CDISC GUF Webinar

26 Novembre 2020

Merci pour votre participation virtuelle mais active !

Conditions de ce Webinar

Votre son sera **éteint** tout au long du webinar

Ce webinar est enregistré

Questions?
Ecrivez les dans la section Q&A. Après chaque présentation, il y a aura un temps pour y répondre

Problèmes de sons? Quittez et redémarrez l'application Zoom

Les slides de la presentation et l'enregistrement de ce webinar seront disponibles dans quelques jours

Ce webinar n'est pas une formation homologuée par le CDISC et n'a pas été developpée sous les CDISC Operating Procedures.

GUF CDISC

Groupe des Utilisateurs Francophones du CDISC

- Groupe LinkedIn
  https://www.linkedin.com/groups/2160071/

- Lien sur le site wiki du CDISC
  https://wiki.cdisc.org/display/FRUN

- Une section dans chaque CDISC Newsletter trimestrielle
  Exemple pour Q1 et Q2 2020
  https://www.cdisc.org/newsletter/issue/first-quarter-2020/french-user-group-welcomes-new-members
  https://www.cdisc.org/newsletter/issue/second-quarter-2020/french-user-network-gathers-virtual-meeting

GUF CDISC

Catherine	BOULARD	Ipsen	
Nicolas	de SAINT-JORRE	Quanticsoft	
Nicolas	DUFOUR	Bioprojet Pharma	
Karen	FANOUILLERE	SANOFI	Présidente
Umit	GULER	Théa Pharma	
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Julie	Le BOULICAUT	eXYSTAT	
Simon	LEBEAU	Danone Research	Vice-président
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Yoani	MATSAKIS	Telemedicine Technologies S.A.S.	
Fabien	MAUGARD	AP-HP	
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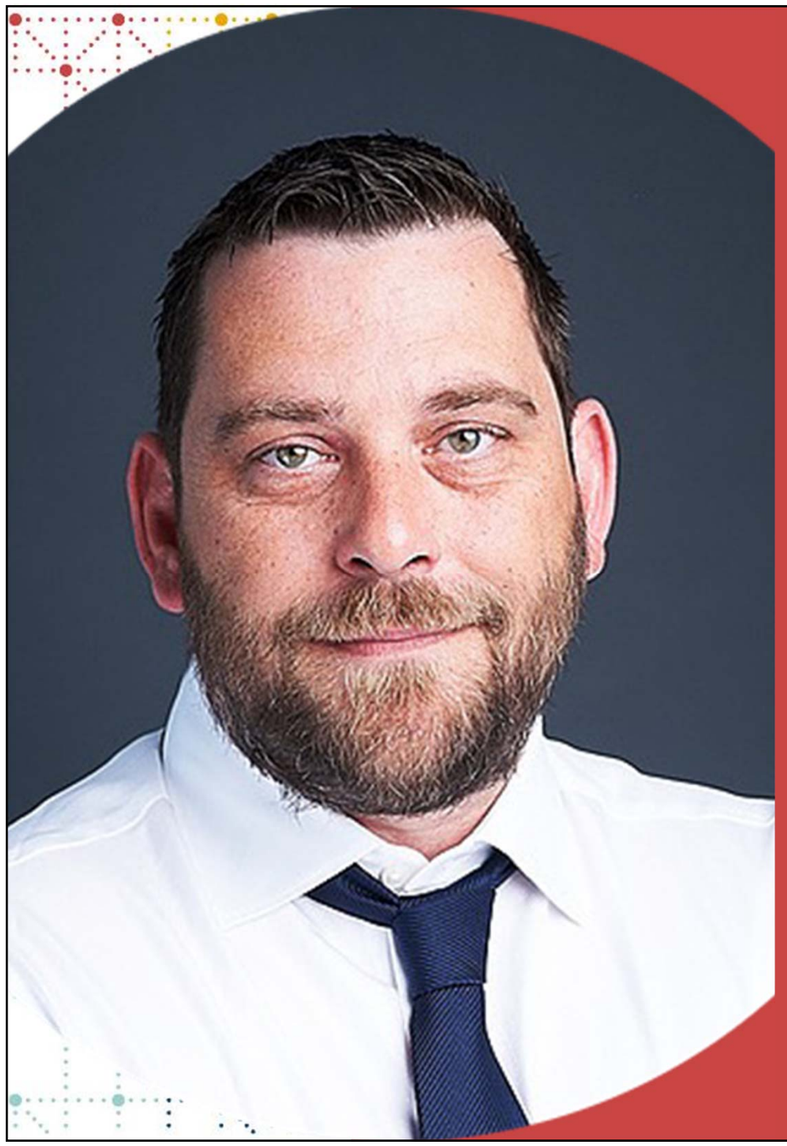
Marc-Antoine	PRODHOMME	Janssen Pharmaceutical	
Jonathan	RICHES	SAS	
Nathalie	SABIN	OXMO CDM	
Michelle	VANDENBERGH	SGS - Life Sciences	Secrétaire

CDISC GUF Webinar

26 mai 2020

• CDISC Overview	Peter Van Reusel - CDISC
• A quoi sert la Terminologie contrôlée?	Thierry Lambert - ADCLIN
• To Biomedical Concepts or not to Biomedical Concepts	Dave Iberson-Hurst and Kirsten Langendorf - SCUBED
• Gestion des screening/Randomisations multiples dans SDTM	Wafaa Jabert – ICHNOS SCIENCES



Peter Van Reusel, CDISC Chief Standards Officer

Peter Van Reusel provides executive leadership to the development and implementation of clinical standards in line with CDISC's strategy and operational plans, working closely with the President and CEO, as well as CDISC staff and stakeholders.

He has over 20 years' experience in senior roles in pharma and at CROs, providing standards expertise and carrying out other standards work in various organizational settings. A long-time, CDISC-authorized instructor, Peter has helped significantly in developing CDISC training courses.

He previously served as CDISC's European Liaison, shepherding relationships with key European regulatory, academic, and biopharma stakeholders. Peter is also an active PhUSE working group leader.

CDISC Standards Update

Presented by Peter Van Reusel
Chief Standards Officer, CDISC

26 November 2020

CDISC Standards Updates

1. What has happened in 2020?
2. Foundational Standards plans for 2021
3. New and Ongoing Projects/Initiatives

What has happened in 2020?

What have we done this year?

31 Global Governance Group Meetings so far

- Consultations - 14
- Internal Reviews - 23
- Public Reviews - 17
- Publications - 7

3 Global Governance Group Meetings remaining

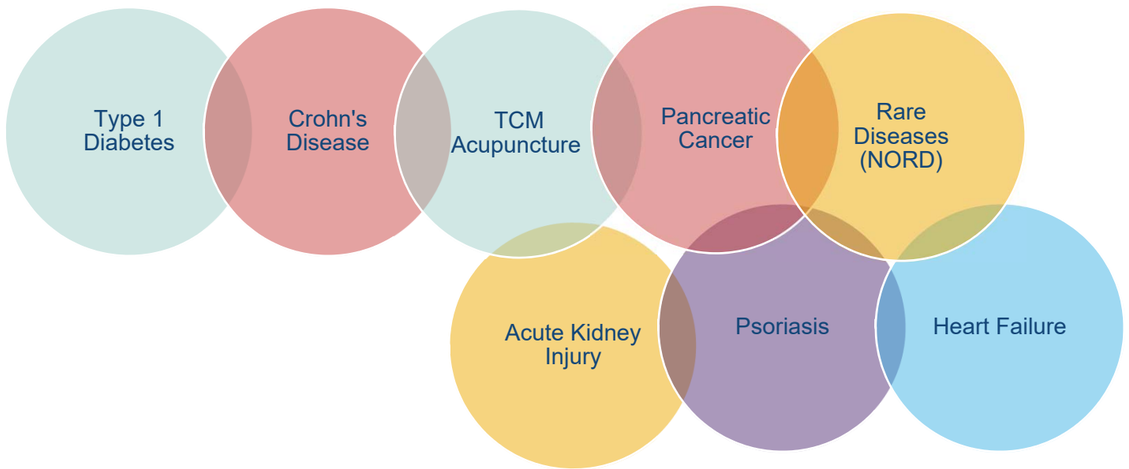
- Consultations - 0
- Internal Reviews - 2
- Public Reviews - 6
- Publications - 3

CDISC COVID-19 Project Overview

- CDISC convened a Task Force in Late March 2020
  - *Industry stakeholders*
  - *Regulatory*
  - *Academia*
  - *Key CDISC data standards staff*
- Development did not follow formal Standards Development Process (CDISC COP-001)
- Three sets of documents published on CDISC Website on 21 April 2020
  - *CDISC Interim User Guide for COVID-19*
  - *Guidance for Ongoing Studies Disrupted by the COVID-19 Pandemic*
  - *Resources for Public Health Researchers*
- COVID-19 Controlled Terminology posted 08 May 2020 – an additional publication from NCI-EVS
  - https://www.cdisc.org/standards/therapeutic-areas/covid-19

NOW AVAILABLE: Interim User Guide for COVID-19

Therapeutic Area User Guides Currently In Development



Recently Published

https://www.cdisc.org/standards/in-development

Conformance Rules

CDISC Foundational Standards Teams are actively developing conformance rules for their respective standards

- ADaM/ADaMIG Conformance Rules
- SENDIG Conformance Rules
- SDTM/SDTMIG Conformance Rules
- Define XML Conformance Rules v1.0 – Preparing for Public Review
- SDTMIG-Medical Devices Rules v1.0 – Preparing for Internal Review

