

Visualizations to Support DSMB Monitoring



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Current State

- Correspondence via email or document repository
- Relevant study documents posted
 - Protocol
 - DSMB/DMC Charter
 - SAP
- Meetings occur per Charter
 - Quarterly, semiannually, etc.
 - Based on percentage enrolled
- Static table, figures, and listings in PDF or Word (RTF) format
- Communicate recommendations to study team based on findings

Results

- Scope often too limited or too broad
 - Limited review time
 - DSMB/DMC members overwhelmed with material provided
- Reliance on DSMB/DMC statistician to provide high-level summary
 - Biases review
 - Statisticians are not experts in the indication
 - What appears important statistically may not be clinically interesting and/or relevant
- DSMB/DMC member can become disengaged

DSMB/DMC Focus

SUBJECT LEVEL INFO

- Disposition
- Demographics
- Baseline Characteristics
- Indication History and/or Characteristics

ADVERSE EVENTS

- Overall Summary
- Seriousness
- Severity
- Relatedness

LABORATORY RESULTS

- Results over time
- Laboratory Abnormalities
- Grading
- Shifts

VITAL SIGN AND ECG RESULTS

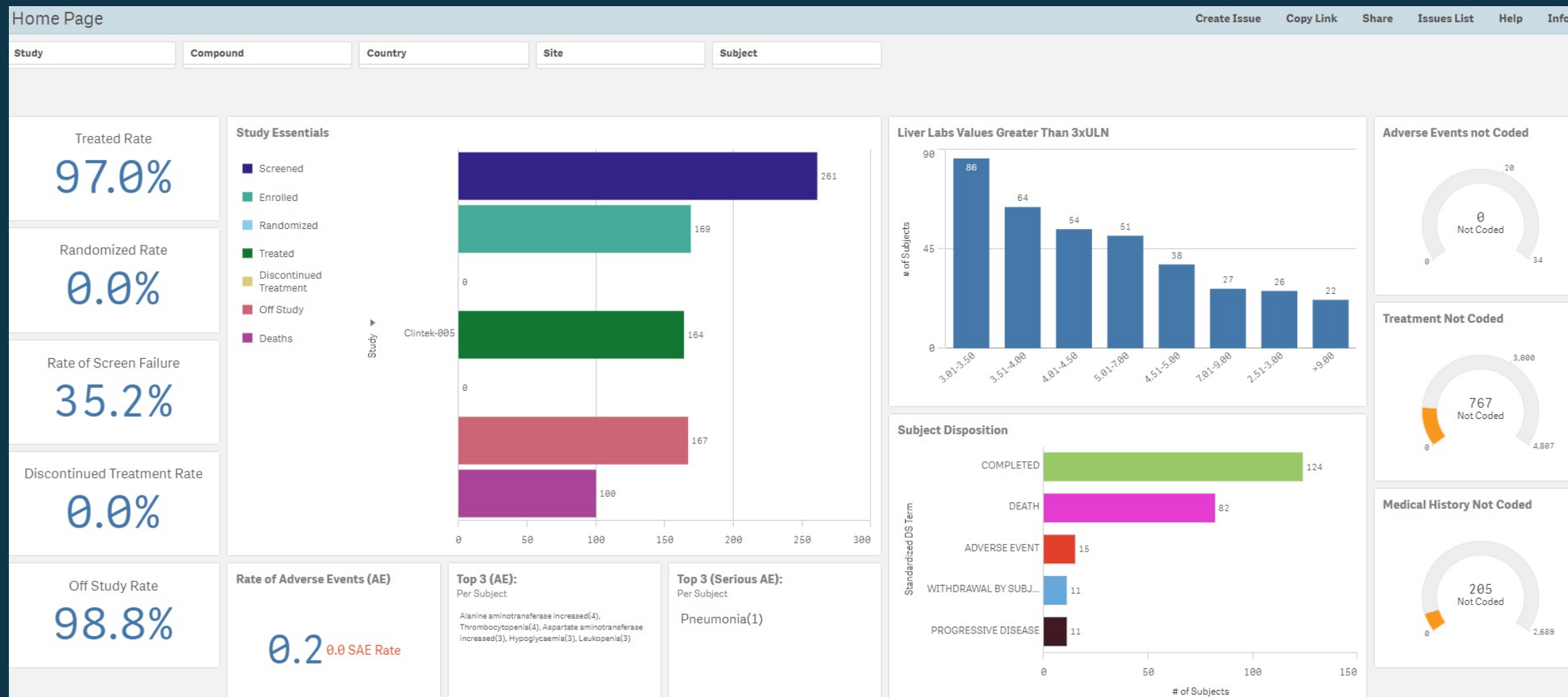
- Results over time
- Marked Abnormalities
- Criteria based on specific values

