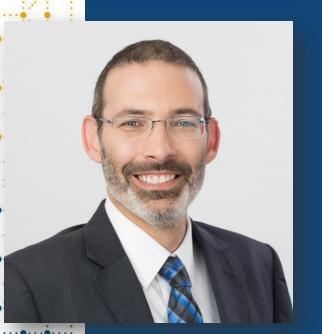


2023
EUROPE
INTERCHANGE
COPENHAGEN | 26-27 APRIL



Leveraging CORE for Real-Time Validation – No More Endless Iterations!

Eyal Wultz, President & Co-founder, Bioforum



Meet the Speaker

Eyal Wultz

Title: President & Co-founder

Organization: Bioforum

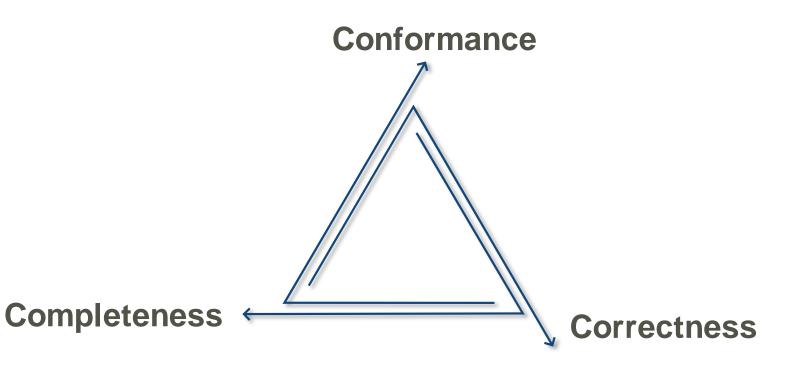
20+ being passionate about clinical data and technology innovation!

Disclaimer and Disclosures

The views and opinions expressed in this presentation are those of the author(s) and do not necessarily reflect the official policy or position of CDISC.



DATA QUALITY







Answer the following two questions...

Get into the raffle!







QUESTION 1

How can I know for sure that all my clinical data end up in SDTM?





Double Programming?

- Double programming is not the answer...

- Changing data (re-runs)...
 - If changes in data values, variables, etc. are not updated in both programs – results will be the same, leaving out the data changes
- Same specs same errors
- Two programmers working in the same organization are never really independent
 - Same SOPs
 - Same programing practices
 - Same macros/snippets



QUESTION 2

How can you show an audit trail of your SDTM data transformations?

Code of Federal Regulations (CFR) Title 21
Part 11 - ELECTRONIC RECORDS; ELECTRONIC SIGNATURES

(e) Use of secure, computer-generated, time-stamped audit trails to independently record the date and time of operator entries and actions that create, modify, or delete electronic records. Record changes shall not obscure previously recorded information. Such audit trail documentation shall be retained for a period at least as long as that required for the subject electronic records and shall be available for agency review and copying.







CDISC CORE and real-time validation



B JetConvert.

SDTM SUBMISSION READY PACKAGE

in 3 weeks with superior quality and at least 25% less cost compared to the industry average