Foundational Standards in Development

Conformance Rules	SDTM v2.0	SDTMIG v3.4	SENDIG v3.1.1	SDTM Variable Definitions
Multiple QRS and ADQRS Supplements	CDASH-SAE Supplement	CDASH Model v1.2	CDASHIG v2.2	ADaMIG v1.3
ADaMIG OCCDS	ADNCA	ADaMIG-Medical Devices	ODM v2.0	

https://www.cdisc.org/standards/in-development

Foundational Standards plans for 2021

SEND

- Planned for March 2021 Release
  - SENDIG v3.1.1
  - Conformance Rules v2.0

- Planned for 2021
  - Fit For Use pilot of SENDIG-DART v1.1 (published but not required by FDA yet)
    - FDA / Industry pilot of usability which will define improvements for the next release of SENDIG -DART

- Proposals for November 2023 Release
  - SENDIG v3.2 (or v4.0!, looking to be a major release)
  - SENDIG – Safety Pharm v1.0
  - SENDIG – Genotoxicity v1.0
  - SENDIG – Dermal Ocular v1.0

CDASH

- Planned for November 2021 Release
  - CDASH v1.2
  - CDASHIG v2.2
- Grant-funded projects
  - CDASH SAE Supplement v2.0 – targeted publication late Q1 2021
- Other project
  - CDASH CRF Library project (eCRF Portal) – CRFs for almost 20 domains by late Q4 2020

SDTM/SDTMIG

- Planned for November 2021 Release
  - SDTM v2.0
  - SDTMIG v3.4
  - Conformance Rules v2.0
- Other Projects
  - SDTM Variable Definitions (SDTM v2.0 and the following version)
  - SDTMIG Variable Roles (SDTMIG v4.0)
  - SDTMIG Biospecimens (SDTMIG v4.0)
  - SDTM Metadata Submission Guidelines v2.0 – targeted publication late Q1 2021
  - SDTMIG QRS Supplements – working towards publishing quarterly
- Future development
  - SDTM v2.1, SDTMIG v4.0, and Conformance Rules v3.0

Medical Devices

- Worked with ADaM on ADaMIG-MD (2021)
- Conformance Rules v1.0 draft is complete
- MDIG v2.0 targeted for 2022
  - possible new structure
  - DO/DU
  - CDASH consistent device identifier
  - exposure to ancillary devices

PGx (Genomics)

- GF Domain (replaces PF from SDTMIG-PGx) to be incorporated into the SDTMIG v3.4
- GGG approval for public review scheduled for 11 December 2020
- Publication in November 2021

- The Genomic Findings (GF) domain is a findings domain used to represent findings related to the structure, function, evolution, mapping and editing of subject and non-host organism genomic material of interest. This domain includes, but is not limited to, assessments and results for genetic variation, transcription, and summary measures derived from these assessments.

ADaM

- Planned for November 2021 Release
  - ADaM Non-compartmental Analysis IG v1.0
  - ADaM OCCDS v1.1
  - ADaMIG Medical Devices v1.0
  - ADaMIG v1.3

- Other Projects
  - ADaM Traceability Examples
  - ADaMIG QRS Supplements – published quarterly
  - ADaM Oncology
  - ADaM Conformance Rules v3.0 (published October 2020)

Data Exchange Standards

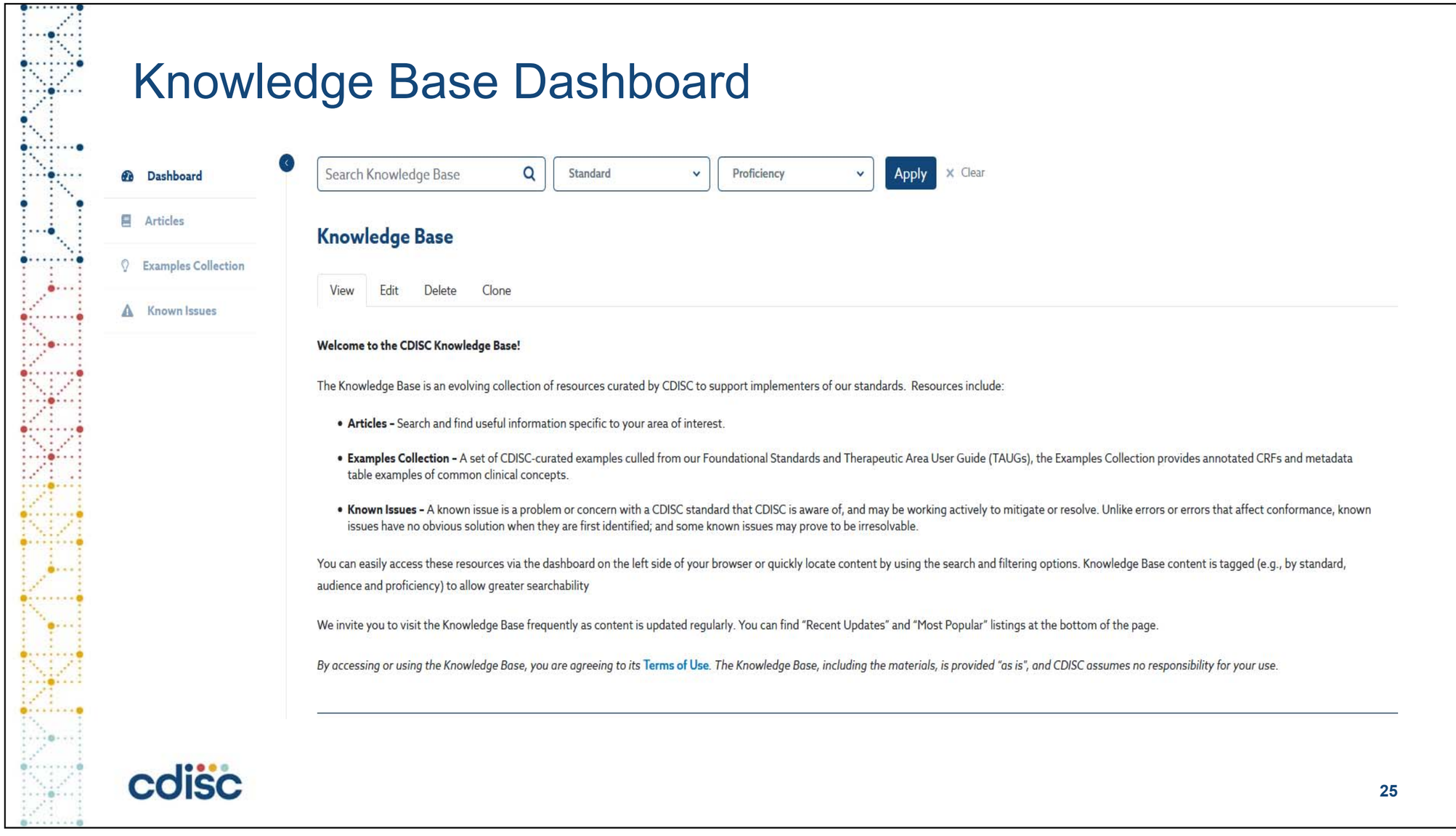
- Define-XML v2.1 Conformance Rules – targeted publication Q1 2021
- ODM v2 – targeted publication Q4 2021

New and Ongoing Projects/Initiatives

CDISC Knowledge Base

An open, assessible, searchable and user-friendly interface on the CDISC Website to host new and existing website content for CDISC implementers

Knowledge Base Dashboard



CDISC Primer

- Implementation of standards can be complex and overwhelming for new users
- PHUSE heard concerns, CDISC collaborated
- Project launched at PHUSE CSS 2018 in Silver Spring
- Part of “Optimizing the Use of Data Standards” Working Group
- All content is freely available