Process Improvements

- Access to data visualizations
 - Dynamic reports
 - Up-to-date data
- Improve DSMB/DMC engagement
 - DSMB/DMC can explore visualization throughout the course of the study
 - Not reliant upon static reports available only at pre-specified time intervals
- Allow members to focus on their area(s) of expertise/interest
- Tables, figures, and data listings in the same place

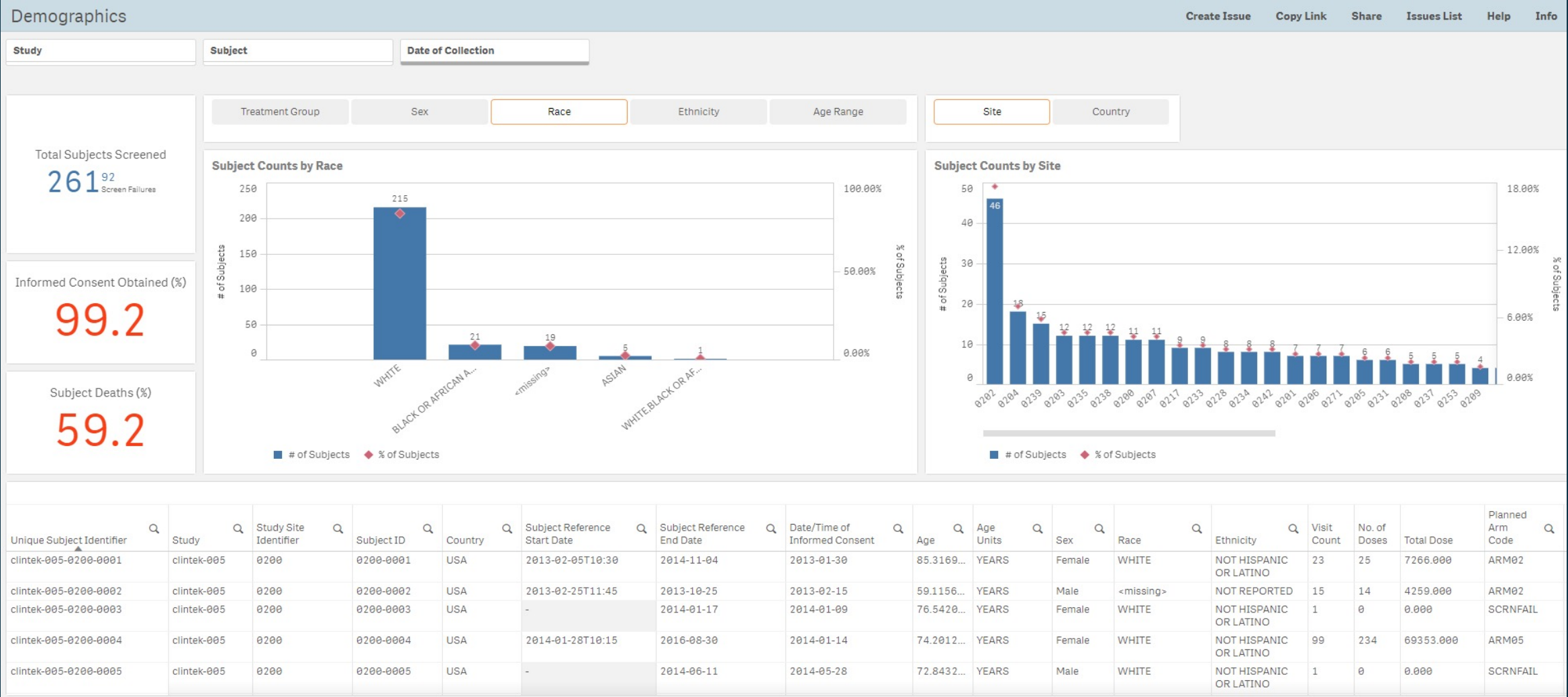
Subject Level Information

High-level information easily accessible



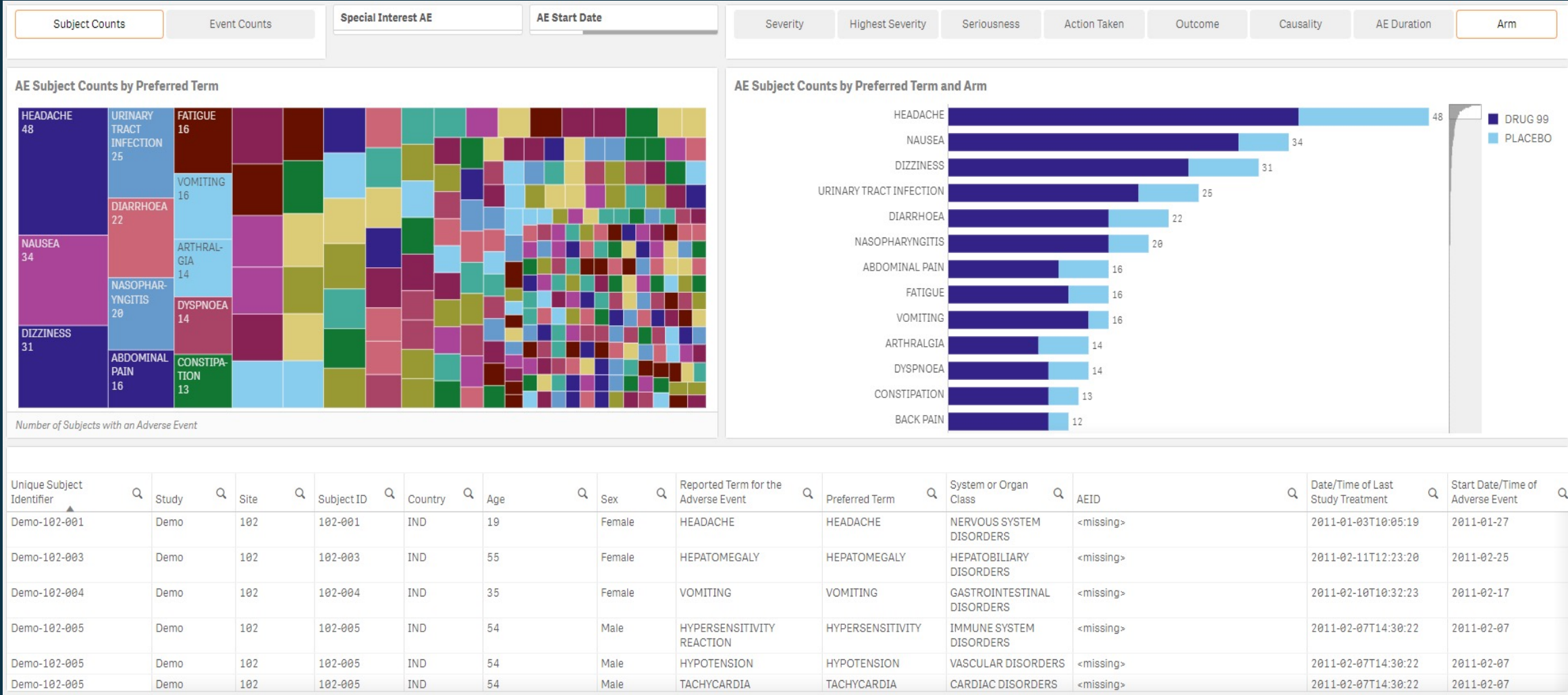
Subject Level Information

Demographics – descriptive statistics, bar charts (n %) and data listing in one place



Adverse Events

Explorable – ability to manipulate reports and focus on specific SOC/PTs and subjects experiencing them