No SAS & no programming



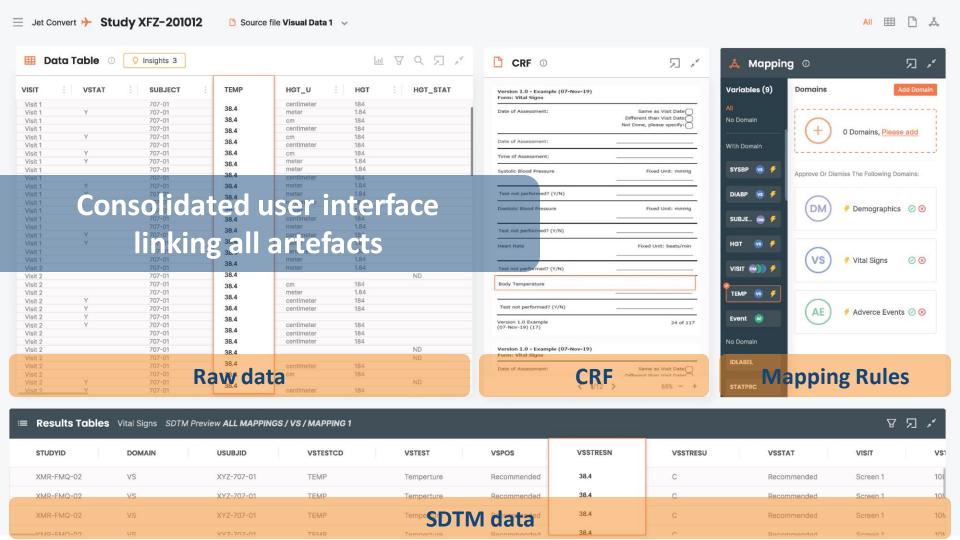
ML-guided mapping recommendations

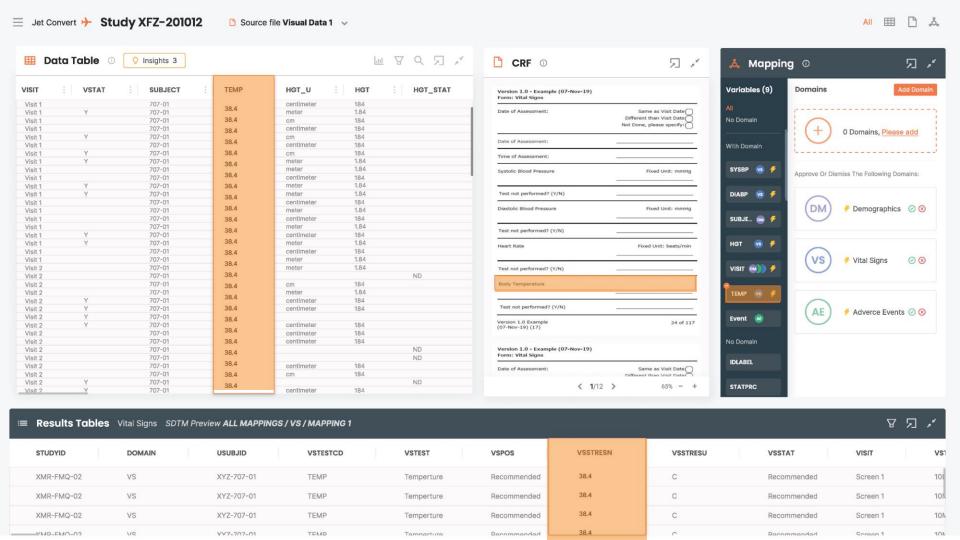


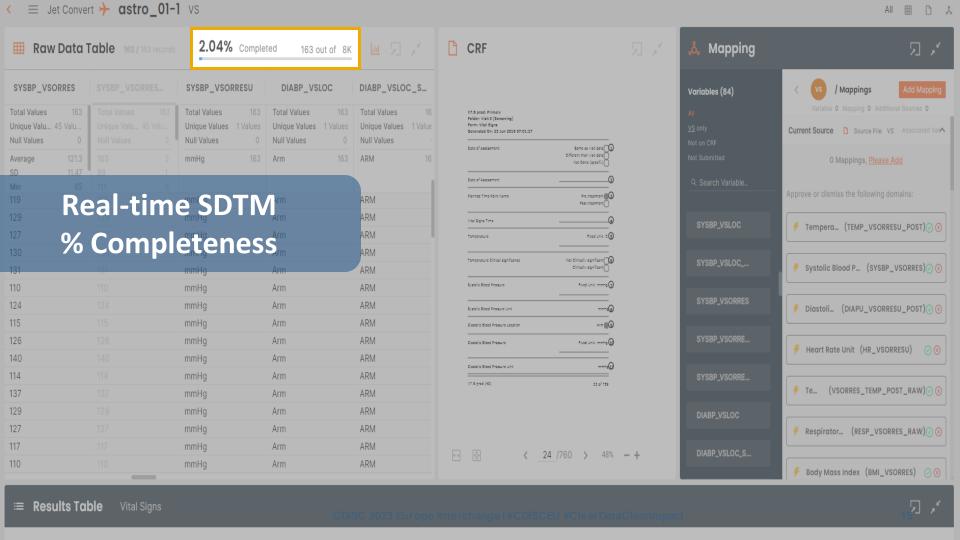
Real-time validation

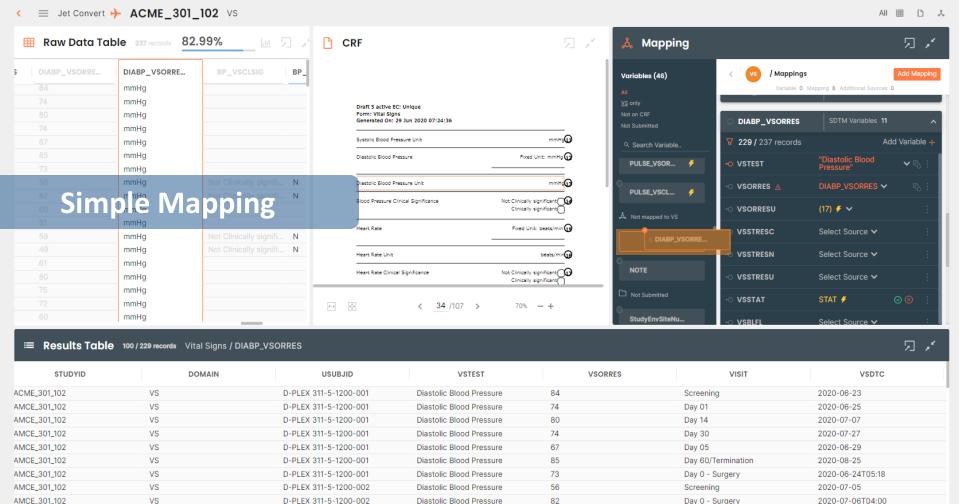


Automatic aCRF & Define.xml generation









Diastolic Blood Pressure

Diastolic Blood Pressure

60

51

Screening

Day 01

2020-07-15

2020-07-23

AMCE 301 102

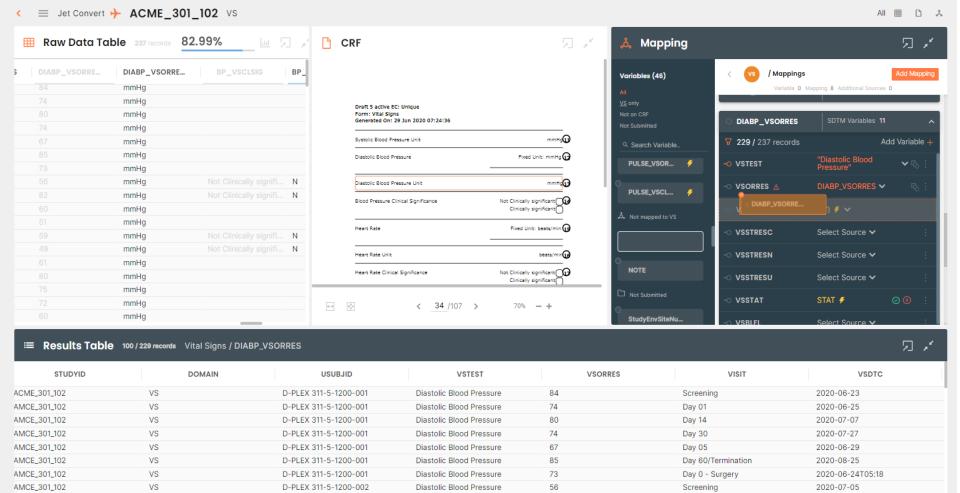
AMCE_301_102

VS

VS

D-PLEX 311-5-1200-003

D-PLEX 311-5-1200-003



Diastolic Blood Pressure

Diastolic Blood Pressure

Diastolic Blood Pressure

82

60

51

Day 0 - Surgery

Screening

Day 01