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cdisc PRIMER

In collaboration with PHUSE

cdisc.org

phuse.eu

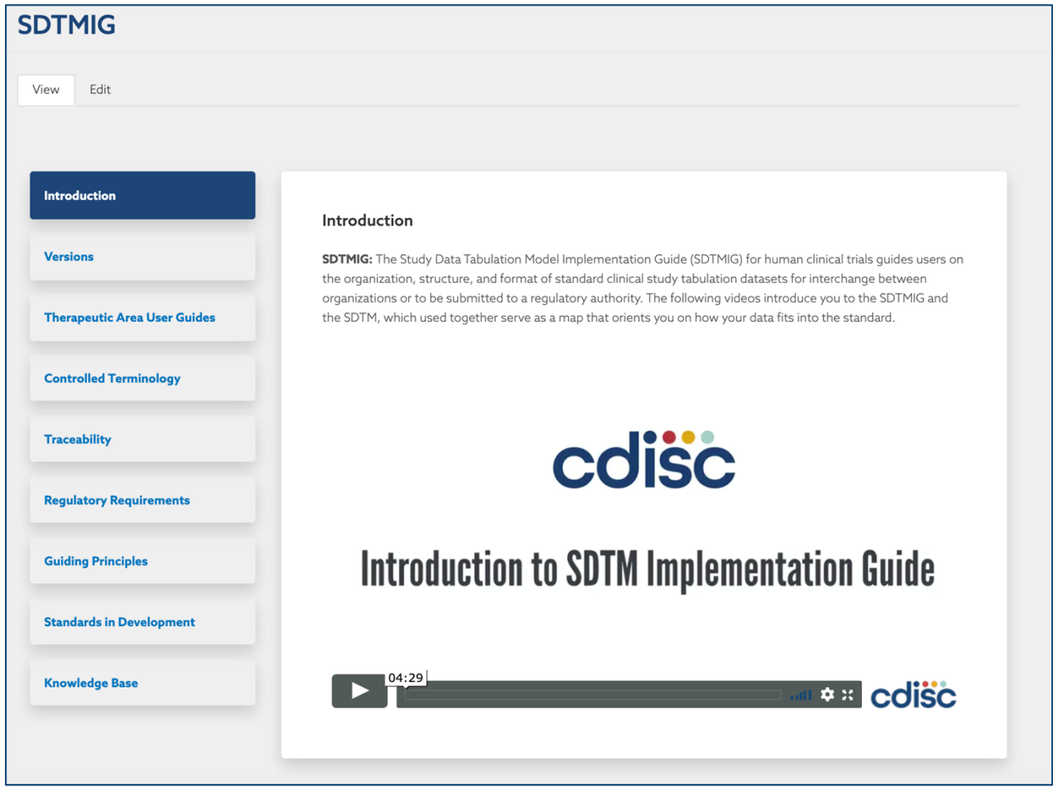
Initial Topics

TOPIC 1:
HOW TO GET STARTED WITH CDISC

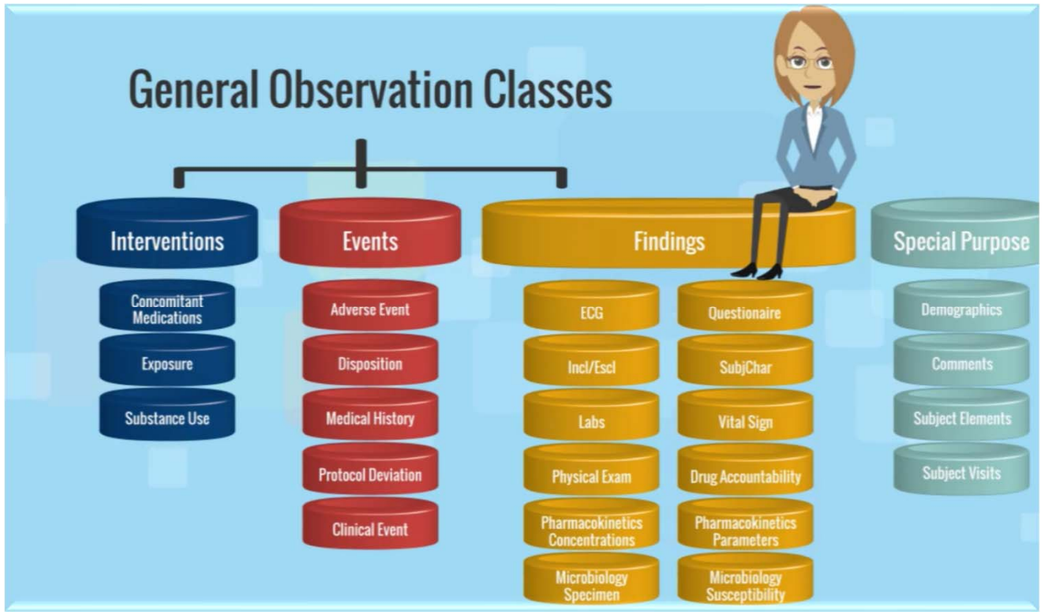
TOPIC 2:
LINKS AMONG CDISC STANDARDS

TOPIC 3:
TRACEABILITY

Page Overview



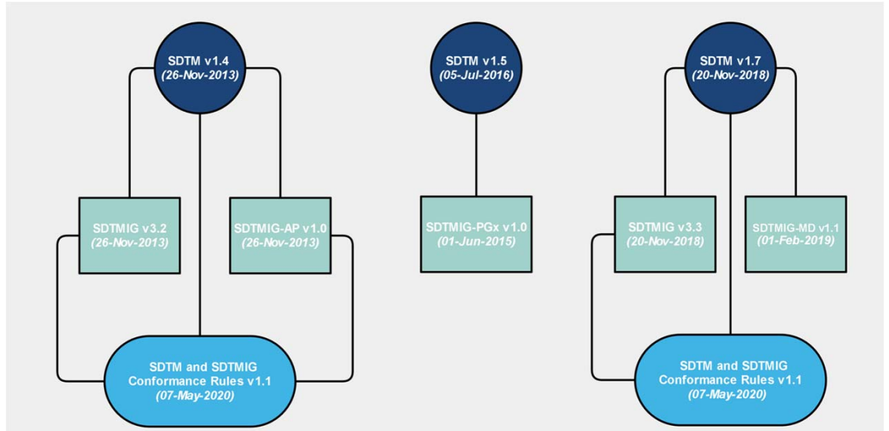
Getting Started with CDISC



- **3-Minute Videos Covering**

- CDISC Foundational Standards
- Controlled Terminology
- Therapeutic Area User Guides
- Regulatory Requirements

Links Among Standards

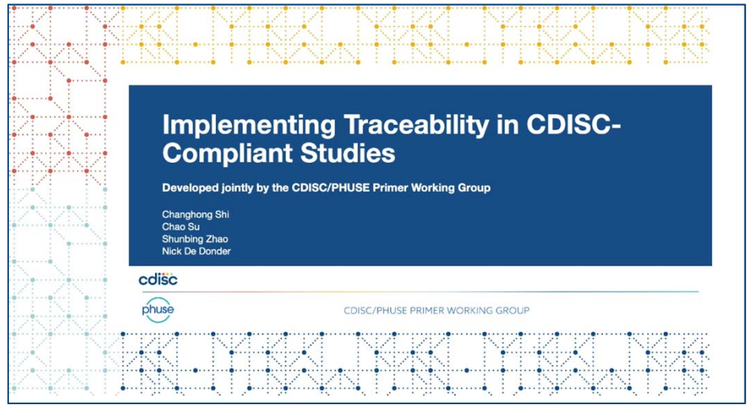


A Study Data Tabulation Model Implementation Guide (SDTMIG) is developed in reference to a specific SDTM model. However, the SDTM is cumulative – each new release builds on the previous model. Therefore, the models are backward compatible. For example, SDTMIG-AP v1.0 was developed in reference to SDTM v1.4, but it may be used in a submission that uses SDTM v1.7.

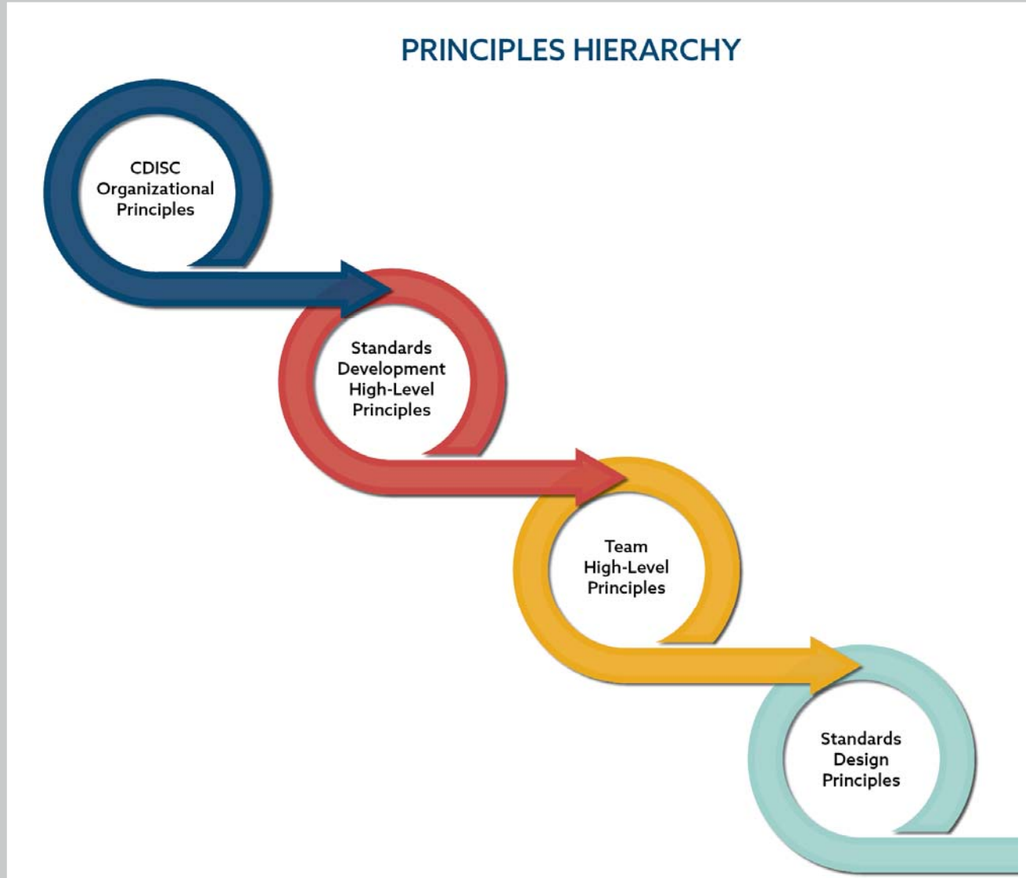
Implementers should be aware that if they are referencing a model for which the IG was not originally developed, variables may have been added or deprecated from the model. In addition to models and implementation guides, conformance rules have been developed, which help to ensure that generated data structures conform to the standards. These rules aim to identify all conformance rules and case logic from the SDTM and SDTMIG, classifying and codifying them in a form that supports quality processes and tool development.