Laboratory Results

Explorable – identify tests and/or subjects of interest

Lab Numerical Results by Visit Name

Test Subject Visit Name

← Low | Normal | High →

≤0.2 0.2-0.4 0.4-0.6 0.6-0.8 0.8-1.0 1 1-3 3-5 5-7 7-9 >9

	SCREENING	DAY 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	UNSCHEDULED
⊕ Absolute Atypical Lymphs (x10 ⁹ /L)	-	-	0.09	-	0.37	-	-
⊕ Alanine Aminotransferase (U/L)	17.60	17.97	23.90	22.45	22.02	21.60	19.18
⊕ Alkaline Phosphatase (U/L)	79.05	79.69	81.95	78.60	76.83	77.94	87.00
⊕ Aspartate Aminotransferase (U/L)	21.09	21.92	23.99	23.41	22.40	22.42	22.88
⊕ Atypical Lymphs (%)	-	-	10.00	-	8.00	-	-
⊕ Bands (x10 ⁹ /L)	0.77	0.13	1.58	1.61	0.05	1.45	-
⊕ Bands/Leukocytes (%)	6.00	8.00	7.00	10.00	1.00	8.25	-
⊕ Basophils (x10 ⁹ /L)	0.04	0.04	0.04	0.04	0.04	0.04	0.04
⊕ Basophils/Leukocytes (%)	0.61	0.65	0.63	0.65	0.67	0.68	0.69
⊕ Bicarbonate (mmol/L)	24.83	24.40	24.83	24.97	25.19	25.28	23.94
⊕ Bilirubin (mg/dL)	0.30	0.30	0.33	0.31	0.31	0.30	0.28
⊕ Blood Urea Nitrogen (mg/dL)	12.96	12.74	12.95	13.00	13.14	13.36	14.18
⊕ Calcium (mg/dL)	9.17	9.10	9.24	9.31	9.30	9.27	9.04
⊕ Chloride (mmol/L)	103.63	103.37	103.58	103.39	103.32	103.36	104.44
⊕ Eosinophils (x10 ⁹ /L)	0.14	0.15	0.15	0.14	0.15	0.16	0.26
⊕ Eosinophils/Leukocytes (%)	2.29	2.38	2.52	2.40	2.52	2.66	3.52
⊕ Ery. Mean Corpuscular Hemoglobin (pg)	21.96	21.70	23.61	24.15	24.54	24.80	22.92
⊕ Ery. Mean Corpuscular HGB Concentration (g/dL)	27.42	27.34	28.12	28.50	28.80	29.07	27.78
⊕ Ery. Mean Corpuscular Volume (fL)	79.78	79.11	83.85	84.60	85.03	85.12	82.23
⊕ Erythrocytes (x10 ¹² /L)	4.12	4.12	4.34	4.40	4.44	4.43	4.22
⊕ Erythrocytes Distribution Width (%)	17.16	17.15	21.12	21.02	20.52	20.23	19.21
⊕ Glucose (mg/dL)	103.68	105.50	109.20	104.42	107.57	105.06	104.06
⊕ Hematocrit (%)	32.57	32.28	36.12	37.04	37.57	37.59	34.60
⊕ Hemoglobin (g/dL)	8.92	8.82	10.14	10.55	10.82	10.94	9.62

Laboratory Results

Explorable – focus on specific test(s) and/or subject(s)

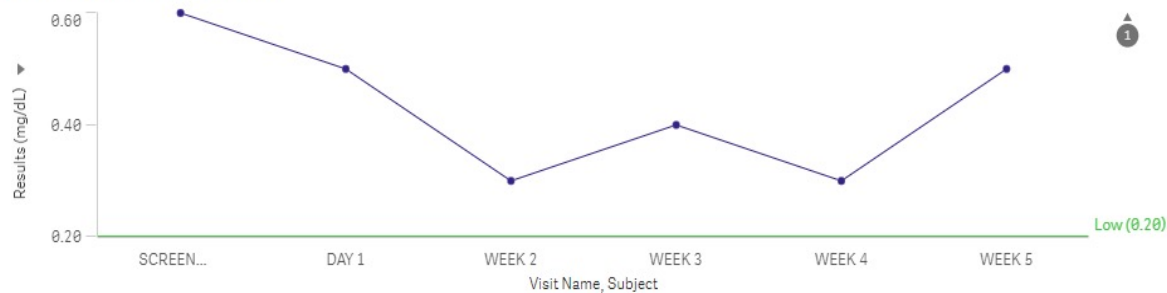
Lab Results Over Time : Alanine Aminotransferase



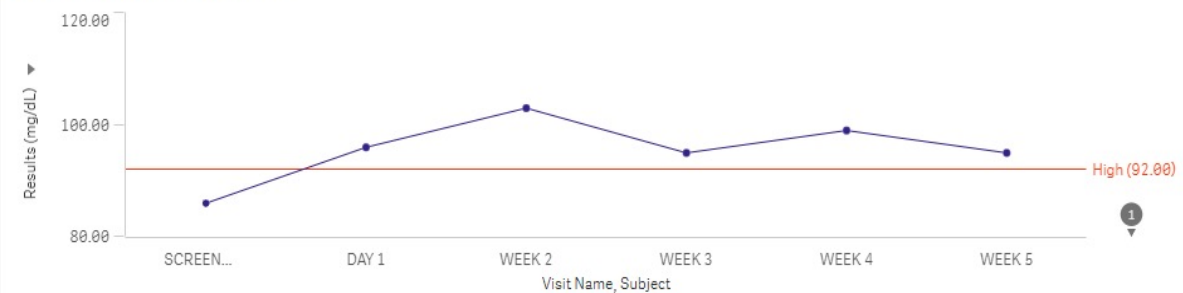
Lab Results Over Time : Aspartate Aminotransferase