2020-07-06T04:00

2020-07-15

2020-07-23

AMCE_301_102

AMCE 301 102

AMCE_301_102

VS

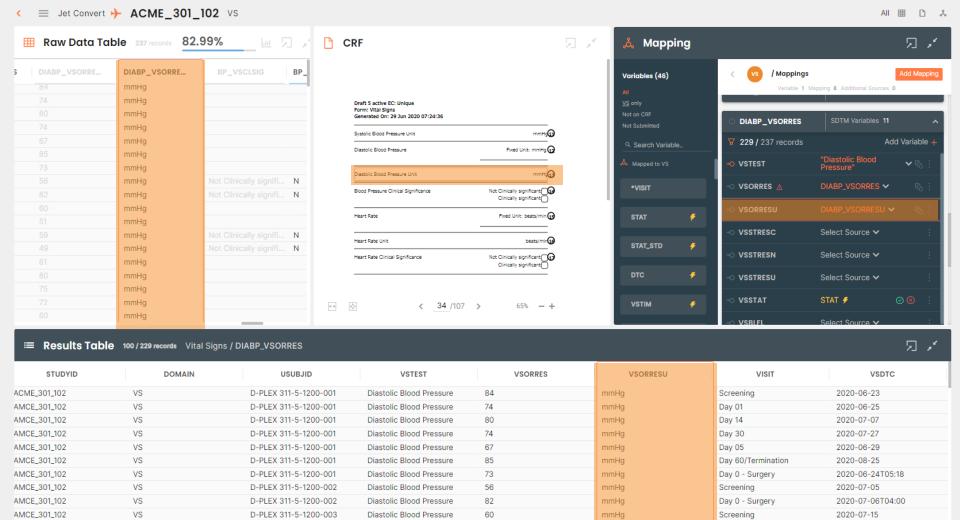
VS

VS

D-PLEX 311-5-1200-002

D-PLEX 311-5-1200-003

D-PLEX 311-5-1200-003



51

Day 01

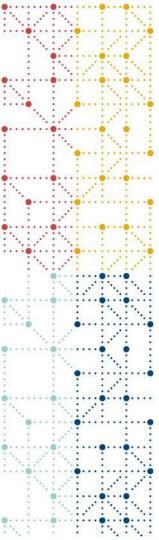
2020-07-23

AMCE 301 102

VS

D-PLEX 311-5-1200-003

Diastolic Blood Pressure



Real-time validation in JetConvert



Study Package (Data, CRFs...)



FDA-converted SDTM CORE Rules

(510)



User-defined CORE rules



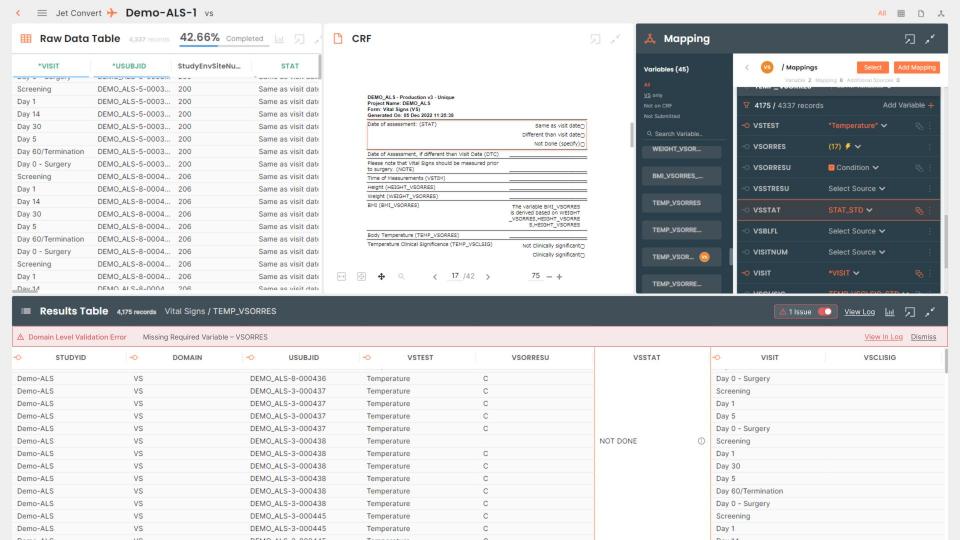


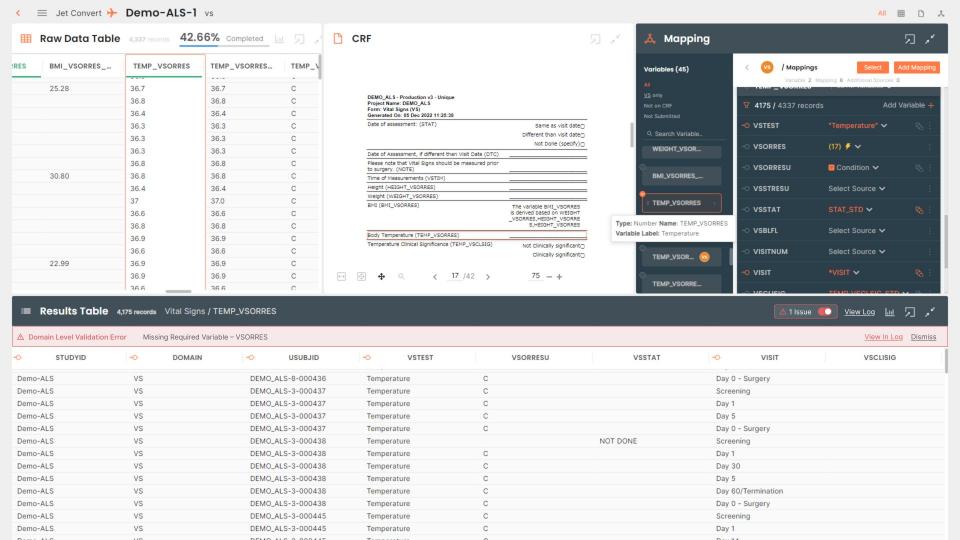


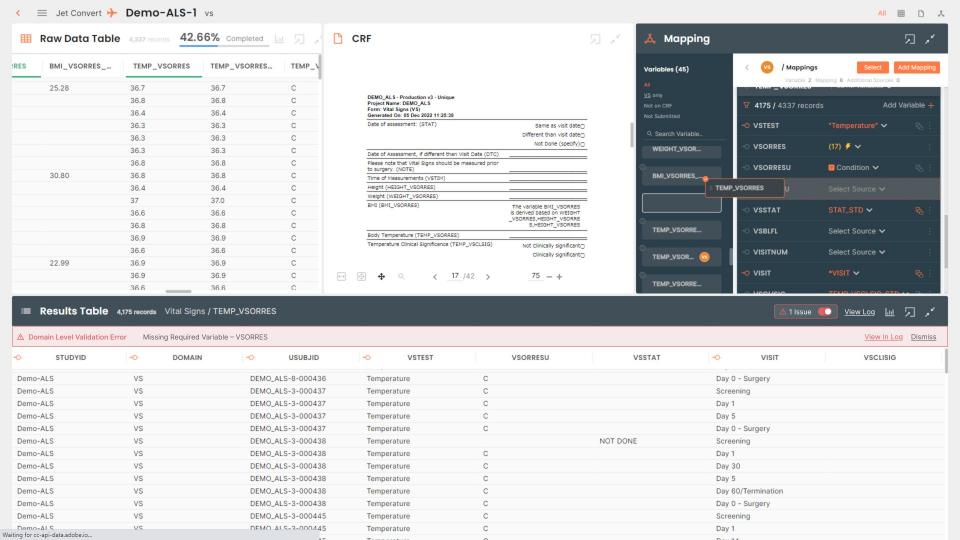
Submission Package (SDTM, aCRF, Define.xml, SDRG)

