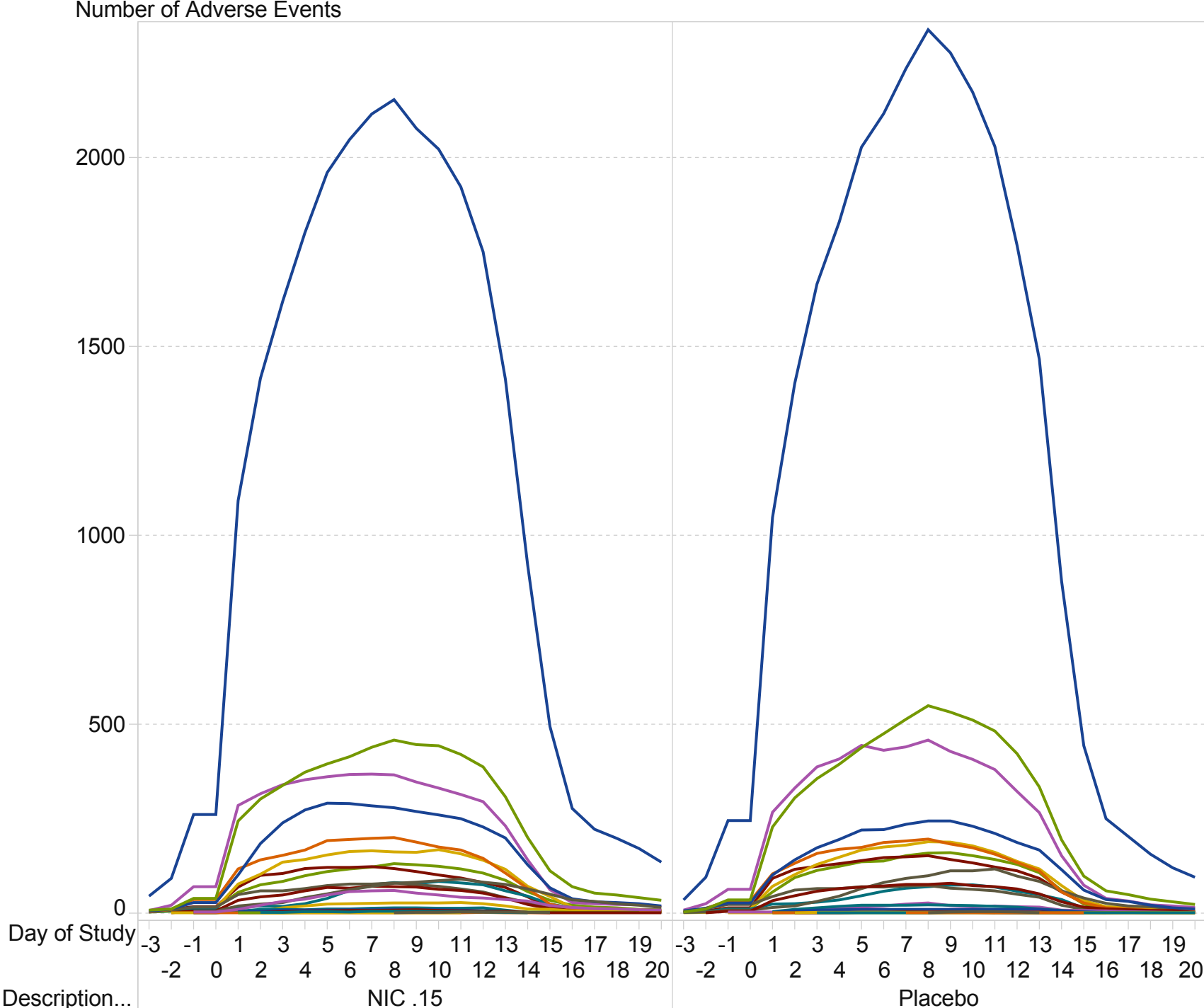
Description of Planned Arm ▲		Total		NIC .15	
Sex ▲	Race ▲	Frequency	Age	Frequency	Age
Total		902	50.0	447	49.7
Subtotal: F		578	51.4	281	50.7
F	Asian	14	51.1	7	47.4
	Black or African American	97	46.2	53	45.5
	Other	32	46.9	14	49.9
	White	435	52.9	207	52.2
Subtotal: M		324	47.4	166	48.0
M	Asian	1	28.0	1	28.0
	Black or African American	41	46.9	25	44.8
	Other	18	43.8	7	47.0
	White	264	47.8	133	48.8