Version	Related
SDTMIG v3.3 20 November 2018	SDTM v1.7 SDTMIG for Medical Devices v1.1 SDTMIG-PGx v1.0 SDTMIG-AP v1.0 Conformance Rules v1.1 for SDTMIG v3.2 and v3.3
SDTMIG v3.2 26 November 2013	SDTM v1.4 SDTMIG for Medical Devices v1.0 SDTMIG-AP v1.0 Conformance Rules v1.1 for SDTMIG v3.2 and v3.3
SDTMIG for Medical Devices v1.1 1 February 2019	SDTM v1.7
SDTMIG for Medical Devices v1.0 23 January 2012	SDTM v1.4
SDTMIG-PGx v1.0 1 June 2015	SDTM v1.5
SDTMIG-AP v1.0 12 December 2013	SDTM v1.4 Conformance Rules v1.1 for SDTMIG v3.2 and v3.3

Traceability



CDISC Guiding Principles



CDISC Guiding Principles

Standards Development Guiding Principles

Principle: Start with the end in mind

Statement:
Consider the needs of stakeholders at all levels and functions (e.g., data creation, cleaning, analysis and review).
Rationale:
Standards are only effective if adopted, and standards are only adopted if the adopters recognize a benefit.
Key Benefits:
When standards development carefully considers the needs of the users, promotion of the final standard is simplified. Stakeholders readily see the advantages and ideally will promote the standard to others.

Principle: Align strategic development projects with strategic goals

Principle: Be clear

Principle: Be stable

Principle: Be useful

Principle: Deliver value

Principle: Maintain conceptual integrity

Principle: Manage scope with incremental development

Principle: Right-size governance

Principle: Nimble governance

Principle: Escalation

CDISC Certification

- CDISC Tabulate
  - SDTM and SDTMIG Certification
- Pilot Testing to begin mid-December through Jan 2021
- https://www.cdisc.org/education/cdisc-standards-certification
- From the CDISC website “To accommodate the high demand for professionals with proven experience implementing CDISC Standards and integrating our standards into an organization’s systems and processes, CDISC is now offering certification to individuals within the standards community with documented experience, a passing grade on the certification exam and annual certification maintenance.”

CDISC Certification Test Structure and Format

- Two pilot (beta) tests developed using SDTM v1.7 and SDTMIG v3.3
- 188 questions
  - The CDISC Tabulate Certification Pilot Exam consists of 125 scored items and 53 unscored questions.
- Multiple-choice (single answer) questions
- The exam duration is expected to last 4.5 hours (5 hours total sitting time).
- Pilot test used to determine the passing score for the exam
- Final tests expected to be 125-150 multiple-choice questions

eCRF Portal - Purpose

- Provide an “out-of-the-box” solution for new CDASH users
- Meet the basic needs for most users, while also allowing for customization
- Increase use of CDASH
- Align with CDISC 360’s vision for end-to-end automation

eCRF Portal

- Targeting end of 2020 or early 2021 – first CRF package release in the Knowledge Base
- Q1 2021 – begin work on the next set of CRFs (TBD)
- eCRF Portal will contain annotated CRFs from the CDASHIG v2.1 in multiple formats, including PDF, HTML & ODM

Enhancing ADaM standards – Analysis Results Standard

Add features that support automation of analysis results

Provide guidance on basic analysis structures towards analysis results generation

Provide greater traceability between analysis results and analysis data

What does this look like?

- Concept-based standards development for ***generally accepted analyses***
- Analysis dataset examples including relevant controlled terminology
- Expansion of the standardization that is provide by the ARM specification for Define.xml
  - Methodology guidance examples
  - Pseudo code for transformations and derivations
- Standardized analysis results metadata for TFL generation
  - Structure
  - Terminology
  - Enhancing traceability and documentation of the results

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What content will be the focus?

- Most common safety analyses
- TAUGs with analysis components
- TAUGs without analysis components
- Community generated content
- Will not focus on TFL layout
  - Example options for layouts for illustration purposes

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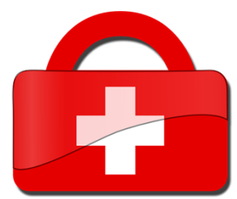
Safety User Guide

- Safety User Guide is aiming to align collection, tabulation, analysis and display of the most common safety data collected in research

- The Safety User Guide will compile information needed from collection, tabulation through analysis for commonly performed safety analyses to reduce variability across implementations



Why Develop a Safety User Guide

- Currently there is lack of a unified CDISC Safety User Guide that spans from data collection through analysis results
- Each CDISC Foundational Standard has information on Safety Data that is commonly collected across studies of a wide-variety of indications
- The TAUGs also often collect disease-specific safety information and examples
- Will identify the most commonly performed safety analyses
  - Confirm these are supported by CDASH and SDTM
  - Align format of these TFLs with the ongoing Analysis Results Standard effort

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Thank You!

Thierry Lambert, ADCLIN

https://www.linkedin.com/in/thierry-lambert-348a131/

Experience

CEO
AdClin
Mar 1999 – Present · 21 yrs 9 mos

Director, EU Computer Services
Wyeth
Aug 1989 – Sep 1995 · 6 yrs 2 mos

Researcher
CREDOC
Sep 1986 – Jul 1989 · 2 yrs 11 mos

À quoi sert la terminologie contrôlée ?

GUF Webinar – 2020-11-26

Thierry Lambert

Plan

- Le problème
- L’outil interne et les types de codelists
- Conclusion

Le problème

- La TC = une suite de liste de codes (codelists).
  - pour chaque item: un ID, une valeur de soumission, une définition, un « NCI preferred term »
  - pour chaque codelist: pareil + « extensible yes/no » (dans ce cas, la « valeur de soumission » n'est jamais soumise)
  - point final: pas d'information « à quoi sert cette codelist ? »
- Le SDTM-IG
  - contient, lui, des noms de codelists pour certaines variables
  - mais il est mis à jour tous les X années
  - alors que la TC est mise à jour tous les trimestres
  - de plus, les codelists « pointées par » le SDTM-IG sont une infime minorité des codelists de la TC, quand il ne pointe pas « dans le vide » (par exemple codelist renommée)
  - un exemple: SCSTRESC n'a pas de codelist dans le SDTM-IG, alors que la TC en a... 12 !

Une solution

- AdClin a développé au cours du temps des outils internes pour aider au mapping SDTM
- On présente ici l'état actuel de notre outil interne de visualisation de la TC
  - au départ juste une suite de codelists au format HTML
  - contient maintenant le SDTM et SDTM-IG + liens avec la TC, nécessaires pour comprendre comment utiliser les codelists et leur « géographie »

Une codelist simple: ACN

- pas extensible
- présentation « Value+Synonyms/Label/Definition/Id »
- ajout: lien vers la variable qui l'utilise

Le système TESTCD/TEST

- Exemple: les 2 premières codelists de la TC, A4STR1TC et A4STR1TN
- Les items sont exactement les mêmes (mais pas dans le même ordre), à part « submission value »
- C’est parce que la valeur dans A4STR1TC est pour --TESTCD, alors que la valeur dans A4STR1TN est pour --TEST
- On a donc en fait une seule codelist, mais avec pour chaque item deux valeurs, celle de --TESTCD et celle de --TEST (différente du « NCI Preferred Term » car limitée à 40 caractères)
- Dans notre visualisateur, toutes ces « paires » sont une seule codelist

Les sous-codelists

- Exemple: STENRF
- Selon les tableaux de variables du SDTM-IG, s'applique aux variables --STRF, --ENRF, --STRTPT et --ENRTPT
- Mais en fait non: il y a trois ensemble de codes appartenant à STENRF (3 « sous-codelists »):
  - codes pour –STRF et –ENRF
    - (position d'une date de début ou de fin par rapport à une période)
  - codes pour –STRTPT
    - (positions d'une date de début par rapport à un point dans le temps)
  - codes pour –ENRTPT
    - (positions d'une date de fin par rapport à un point dans le temps)
- Bilan:
  - STENRF ne s'applique à aucune variable
  - STENRF est « cherry-picked »:
    - elle a des sous-codelists qui « font leur marché » indépendamment dans les codes disponibles
    - du coup certains codes apparaissent dans plusieurs sous-codelists (par exemple « BEFORE » se trouve dans toutes les sous-codelists)

Une codelist très productive: NY

- 5 sous-codelists connues
  - Y
  - N
  - Y N
  - Y N U
  - Y N NA (supposition pour --OCCUR)
- L'information est souvent dans le texte des documents
  - --PRESP et --SPCUFL: dans le SDTM
  - donc annotation sémantique du HTML (attributs data-)
- Listes « applies to » :
  - variables SUPP du CDASH
  - codetables
    - exemple DD.DDSTRESC where DDTESTCD = HMROIND
    - => 2020-03-27/DD_Codetable_Mapping.xlsx

Codetables

- Accessibles sur le site du CDISC
- Fréquence de maintenance indéterminée
- Parfois pas en phase avec la TC (codes « CNEW »)
- Donne des relations entre codelists
  - pas d'information « à quoi ça s'applique »
  - DD_Codetable_Mapping.xlsx: NY et AGEU, même variable?
  - différence voulue ?
    - AUTOPIND/DTHCOIND/DTHWIND => NY_YNU
    - HMROIND => NY
- Contiennent des erreurs
  - visiblement maintenues à la main
  - quand les codes ne « matchent » pas la TC, l'erreur est évidente
  - parfois (ci-dessus) on ne sait pas si c'est une erreur ou non