Lab Results Over Time : Bilirubin



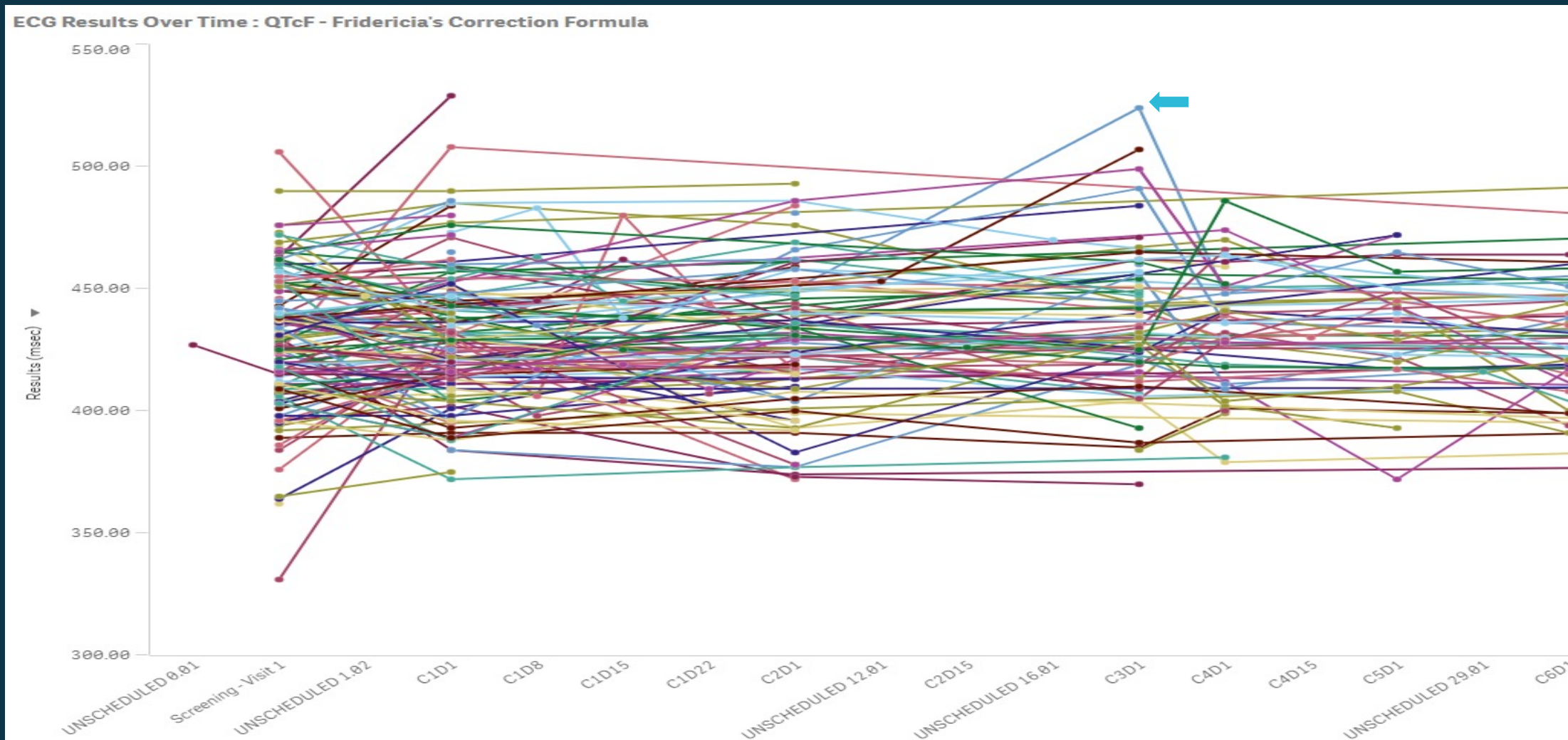
Lab Results Over Time : Glucose



Unique Subject Identifier	Study	Site	Subject ID	Country	Age	Gender	Date/Time of Last Study Treatment	Date/Time of Specimen Collection	Study Day of Specimen Collection	Visit Name	Visit Number	Specimen Type	Category for Lab Test	Lab Test Short Name
Demo-102-001	Demo	102	102-001	IND	19	Female	2011-01-03T10:05:19	2010-12-15T14:00	1	SCREENING	0.0	BLOOD	CHEMISTRY	ALT
Demo-102-001	Demo	102	102-001	IND	19	Female	2011-01-03T10:05:19	2010-12-15T14:00	1	SCREENING	0.0	BLOOD	CHEMISTRY	AST
Demo-102-001	Demo	102	102-001	IND	19	Female	2011-01-03T10:05:19	2010-12-15T14:00	1	SCREENING	0.0	BLOOD	CHEMISTRY	BILI
Demo-102-001	Demo	102	102-001	IND	19	Female	2011-01-03T10:05:19	2010-12-15T14:00	1	SCREENING	0.0	BLOOD	CHEMISTRY	GLUC
Demo-102-001	Demo	102	102-001	IND	19	Female	2011-01-03T10:05:19	2010-12-27T10:10	13	DAY 1	1.0	BLOOD	CHEMISTRY	ALT

Vital Sign and ECG Results

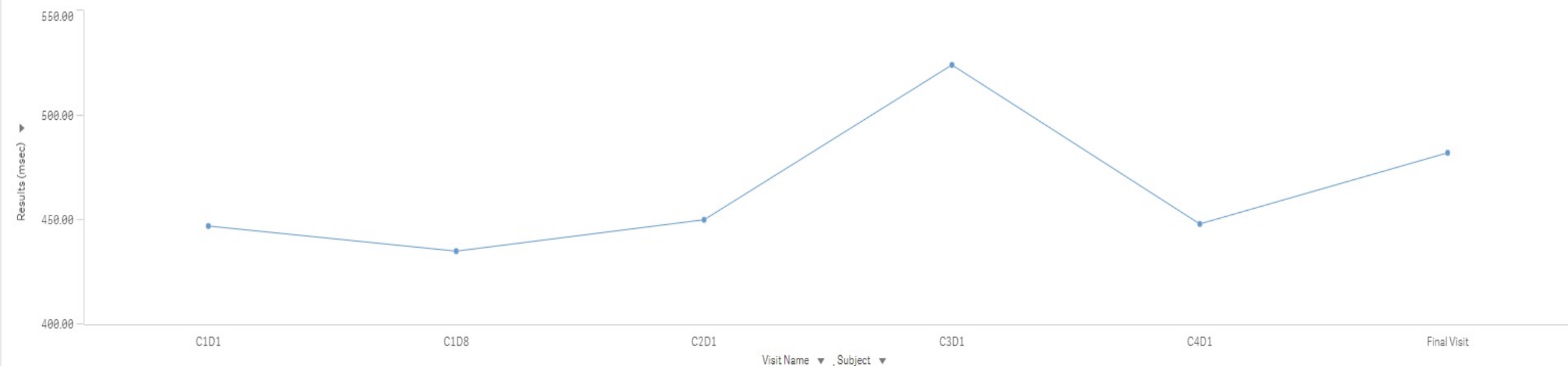
Explorable – identify outliers of potential interest



Vital Sign and ECG Results

Explorable – identify outliers of potential interest