Unique Su... ▲	Description o...	Age
101001	Placebo	63.0
101002	NIC .15	66.0
101003	Placebo	31.0
101004	NIC .15	48.0
101005	Placebo	67.0
101006	Placebo	32.0
101007	NIC .15	63.0
101008	NIC .15	67.0
101009	NIC .15	38.0
101010	Placebo	48.0
101011	NIC .15	33.0
101012	Placebo	49.0
101013	Placebo	32.0
101014	NIC .15	74.0

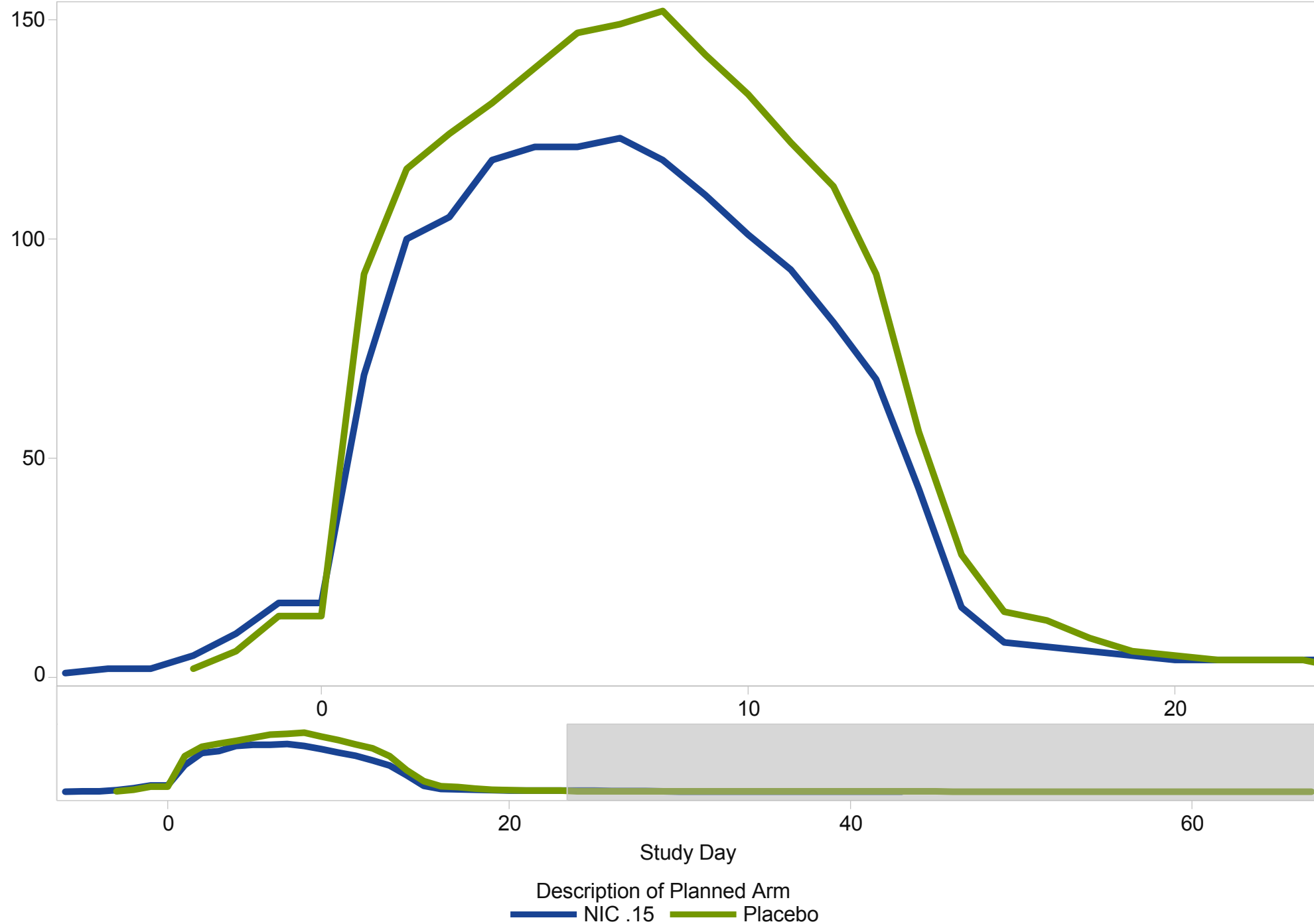
Adverse Events (1)

- ☐ Total
- ☐ Blood An
- ☐ Cardiac I
- ☐ Ear And I
- ☐ Endocrin
- ☐ Eye Diso
- ☐ Gastroint
- ☐ General I
- ☐ Hepatobi
- ☐ Immune S
- ☐ Infections
- ☐ Injury, Po
- ☐ Investiga
- ☐ Metabolic
- ☐ Musculos
- ☐ Neoplasr
- ☐ Nervous
- ☐ Psychiatr
- ☐ Renal An
- ☐ Reproduc
- ☐ Respirato
- ☐ Skin And
- ☐ Vascular