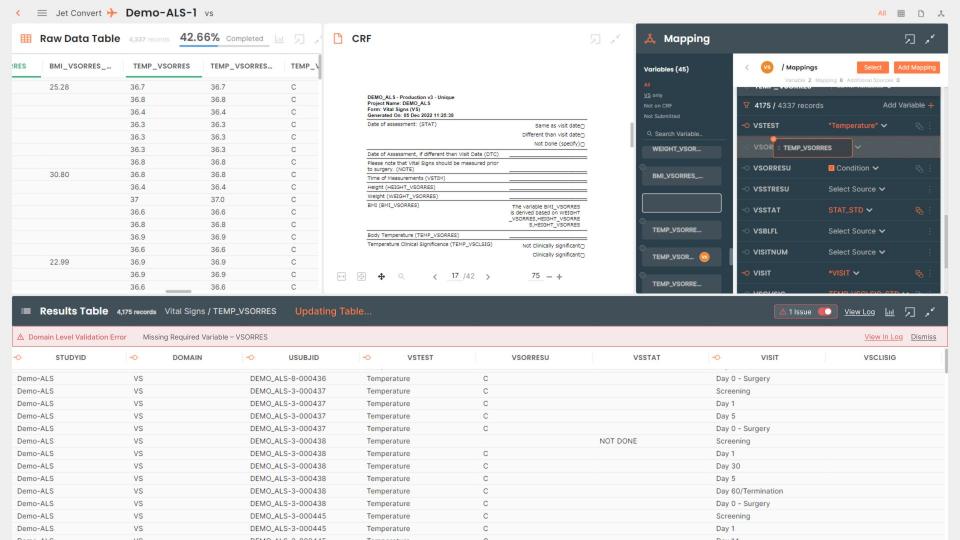


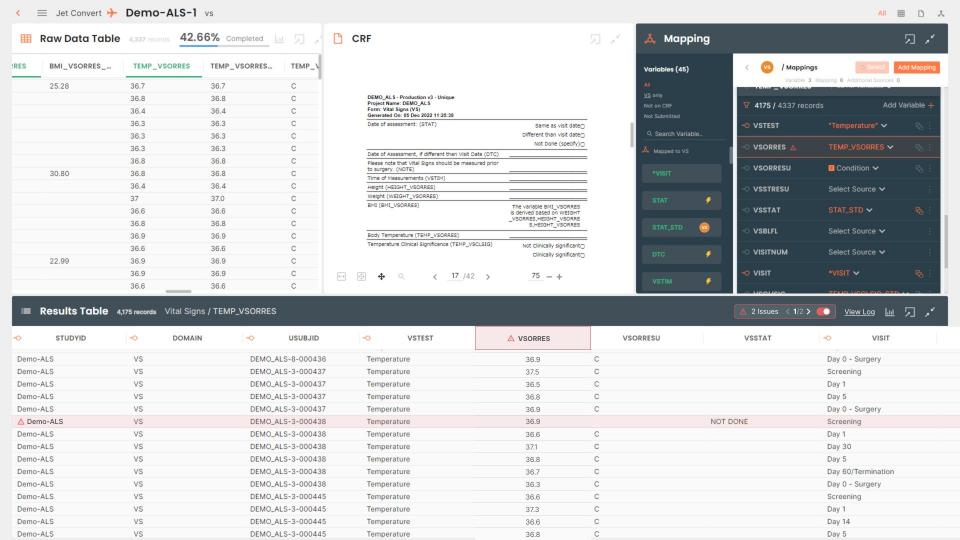


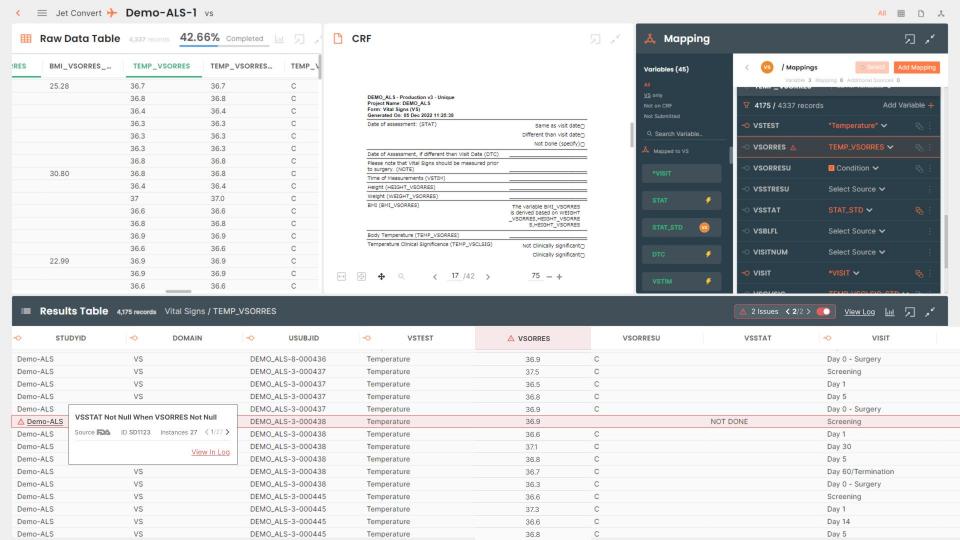


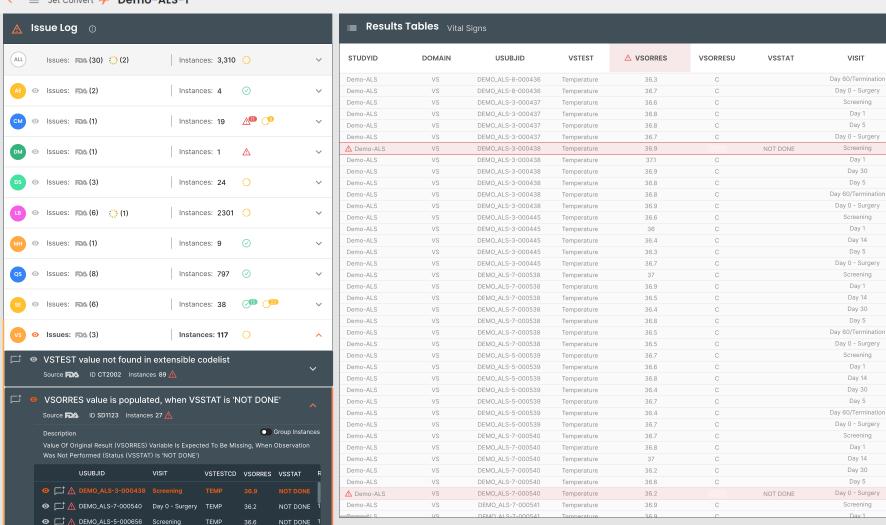












刀 💉

VS

VISIT

Day 0 - Surgery

Screening

Day 1

Day 5

Day 0 - Surgery

Day 1

Day 30

Screening

Day 1

Day 14

Day 5

Day 0 - Surgery

Day 1

Day 14

Day 30

Day 5

Day 0 - Surgery

Screening

Day 1

Day 14

Day 5

Day 0 - Surgery

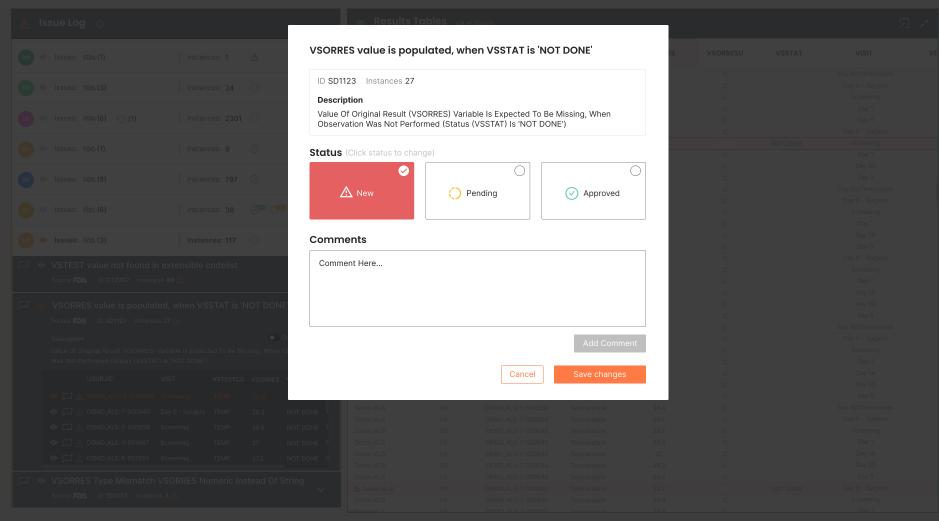
Day 1

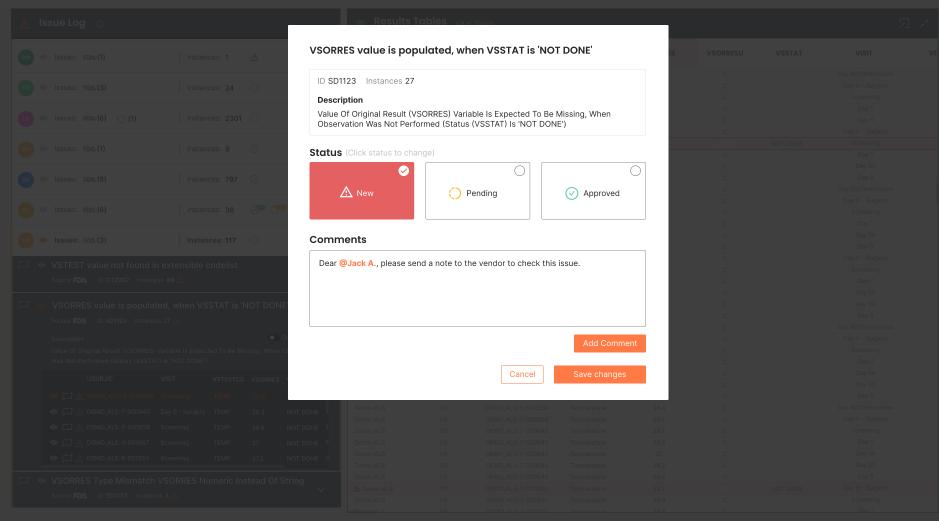
Day 14

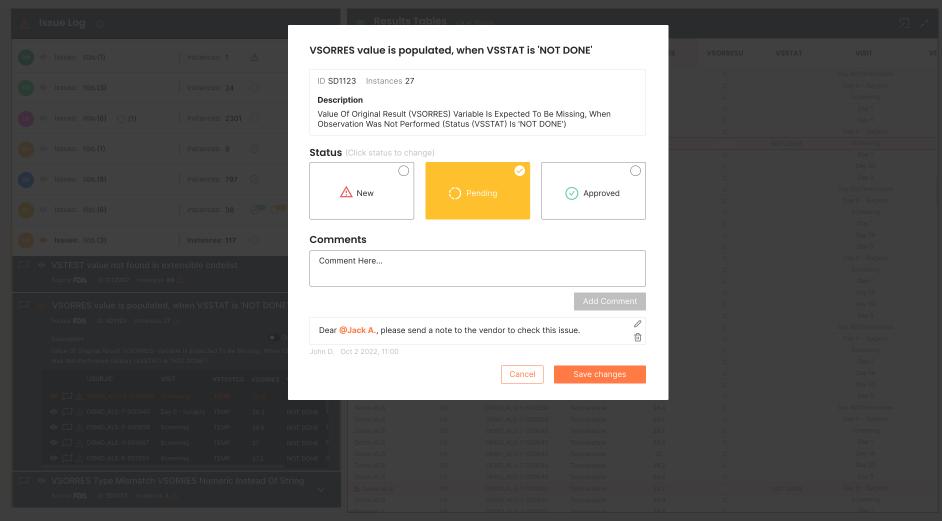
Day 30

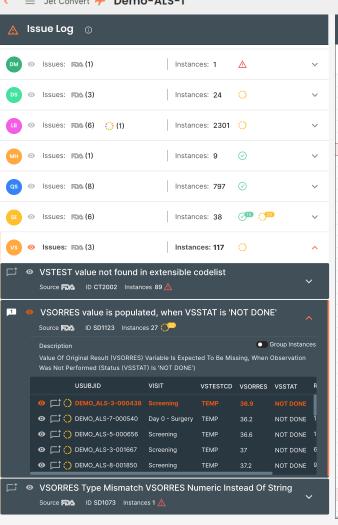
Day 5

Day 1



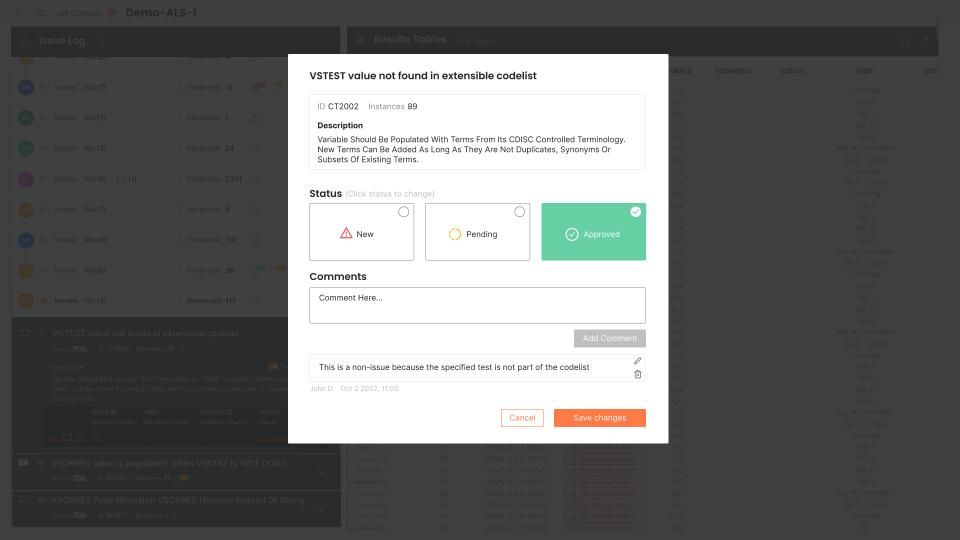


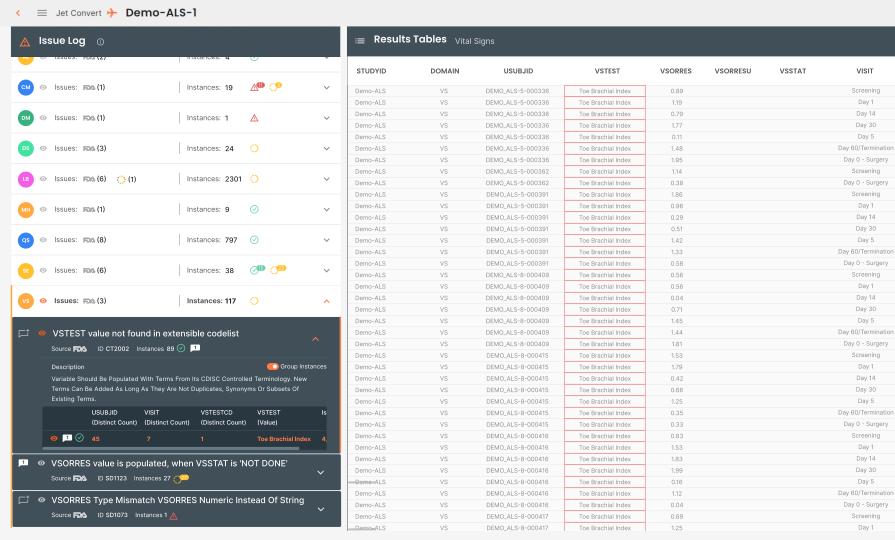




Populto Table

Results Tables Vital Signs							7 /	
STUDYID	DOMAIN	USUBJID	VSTEST	△ VSORRES	VSORRESU	VSSTAT	VISIT	VS
Demo-ALS	VS	DEMO_ALS-8-000436	Temperature	36.3	С		Day 60/Termination	
Demo-ALS	VS	DEMO_ALS-8-000436	Temperature	36.7	С		Day 0 - Surgery	
Demo-ALS	VS	DEMO_ALS-3-000437	Temperature	36.6	С		Screening	
Demo-ALS	VS	DEMO_ALS-3-000437	Temperature	36.8	С		Day 1	