Le système QRS

- Trois codelists QSCAT, FTCAT et CCCAT
  - QSCAT pour QS, FTCAT pour FT, CCCAT pour… RS!
- Des centaines de codelists comme A4STR1TC/A4STR1TN
  - 276 dans la TC du 2020-03-27
  - s'appliquent à xxTESTCD et xxTEST
- Le synonyme xxCAT permet de « prédire » la codelist pour xxTESTCD (QSTESTCD: 200 codelists)
- En fait une seule codelist « QRSCAT » (« aggregated codelist »), avec une colonne supplémentaire « domaine »
  - la valeur de « domain » pour un item change au gré des versions
  - dernière en date: ECOG est passée de QS à CC = RS
  - problème côté SDTMIG: la distinction QS/FT/CC a une part d'arbitraire, elle ne devrait pas être attachée au domaine

Les « sliced » codelists

- Par rapport aux « cherry picked » :
  - ont des sous-codelists
  - mais les sous-codelists se partagent les codes, sans intersection
- Exemple: EGSTRESC
  - chaque valeur correspond à une valeur de EGTESTCD et une seule
  - le mapping SDTM de EGSTRESC permet donc de prédire la valeur de EGTESTCD, qui s'avère juste une classification des observations d'ECG
- Autre exemple: ETHNICC
  - chaque valeur de CETHNIC (une SUPPDM du CDASH) permet de prédire la valeur de DM.ETHNIC
  - sauf qu'ils ont oublié « portoricain »

Les codelists d'unité

- Exemple: on veut coder dans LBORRESU « mg/mL »
- LB.LBORRESU > UNIT
- UNIT: find « mg/ml »
- C'est un synonyme:
  - il faut coder « g/L »
  - dont le preferred term est… « Kilogram per Cubic Meter » !
  - tout ça pour retourner à mg/mL dans les PARAM ADaM
- Solution connue de longue date: UCUM
  - projet: coder en UCUM et mapper automatiquement sur la dernière lubie de la TC

Information ajoutée dans certaines codelists

- LBTESTCD
  - numérateur et dénominateur
- TSPARMCD
  - multiple records
  - core (FDA vs IG)
  - notes (FDA et/ou IG)

Les cas complexes

- FA
  - la variable FATESTCD a des codelists par aire thérapeutique
  - suivant la valeur de FATESTCD, le type de FASTRESC varie
  - en particulier CVFARS, « sliced » par CVFATSCD
- EG
  - deux systèmes en parallèle pour les mêmes variables:
  - la variable EGTESTCD suit les codelists EGTESTCD et HETESTCD
  - la variable EGSTRESC suit les codelists EGSTRESC et HESTRESC
- RS: l'enfer
  - RSCAT suit deux codelists: ONCRSCAT et CCCAT
  - CCCAT suit la logique QRS, qui prédit les codelists de RSTESTCD
  - mais ONCRSCAT a une logique complètement différente associée à ONCRTSCD et ONCRSR
  - fun fact: d'après les codetables, la codelist des non-target responses RECIST 1.1 n'est pas la même quand c'est associé à iRECIST (non supporté par notre outil: message d'erreur à l'import)

Conclusion

- Nécessité d'ajouter de l'information en entrée
  - Annotation sémantique du HTML des standards
  - Information manquante dans les codetables (quelles variables?)
  - Numérateurs/dénominateurs dans LBTESTCD
  - Information TSPARMCD
  - Fichier standards.rb: un DSL (« domain-specific language ») qui permet d'entrer facilement de la connaissance
- Cette information devrait être maintenue par CDISC et disponible publiquement
- Le CDISC devrait avoir un modèle informatique comme le nôtre pour valider sa propre production:
  - Erreurs dans le SDTM IG
  - Erreurs dans la TC

Dave Iberson-Hurst and Kirsten Langendorf - SCUBED

Dave has over 40 years of industry experience with more than 20 years in the pharmaceutical industry, throughout which he has been using and helping develop the CDISC standards.

During that time, Dave led CDISC Technical work for 2.5 years, has been a member of CDISC's Blue Ribbon Commission, led the ODM and SHARE team leads and has co-led HL7's Regulated Clinical Research Working Group. He has worked closely with the FDA, CDISC, HL7, ISO, IHE and other organisations that promote better electronic processes for medical research. He was the lead author for the CDISC white paper on electronic source data that was used as the basis for EMA's guidance document.

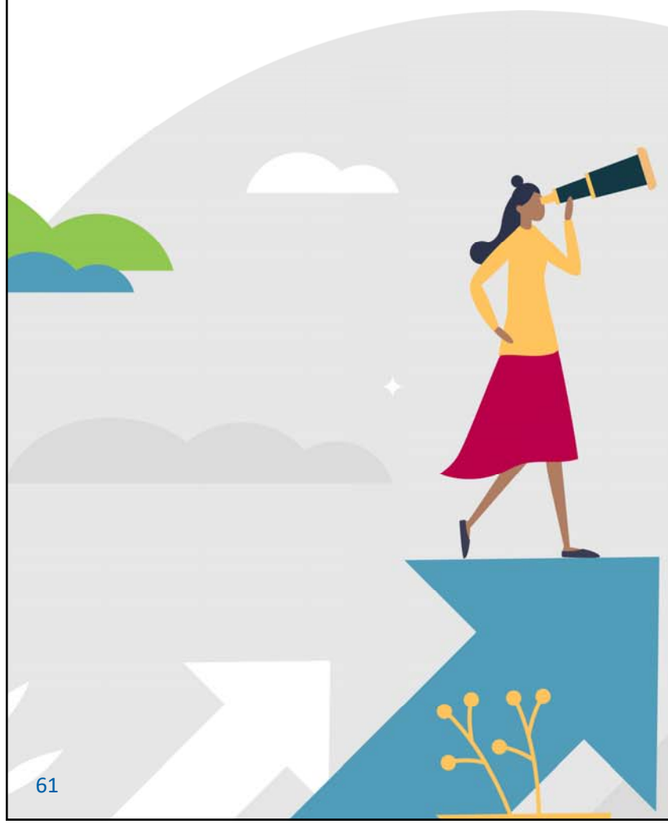
He is now a partner at S-cubed and A3, where he is focused exclusively on the effective management and use of metadata and data within pharmaceutical companies to improve process and data quality.

Dave presents regularly at industry conferences.

Kirsten has worked with the CDISC standards for over 10 years, ranging from Protocol, CDASH, SDTM and ADaM. She has a vast range of experience working in the industry and as consultant implementing IT systems and CDISC standards and the associated change management processes. She is also a highly skilled project manager who can ensure that your CDISC implementation works with your current systems and any future installations. Kirsten is part of the A3 Informatics team as Head of Product Delivery and is key to the development of future proofing your use of standards.

To BC or Not to BC – CDISC GUF

S-cubed/A3 Informatics



Kirsten Langendorf
Dave Iberson-Hurst

26th November 2020

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The Title of the Talk

To BC, or not to BC, that is the question:

**** To Biomedical Concepts or not to Biomedical Concepts***

Hamlet Act 3 Scene1
William Shakespeare

To be, or not to be, that is the question:
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous fortune,
Or take arms against a sea of troubles and by opposing end them?

Hamlet Act 3 Scene1
William Shakespeare

Être, ou ne pas être, c'est là la question.
Y a-t-il plus de noblesse d'âme à subir
La fronde et les flèches de la fortune outrageante,
Ou bien à s'armer contre une mer de douleurs
Et à l'arrêter par une révolte?

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Today …

A short talk, highlights

- Z k|#Elrp hglfd#Frqfhswv
- Z do#kurxj k#Elrp hglfd#Frqfhsw#EFv,
- D#bwh#klvru|#r#oxvwdw#kh#h|#ghdv#ehklqg#EFv
- Vrp h#sudfwlfd#yhz v
- Vkrz #z kdw#v#srvvleoh#rgd|
- Z kdw#z h#krsh#r#gr#rp ruurz
- Vwdu#klqj#derxw#khp /#vorz o#dgrsw

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Some Early BC Thinking

2009 and Lego

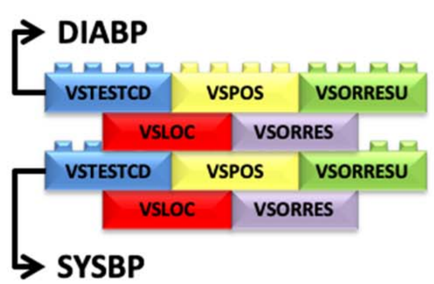
533<

San Diego 2009

45th Annual Meeting

DIA DRUG INFORMATION ASSOCIATION

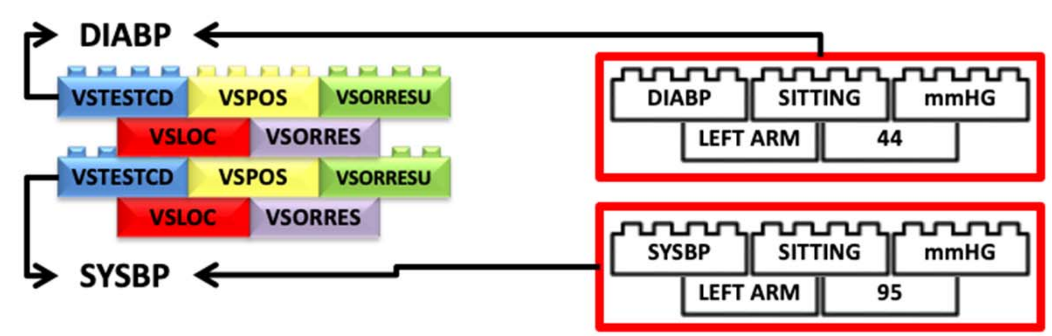
USUBJID	VSSEQ	VSTESTCD	VSTEST	VSPOS	VSLOC	VSORRES	VSORRESU
ABC-001-001	12	SYSBP	Systolic Blood Pressure	SITTING	LEFT ARM	95	mmHg
ABC-001-001	13	DIABP	Diastolic Blood Pressure	SITTING	LEFT ARM	44	mmHg



and blood pressure is the two together

The data only make sense when we link it to the meta data

USUBJID	VSSEQ	VSTESTCD	VSTEST	VSPOS	VSLOC	VSORRES	VSORRESU
ABC-001-001	12	SYSBP	Systolic Blood Pressure	SITTING	LEFT ARM	95	mmHg
ABC-001-001	13	DIABP	Diastolic Blood Pressure	SITTING	LEFT ARM	44	mmHg