Adverse Events (2)

Number of Adverse Events



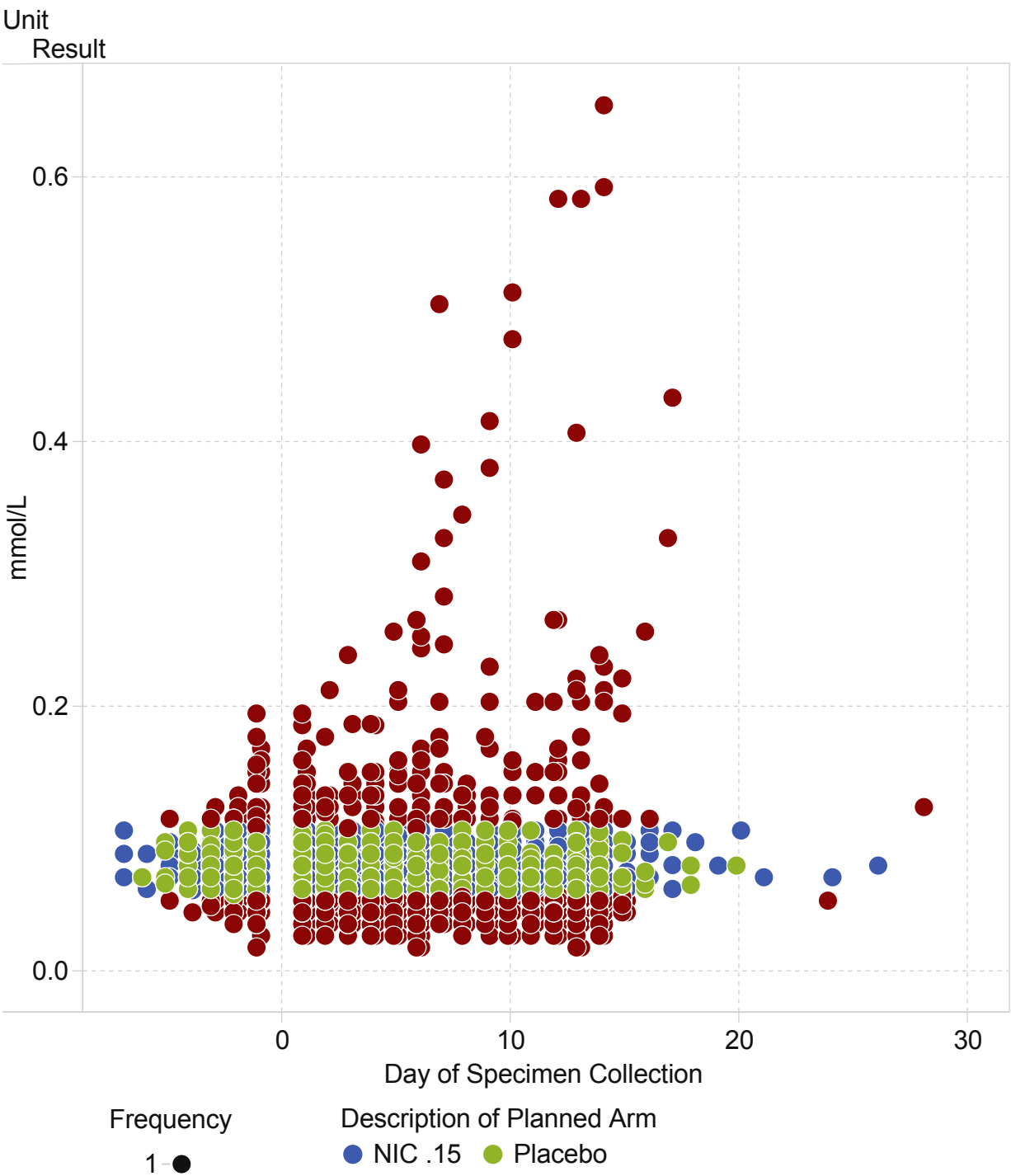
- Activated Partial Thromboplastin Time
- Alanine Aminotransferase
- Alkaline Phosphatase
- Aspartate Aminotransferase
- Bilirubin
- Blood Urea Nitrogen
- Calcium
- Carbon Dioxide
- Chloride
- Creatine Kinase
- Creatinine
- Erythrocytes
- Glucose
- Hematocrit
- Hemoglobin
- Lactate Dehydrogenase
- Leukocytes
- Partial Pressure Carbon Dioxide
- Partial Pressure Oxygen
- ..