Demo-ALS	VS	DEMO_ALS-3-000437	Temperature	36.8	С		Day 5	
Demo-ALS	VS	DEMO_ALS-3-000437	Temperature	36.7	С		Day 0 - Surgery	
⚠ Demo-ALS	VS	DEMO_ALS-3-000438	Temperature	36.9		NOT DONE	Screening	
Demo-ALS	VS	DEMO_ALS-3-000438	Temperature	37.1	С		Day 1	
Demo-ALS	VS	DEMO_ALS-3-000438	Temperature	36.9	С		Day 30	
Demo-ALS	VS	DEMO_ALS-3-000438	Temperature	36.8	С		Day 5	
Demo-ALS	VS	DEMO_ALS-3-000438	Temperature	36.8	С		Day 60/Termination	
Demo-ALS	VS	DEMO_ALS-3-000438	Temperature	36.9	С		Day 0 - Surgery	
Demo-ALS	VS	DEMO_ALS-3-000445	Temperature	36.6	С		Screening	
Demo-ALS	VS	DEMO_ALS-3-000445	Temperature	36	С		Day 1	
Demo-ALS	VS	DEMO_ALS-3-000445	Temperature	36.4	С		Day 14	
Demo-ALS	VS	DEMO_ALS-3-000445	Temperature	36.3	С		Day 5	
Demo-ALS	VS	DEMO_ALS-3-000445	Temperature	36.7	С		Day 0 - Surgery	
Demo-ALS	VS	DEMO_ALS-7-000538	Temperature	37	С		Screening	
Demo-ALS	VS	DEMO_ALS-7-000538	Temperature	36.9	С		Day 1	
Demo-ALS	VS	DEMO_ALS-7-000538	Temperature	36.5	С		Day 14	
Demo-ALS	VS	DEMO_ALS-7-000538	Temperature	36.4	С		Day 30	
Demo-ALS	VS	DEMO_ALS-7-000538	Temperature	36.8	С		Day 5	