- Frpelqdwlrq#ri#yduldeohv#lqwr#d#froohfwlrq#wkdw#eulqjv# phdqlqj/#wkh#qdwxudo#irup#ri#wkh#gdwd
- Uhpryh#rqh#sduw#dqg#wkh#sdfndjh#orvhv#phdqlqj
- Ghilqlwlrqv#kdyh#sdwwhuqv#+whpsodwhv,
- EFv#surylgh#wkh#uhodwlrqvklsv#lq#rxu#gdwd

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A little Later

2012 and MS Excel

Concept	Reqd	Used	Observation						
			Name	Reqd	Used	Coded Values	CDASH Variable Mapping	SDTM Variable Mapping	Additional SDTM Fixed Variable Mapping
Height	O	Y	Result	Y	Y		VSORRES	VSORRES	
							VSORRESU	VSORRESU	
			Units	Y	Y	cm			
						in			
			Test Code	Y	Y				VSTESTCD
						HEIGHT			
			Test Name	Y	Y				
						Height			

- Djdlq/#frp elqdwrq#ri#ydoxhdnv#qwr#d#frdnfwrq#wkdw#eubjv#p hdqlqj
- Frgh#Dvw#xevhw
- Iqhqwilfdwrq
- Vwxfwxuh#dqg#hodwrqvkls

Format	Presentation	Displayed Values (Code List Decode)	Reqd	Used	Code List Ref	Code Ref	Coded Va
4.1							
	DD				C66770		
		cm	O	Y		C49668	cm
		in	O	Y		C48500	IN
					C66741		
						C25347	HEIGHT
					C67153		
						C25347	Height

5345

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Complete

FDA Guidance

STUDY DATA TECHNICAL CONFORMANCE GUIDE

Technical Specifications Document

This Document is incorporated by reference into the following Guidance Document(s):

Guidance for Industry *Providing Regulatory Submissions in Electronic Format – Standardized Study Data*

For questions regarding this technical specifications document, contact CDER at cder-edata@fda.hhs.gov or CBER at cber-edata@fda.hhs.gov

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research (CDER)
Center for Biologics Evaluation and Research (CBER)

November 2020

Appendix A: Data Standards and Interoperable Data Exchange

This appendix provides some of the guiding principles for the Agency's long-term study data standards management strategies. An important goal of standardizing study data submissions is to achieve an acceptable degree of *semantic interoperability* (discussed below). This appendix describes different types of interoperability and how data standards can support interoperable data exchange now and in the future.

At the most fundamental level, study data can be considered a collection of data elements and their relationships. A data element is the smallest (or *atomic*) piece of information that is useful for analysis (e.g., a systolic blood pressure measurement, a lab test result, a response to a question on a questionnaire).

A data value is by itself meaningless without additional information about the data (so called *metadata*). Metadata is often described as *data about data*. Metadata is structured information that describes, explains, or otherwise makes it easier to retrieve, use, or manage data.[62] For example, the number *44* itself is meaningless without an association with Hematocrit and the unit of measurement (e.g. "%"). Hematocrit in this example is metadata that further describes the data.

Just as it is important to standardize the representation of data (e.g., M and F for male and female, respectively), it is equally important to standardize the metadata. The expressions Hematocrit = 44; Hct = 44, or Hct Lab Test = 44 all convey the same information to a human, but an information system or analysis program will fail to recognize that they are equivalent because the metadata is not standardized. It is also important to standardize the definition of the metadata, so that the meaning of a hematocrit value is constant across studies and submissions.

Vlqfh#5347

In addition to standardizing the data and metadata, it is important to capture and represent relationships (also called associations) between data elements in a standard way. Relationships between data elements are critical to understand or interpret the data. Consider the following information collected on the same day for one subject in a study:

Systolic Blood Pressure = 90 mmHg
Position = standing
Systolic Blood Pressure = 110 mmHg
Time = 10:23 a.m.
Time = 10:20 a.m.
Position = lying

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Unit of Knowledge & Structure

```
139     {
140       ":label": "Result",
141       ":mandatory": true,
142       ":collect": true,
143       ":enabled": true,
144       ":ordinal": 11,
145       ":complex_datatype": "PQR",
146       ":question_text": "Result",
147       ":prompt_text": "Height",
148       ":format": "5.2",
149       ":alias": "--ORRES",
150       ":ct": []
151     },
152     {
153       ":label": "Result",
154       ":mandatory": true,
155       ":collect": true,
156       ":enabled": true,
157       ":ordinal": 11,
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160       ":prompt_text": "Unit",
161       ":format": "20",
162       ":alias": "--ORRESU",
163       ":ct": [
164         {
165           ":ordinal": 1,
166           ":cl": "C66770",
167           ":cli": "C49668",
168           ":submission": "cm"
169         },
170         {
171           ":ordinal": 2,
172           ":cl": "C66770",
173           ":cli": "C48500",
174           ":submission": "in"
175         },
176         {
177           ":ordinal": 3,
178           ":cl": "C71620",
179           ":cli": "C41139",
180           ":submission": "m"
181         },
182         {
183           ":ordinal": 4,
184           ":cl": "C71620",
185           ":cli": "C71253",
186           ":submission": "ft"
187         }
188       ]
189     }
190   ]
```
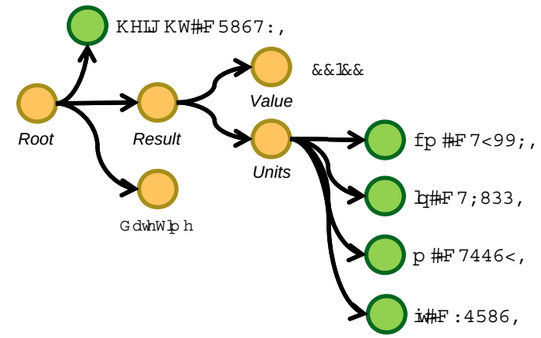
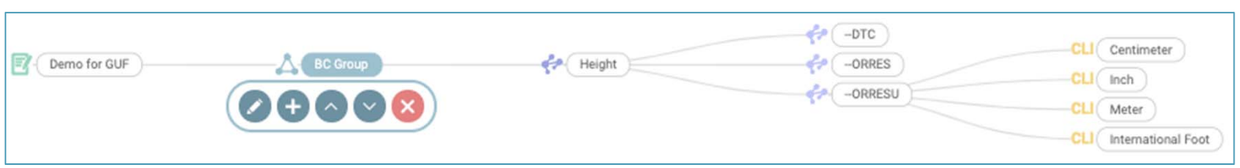

label	mandatory	collect	enabled	ordinal	complex_datatype	question_text	prompt_text	format	alias	ct
Test	TRUE	FALSE	TRUE	1	CD			8	--TESTCD	[1, C66741, C25347, HEIGHT]
Date Time	TRUE	TRUE	TRUE	2	DATETIME	Date and time	Date Time		--DTC	
Category Code	TRUE	TRUE	FALSE	3	CD				--CAT	
Subcategory Code	TRUE	TRUE	FALSE	4	CD				--SCAT	
Position	TRUE	TRUE	FALSE	5	CD				--POS	
Site of Administration	TRUE	TRUE	FALSE	6	CD				--LOC	
Laterality	TRUE	TRUE	FALSE	7	CD				--LAT	
Method	TRUE	TRUE	FALSE	8	CD				--METHOD	
Not Done	TRUE	TRUE	FALSE	9	BL				--STAT	
Reason Not Done	TRUE	TRUE	FALSE	10	CD				--REASND	
Result	TRUE	TRUE	TRUE	11	PQR	Result	Height	5.2	--ORRES	
Result	TRUE	TRUE	TRUE	11	PQR	Unit	Unit	20	--ORRESU	[1, C66770, C49668, cm], [2, C66770, C48500, in], [3, C71620, C41139, m], [4, C71620, C71253, ft]

- Z h#fdq#ylhz #wkh#ghilqlwlrqv#q#p dq|#rup v
- Z h#fdq#dowhq
- Z h#fdq#ylhz #q#wkhl#qdwxud#rup
- Ehwwhu#z lk#vwxfwxuh#bqg#wkh#qkuhqw#hodwlrqvkls v
- V|vwhp v#fdq#xvh#wr#dxwrp dwh