Unique Subject Identifier

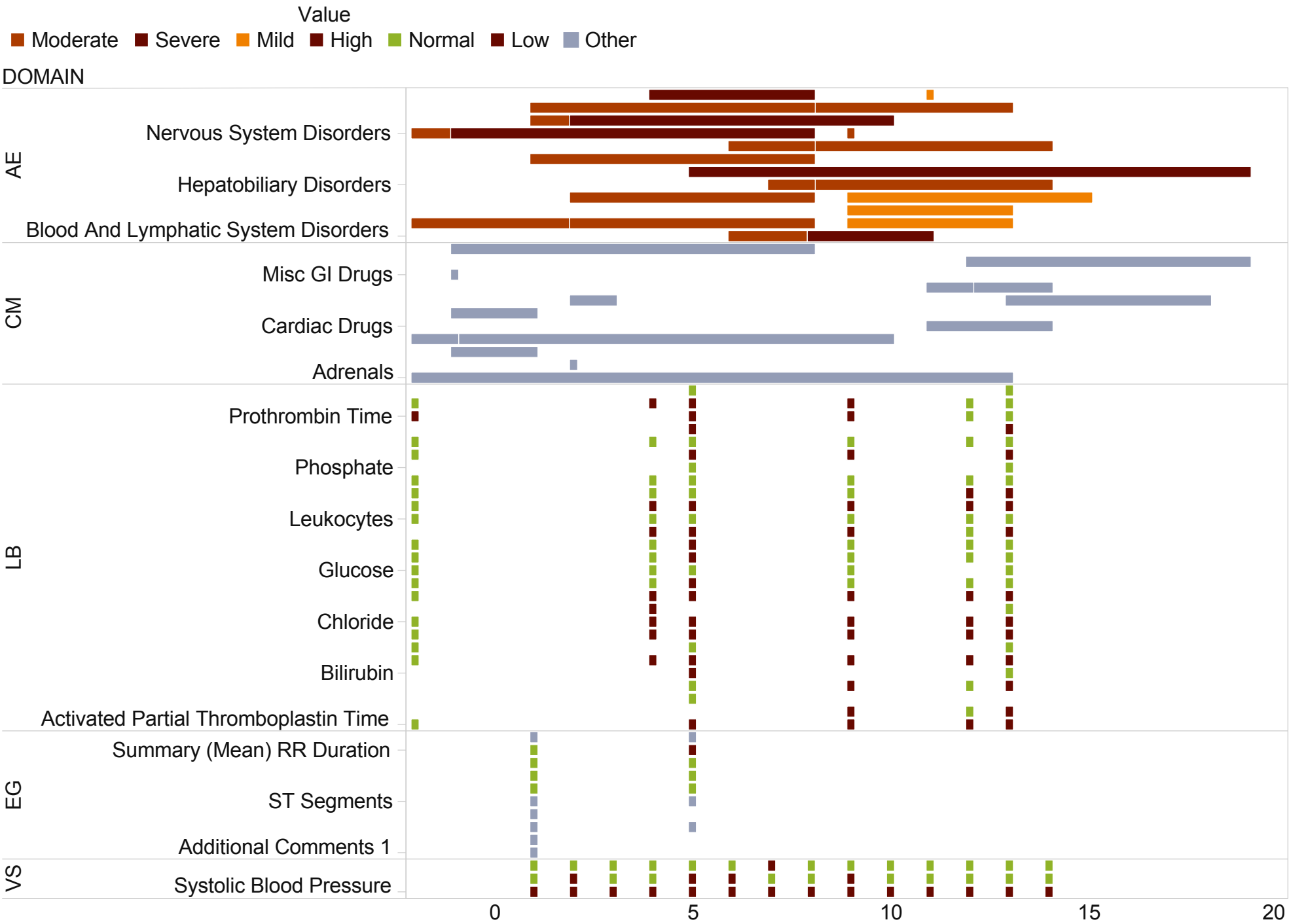
Test Result

Unique... ▲	Specimen Collection Day	Test Re...	
101001	8	0.07	
101001	-1	0.07	
101001	12	0.07	
101002	11	0.08	
101002	-1	0.05	
101002	8	0.09	
101003	5	0.06	
101003	10	0.04	

Laboratory data



Patient Profile



Take Home Messages

- Data visualisation will prove very useful in tracking and monitoring clinical trial progress and performance
- Quite a different skill set and mindset is required if you're a statistical programmer or statistician
- The best way to approach data visualisation is to just get started with it!

Thank you! Questions?



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