Demo-ALS	VS	DEMO_ALS-7-000538	Temperature	36.5	С		Day 60/Termination	
Demo-ALS	VS	DEMO_ALS-7-000538	Temperature	36.5	С		Day 0 - Surgery	
Demo-ALS	VS	DEMO_ALS-5-000539	Temperature	36.7	С		Screening	
Demo-ALS	VS	DEMO_ALS-5-000539	Temperature	36.6	С		Day 1	
Demo-ALS	VS	DEMO_ALS-5-000539	Temperature	36.8	С		Day 14	
Demo-ALS	VS	DEMO_ALS-5-000539	Temperature	36.4	С		Day 30	
Demo-ALS	VS	DEMO_ALS-5-000539	Temperature	36.7	С		Day 5	
Demo-ALS	VS	DEMO_ALS-5-000539	Temperature	36.4	С		Day 60/Termination	
Demo-ALS	VS	DEMO_ALS-5-000539	Temperature	36.7	С		Day 0 - Surgery	
Demo-ALS	VS	DEMO_ALS-7-000540	Temperature	36.7	С		Screening	
Demo-ALS	VS	DEMO_ALS-7-000540	Temperature	36.8	С		Day 1	
Demo-ALS	VS	DEMO_ALS-7-000540	Temperature	37	C		Day 14	
Demo-ALS	VS	DEMO_ALS-7-000540	Temperature	36.2	C		Day 30	
Demo-ALS	VS	DEMO_ALS-7-000540	Temperature	36.6	C		Day 5	
⚠ Demo-ALS	VS	DEMO_ALS-7-000540	Temperature	36.2		NOT DONE	Day 0 - Surgery	
Demo-ALS	VS	DEMO_ALS-7-000541	Temperature	36.9	С		Screening	
- Domo ALS	VS	DEMO_ALS-7-000541	Temperature	36.9	0		Day 1	





VSC



Taking the next natural step...