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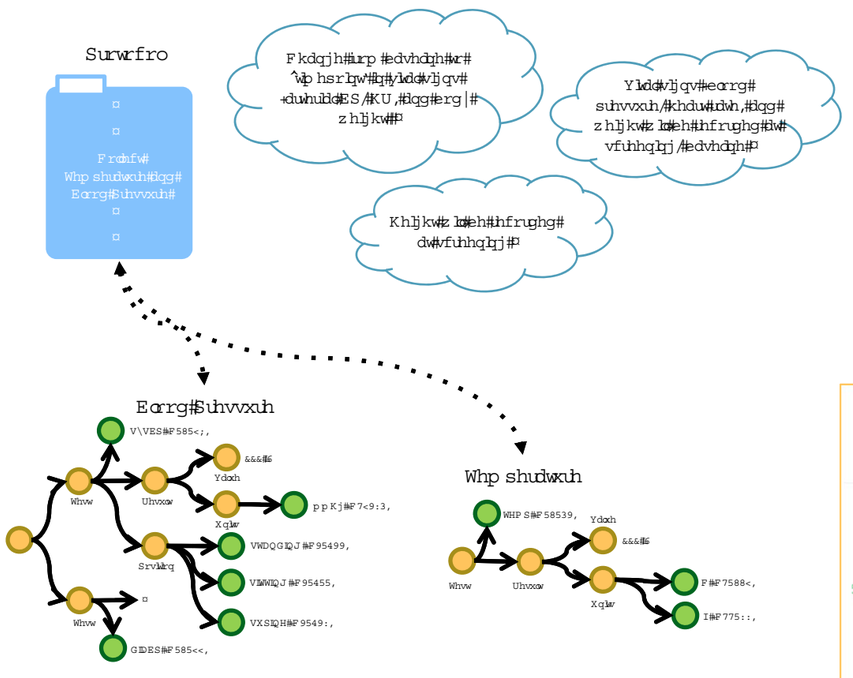
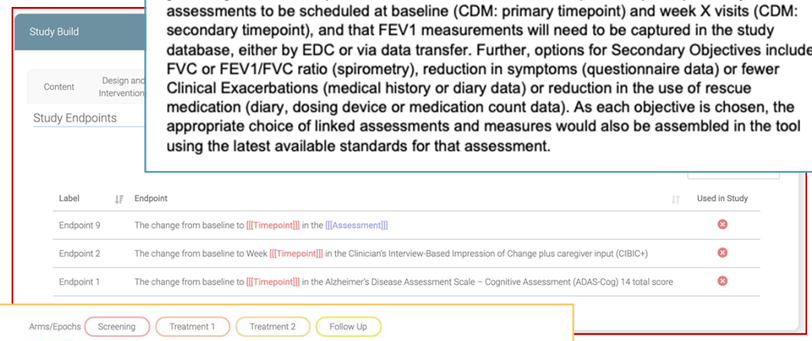
What Can I Do …

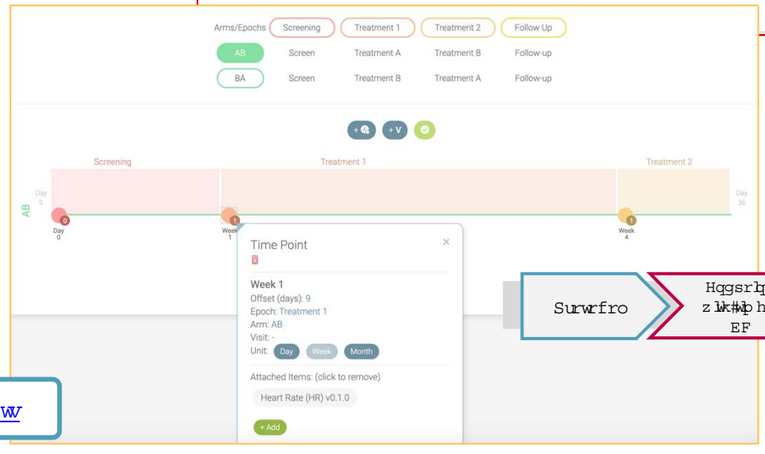
Protocol

- Z kdw#z h#wdon#derxw#q#Surwrfrov#uh#EF v#ru#vhw#ri#EF v#dvvhvvp hqw/#
  lqvwxp hqw#wf,
- Z h#fdq#vwduw#r#dqj#ehwz hhq#kh#wz r
- P dnh#wdqvirup dwrq#ri#surwrfrov#qwr#p dfklqh#hdgdedn#ghvljqv#ehwwhu



For example, using the TA Library for Asthma, a study in severe asthma could have as its Primary Objective "To evaluate the effect of drug x in participants with severe asthma." The primary endpoints linked to this objective are limited to "absolute change in percent of predicted FEV1 from baseline to [Week X]" OR "increase [magnitude of change] in FEV1 from baseline to [Week X]." This also implies that the FEV1 biomedical concept will require spirometry assessments to be scheduled at baseline (CDM: primary timepoint) and week X visits (CDM: secondary timepoint), and that FEV1 measurements will need to be captured in the study database, either by EDC or via data transfer. Further, options for Secondary Objectives include FVC or FEV1/FVC ratio (spirometry), reduction in symptoms (questionnaire data) or fewer Clinical Exacerbations (medical history or diary data) or reduction in the use of rescue medication (diary, dosing device or medication count data). As each objective is chosen, the appropriate choice of linked assessments and measures would also be assembled in the tool using the latest available standards for that assessment.





Surwrfro → Hqgsrlqw# z lwk#Wp h# # EF → Wp hdqh# z lwk#EF v

SKXVH#IX#Frqqhfw#534;/#VI46/#Idvlqj#\rxu#Sdlq#z lwk#Elrp hqlfdd#Frqfhsw

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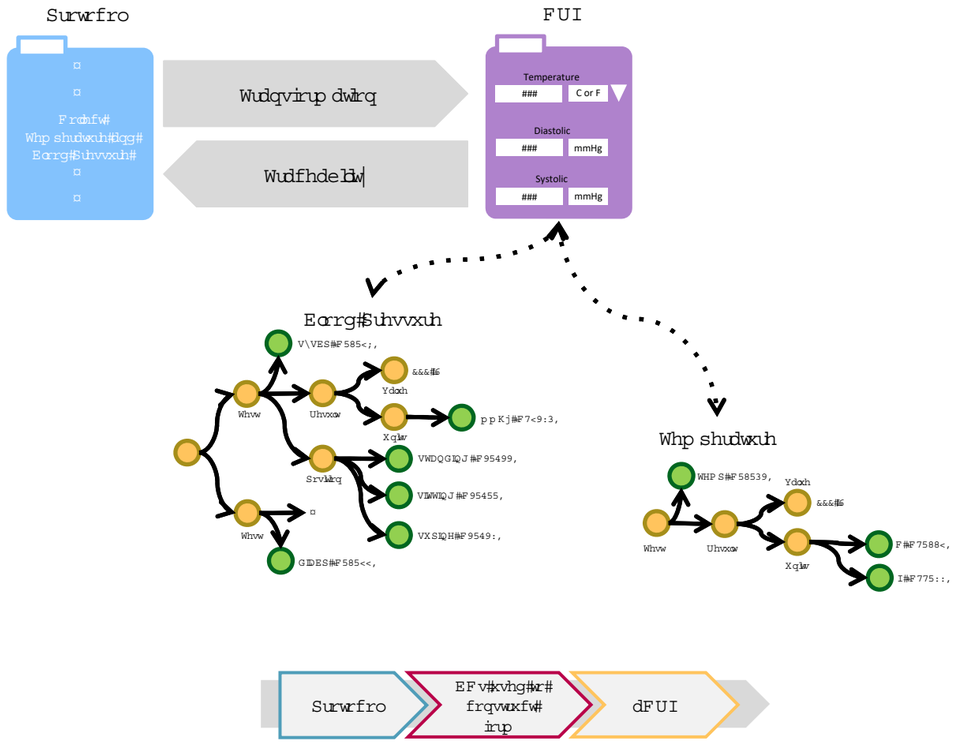
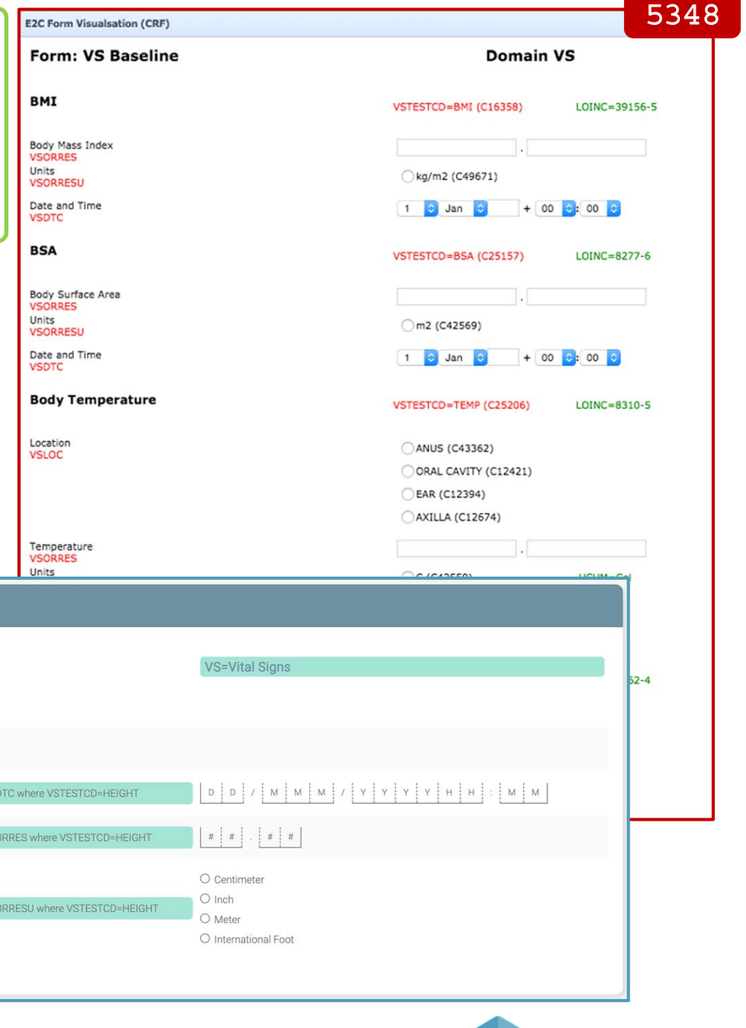
What Can I Do …