ECG Results Over Time : QTcF - Fridericia's Correction Formula



Unique Subject Identifier	Study	Site	Subject ID	Country	Date/Time of Last Study Treatment	Date/Time of ECG	Study Day of ECG	Visit Name	Visit Number	Interpretation	ECG Test Short Name	ECG Test Name	Result in Standard Units	Standard Units
CLINTEK-006-0001-002	CLINTEK-006	0001	0001-002	USA	2015-01-28	2014-11-05T08:32	1	C1D1	3.0	ABNORMAL	QTcF	QTcF - Fridericia's Correction Formula	447.000	msec
CLINTEK-006-0001-002	CLINTEK-006	0001	0001-002	USA	2015-01-28	2014-11-12T09:37	8	C1D8	6.0	ABNORMAL	QTcF	QTcF - Fridericia's Correction Formula	435.000	msec
CLINTEK-006-0001-002	CLINTEK-006	0001	0001-002	USA	2015-01-28	2014-12-15T12:02	41	C2D1	12.0	ABNORMAL	QTcF	QTcF - Fridericia's Correction Formula	450.000	msec

Results

- More robust data review prior to (and during) meeting
 - Up-to-date data
 - Members are actively engaged identifying potential safety issues
- Members who are more familiar with the data
 - Ask questions
 - Identify items to discuss during the meeting
- More confident in recommendations
 - Members
 - Sponsor



Thank you

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