FDA/PMDA/ NMPA converted CORE Rules (7K+)



User-defined rules





Downloadable Desktop Application







Define.xml



Bioforum Validator



Login

Don't have an account yet? Register

Email	
Password	
	Login >



Login

Don't have an account yet? Register

Email

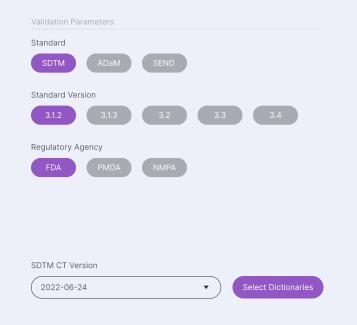
Johndoe@Caompany.Com

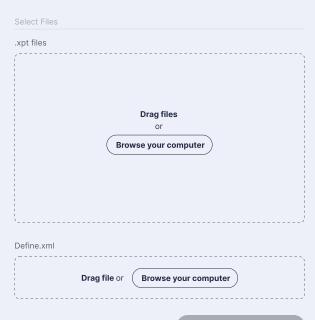
Password



Forgot Password



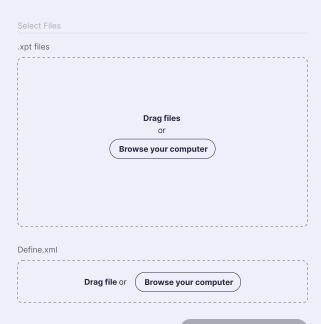








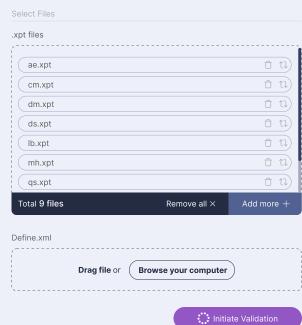














♦ DataGuard









File

Settings

About

Validation is in progress

Standard Type

SDTM

Standard Version

3.3

Regulatory Agency
FDA

SDTM CT Version **2022-06-24**

Files Uploaded

Validation is in progress

Standard Type

SDTM

Standard Version

3.3

Regulatory Agency **FDA**

SDTM CT Version **2022-06-24**

Files Uploaded

Standard Type Standard Version **SDTM** 3.3

Regulatory Agency FDA

Files Uploaded 9

File

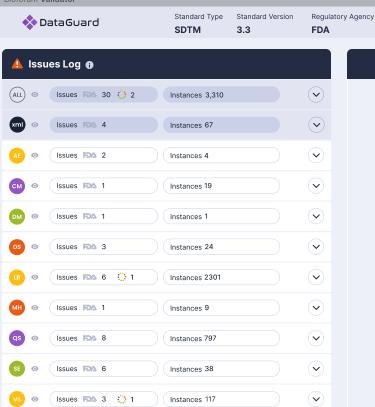
Settings

About

Edit Validation

Validation Successful





For more details click on \odot in the error log

File

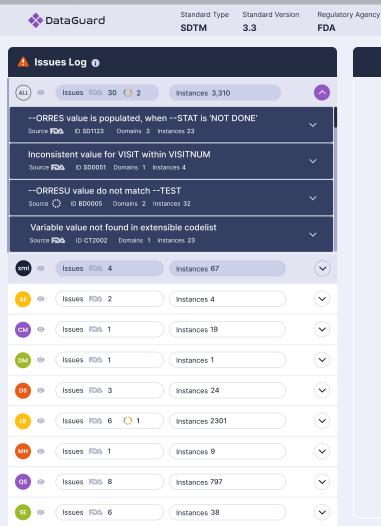
Settings

About

Edit Validation

Files Uploaded





For more details click on $\, \odot \,$ in the error log

File

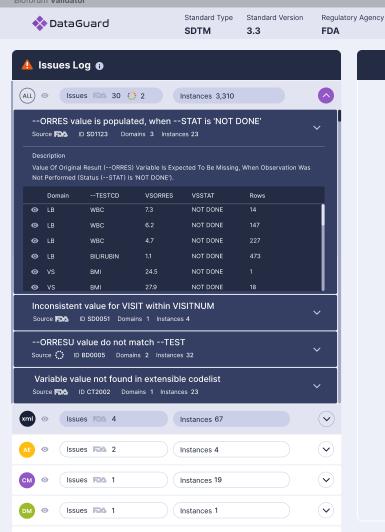
Settings

About

Edit Validation

Files Uploaded





For more details click on \odot in the error log

File

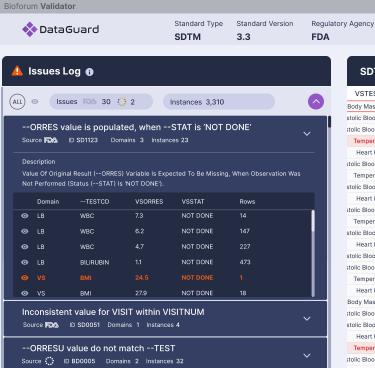
Settings

About

Edit Validation

Files Uploaded





Variable value not found in extensible codelist Source Domains 1 Instances 23

xml	Issues	. FD/A 4		Instances 67	(v)
AE	Issues	PA 2	! (Instances 4	V
СМ	Issues	FDA 1		Instances 19	V

Instances 1

~

Issues PA 1

Files Uploaded

9

File

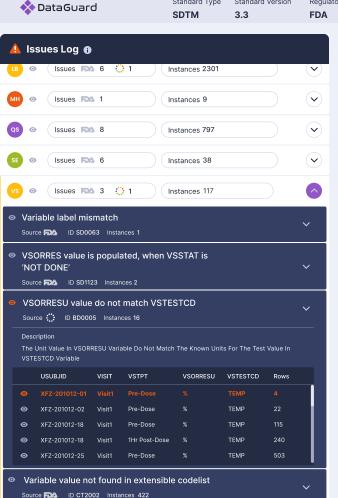
Settings

About

Edit Validation

SDTM Data	Vital Signs (ORRES value is populated, whenSTAT is 'NOT DONE')	

VSTEST	VSPOS	VSORRES	VSORRESU	VSSTRESC	VSSTRESN	VSSTRESU	VSSTAT
Body Mass Index		24.5	Kg/M2	24.5	24.5	Kg/M2	NOT DONE
stolic Blood Pressure	SUPINE	75	Mmhg	75	75	Mmhg	
stolic Blood Pressure	SUPINE	109	Mmhg	109	109	Mmhg	
Temperature	SUPINE	35.9	%	35.9	35.9	%	
Heart Rate	SUPINE	67	Beats/Min	67	67	Beats/Min	
stolic Blood Pressure	SUPINE	116	Mmhg	116	116	Mmhg	
Temperature	SUPINE	36.5	С	36.5	36.5	С	
stolic Blood Pressure	SUPINE	75	Mmhg	75	75	Mmhg	
Heart Rate	SUPINE	65	Beats/Min	65	65	Beats/Min	
stolic Blood Pressure	SUPINE	115	Mmhg	115	115	Mmhg	
Temperature	SUPINE	36.5	С	36.5	36.5	С	
stolic Blood Pressure	SUPINE	76	Mmhg	76	76	Mmhg	
Heart Rate	SUPINE	56	Beats/Min	56	56	Beats/Min	
stolic Blood Pressure	SUPINE	76	Mmhg	76	76	Mmhg	
stolic Blood Pressure	SUPINE	120	Mmhg	120	120	Mmhg	
Temperature	SUPINE	36.3	С	36.3	36.3	С	
Heart Rate	SUPINE	64	Beats/Min	64	64	Beats/Min	
Body Mass Index		27.9	Kg/M2	27.9	27.9	Kg/M2	NOT DONE
stolic Blood Pressure	SUPINE	125	Mmhg	125	125	Mmhg	
stolic Blood Pressure	SUPINE	77	Mmhg	77	77	Mmhg	
Heart Rate	SUPINE	55	Beats/Min	55	55	Beats/Min	
Temperature	SUPINE	36	%	36	36	%	
stolic Blood Pressure	SUPINE	126	Mmhg	126	126	Mmhg	
stolic Blood Pressure	SUPINE	75	Mmhg	75	75	Mmhg	
Heart Rate	SUPINE	61	Beats/Min	61	61	Beats/Min	
Temperature	SUPINE	36.8	С	36.8	36.8	С	
stolic Blood Pressure	SUPINE	122	Mmhg	122	122	Mmhg	
stolic Blood Pressure	SUPINE	70	Mmhg	70	70	Mmhg	
Heart Rate	SUPINE	57	Beats/Min	57	57	Beats/Min	
Temperature	SUPINE	36.7	С	36.7	36.7	С	
Heart Rate	SUPINE	56	Beats/Min	56	56	Beats/Min	
Temperature	SUPINE	36.4	С	36.4	36.4	С	
stolic Blood Pressure	SUPINE	119	Mmhg	119	119	Mmhg	
Body Mass Index		26.6	Kg/M2	26.6	26.6	Kg/M2	
Heart Rate	SUPINE	58	Beats/Min	58	58	Beats/Min	
stolic Blood Pressure	SUPINE	61	Mmhg	61	61	Mmhg	
Temperature	SUPINE	36.4	С	36.4	36.4	C	



Standard Type

Standard Version

9

Regulatory Agency

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-02

01012-03

01012-03

01012-03

01012-03

5

6

8

9

10

11

12

13

14

15

16

2

3

4

HR

TEMP

SISBP

DIABP

HR

TEMP

SISBP

DIABP

HR

TEMP

HR

TEMP

SISBP

BMI

HR

DIABP

TEMP

Heart Rate

Temperature

Systolic Blood Pressure

Diastolic Blood Pressure

Heart Rate

Temperature

Systolic Blood Pressure

Diastolic Blood Pressure

Heart Rate

Temperature

Heart Rate

Temperature

Systolic Blood Pressure

Body Mass Index

Heart Rate

Diastolic Blood Pressure

Temperature

Files Uploaded

File

55

36

126

75

61

36.8

122

70

57

36.7

56

36.4

119

26.6

58

61

36.4

Beats/Min

%

Mmhg

Mmhg

Beats/Min

С

Mmha

Mmhg

Beats/Min

С

Beats/Min

С

Mmhg

Kg/M2

Beats/Min

Mmhg

С

Settings

About

Edit Validation

55

36

126

75

61

36.8

122

70

57

36.7

56

36.4

119

26.6

58

61

36.4

VS:

BJID	VSSEQ	VSTESTCD	VSTEST	VSPOS	VSORRES	VSORRESU	VSSTRESC	
01012-01	1	BMI	Body Mass Index		24.5	Kg/M2	24.5	
01012-01	2	DIABP	Diastolic Blood Pressure	SUPINE	75	Mmhg	75	
01012-01	3	SISBP	Systolic Blood Pressure	SUPINE	109	Mmhg	109	
01012-01	4	TEMP	Temperature	SUPINE	35.9	%	35.9	
01012-01	5	HR	Heart Rate	SUPINE	67	Beats/Min	67	
01012-01	6	SISBP	Systolic Blood Pressure	SUPINE	116	Mmhg	116	
01012-01	7	TEMP	Temperature	SUPINE	36.5	C	36.5	
01012-01	8	DIABP	Diastolic Blood Pressure	SUPINE	75	Mmhg	75	
01012-01	9	HR	Heart Rate	SUPINE	65	Beats/Min	65	
01012-01	10	SISBP	Systolic Blood Pressure	SUPINE	115	Mmhg	115	
01012-01	11	TEMP	Temperature	SUPINE	36.5	C	36.5	
01012-01	12	DIABP	Diastolic Blood Pressure	SUPINE	76	Mmhg	76	
01012-01	13	HR	Heart Rate	SUPINE	56	Beats/Min	56	
01012-01	14	DIABP	Diastolic Blood Pressure	SUPINE	76	Mmhg	76	
01012-01	15	SISBP	Systolic Blood Pressure	SUPINE	120	Mmhg	120	
01012-01	16	TEMP	Temperature	SUPINE	36.3	C	36.3	
01012-01	17	HR	Heart Rate	SUPINE	64	Beats/Min	64	
01012-02	1	BMI	Body Mass Index		27.9	Kg/M2	27.9	
01012-02	2	SISBP	Systolic Blood Pressure	SUPINE	125	Mmhg	125	
01012-02	3	DIABP	Diastolic Blood Pressure	SUPINE	77	Mmhg	77	

SUPINE



When?

Q1 2024

Pending FDA-CDISC agreement on a 'Single Source of Truth'

Thank You!