CRF & Study Setup

- X vh#wkh#EFv#wr#ghilqh#d#irup 1#
- Z lw#ghilqhg#lqdwlrqvklsv#urp #VGWP #grp dlqv#wr#EFv# dqqrwdwlrqv#fdq#eh#p dgh# dxwrp dwf

5348





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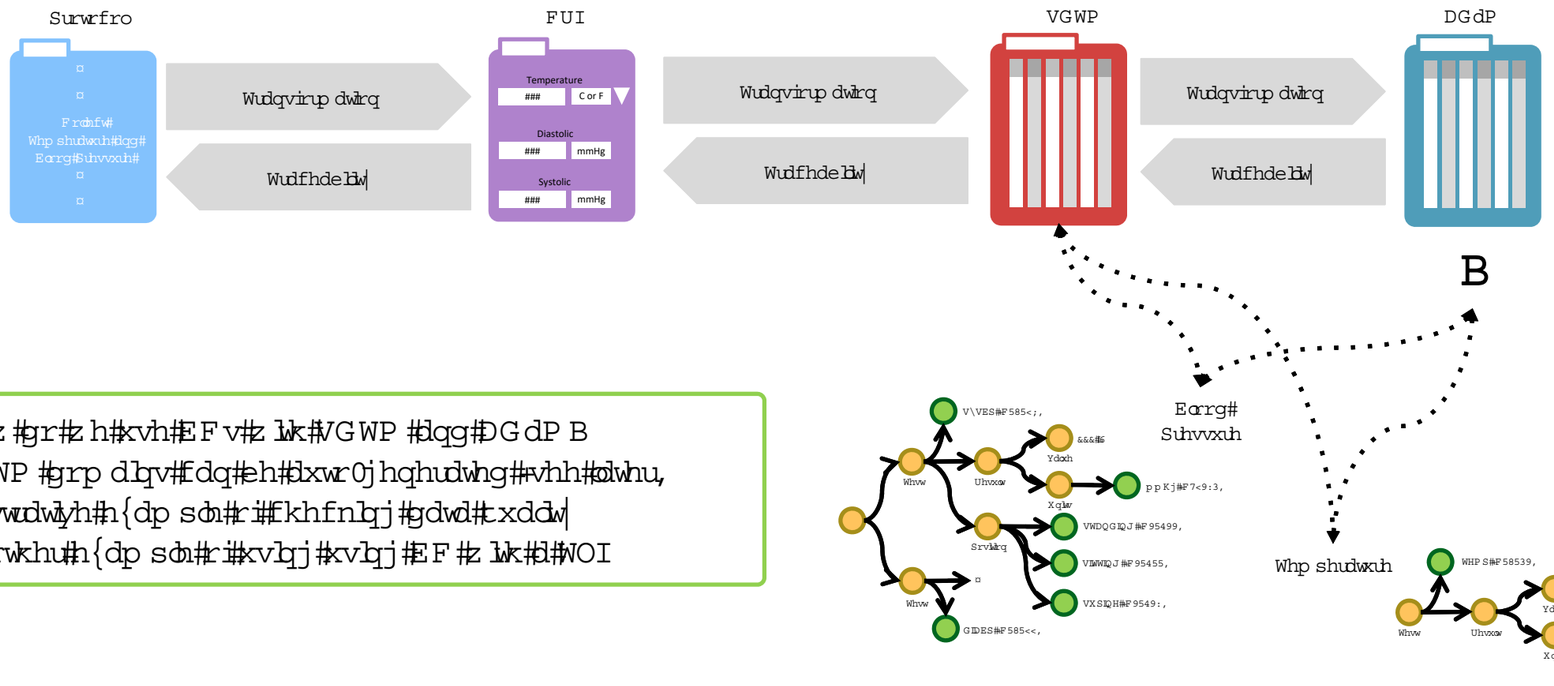
What Can I Do …

SDTM, ADaM and Automation



- Krz#gr#zh#kvh#EFv#zlk#VGWP#dqg#DGdP B
- VGWP#grp dlqv#fdq#eh#dxwr0jhqhudwhg#vhh#dwhu,
- Ioxvwudwlyh#n{dp sdn#r#fkhfnlqj#gdwd#txddw
- Dqrwkhu#n{dp sdn#r#kvlqj#kvlqj#EF#zlk#d#WOI

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What Can I Do …

Data Checking – allowable units

Alias	Question Text	Prompt Text	Datatype	Format	Terminology
--TESTCD			CD	8	DIABP C25299 (VSTESTCD C66741 v61.0.0)
--STAT			BL		
--SCAT			CD		
--REASND			CD		
--POS	Body Position	Position	CD	40	STANDING C62166 (POSITION C71148 v62.0.0); SITTING C62122 (POSITION C71148 v62.0.0); SUPINE C62167 (POSITION C71148 v62.0.0)
--ORRESU	Unit	Unit	PQR	20	mmHg C49670 (VSRESU C66770 v59.0.0)
--ORRES	Result	Result	PQR	5,2	
--METHOD			CD		
--LOC	Location of Measurement	Location	CD	40	ARM C32141 (LOC C74456 v62.0.0)
--LAT	Laterality	Laterality	CD	40	LEFT C25229 (LAT C99073 v57.0.0); RIGHT C2 v57.0.0); BILATERAL C13332 (LAT C99073 v5
--DTC	Date and time	Date Time	DATETIME		
--CAT			CD		

STUDYID	USUBJID	VISITNUM	VSTESTCD	VSORRES	VSORRESU
CDISCPILOT01	01-701-1015	1	DIABP	64	mmHg
CDISCPILOT01	01-701-1015	1	DIABP	83	mmHg
CDISCPILOT01	01-701-1015	1	DIABP	57	mmHg
CDISCPILOT01	01-701-1015	2	DIABP	68	mmHg
CDISCPILOT01	01-701-1015	2	DIABP	59	mmHg
CDISCPILOT01	01-701-1015	2	DIABP	71	mmHg
CDISCPILOT01	01-701-1015	3	DIABP	56	mmHg
CDISCPILOT01	01-701-1015	3	DIABP	51	mmHg
CDISCPILOT01	01-701-1015	3	DIABP	61	mmHg
CDISCPILOT01	01-701-1015	3.5	DIABP	8911	Pa
CDISCPILOT01	01-701-1015	3.5	DIABP	61	mmHg
CDISCPILOT01	01-701-1015	3.5	DIABP	65	mmHg
CDISCPILOT01	01-701-1015	4	DIABP	56	mmHg
CDISCPILOT01	01-701-1015	4	DIABP	50	mmHg
CDISCPILOT01	01-701-1015	4	DIABP	54	mmHg
CDISCPILOT01	01-701-1015	5	DIABP	64	mmHg
CDISCPILOT01	01-701-1015	5	DIABP	55	mmHg
CDISCPILOT01	01-701-1015	5	DIABP	53	mmHg
CDISCPILOT01	01-701-1015	6	DIABP	72	mmHg
CDISCPILOT01	01-701-1015	6	DIABP	8113	Pa
CDISCPILOT01	01-701-1015	6	DIABP	53	mmHg

- Frqvwuxfwhg#h{dp sdn
- Wz hdnhg#YV#ru#kdyh#Sd#dv#kqlw#ru#vrp h#revhuydwrqv
- Wkh#EF#dorz v#rqo|#p p Kj
- Xvlqj#wkh#EF#ghilqlwrq#r#Fkhfn#ru#dorz dedn#kqlw

What Can I Do ...

Data Checking – allowable units

STUDYID	USUBJID	VISITNUM	VSTESTCD	VSORRES	VSORRESU
CDISCPILOT01	01-701-1015	1	DIABP	64	mmHg
CDISCPILOT01	01-701-1015	1	DIABP	83	mmHg
CDISCPILOT01	01-701-1015	1	DIABP	57	mmHg
CDISCPILOT01	01-701-1015	2	DIABP	68	mmHg
CDISCPILOT01	01-701-1015	2	DIABP	59	mmHg
CDISCPILOT01	01-701-1015	2	DIABP	71	mmHg
CDISCPILOT01	01-701-1015	3	DIABP	56	mmHg
CDISCPILOT01	01-701-1015	3			
CDISCPILOT01	01-701-1015	3			
CDISCPILOT01	01-701-1015	3.5			
CDISCPILOT01	01-701-1015	3.5			
CDISCPILOT01	01-701-1015	3.5			
CDISCPILOT01	01-701-1015	3.5			
CDISCPILOT01	01-701-1015	4			
CDISCPILOT01	01-701-1015	4			
CDISCPILOT01	01-701-1015	4			
CDISCPILOT01	01-701-1015	5			
CDISCPILOT01	01-701-1015	5			
CDISCPILOT01	01-701-1015	5			
CDISCPILOT01	01-701-1015	6			
CDISCPILOT01	01-701-1015	6			
CDISCPILOT01	01-701-1015	6			

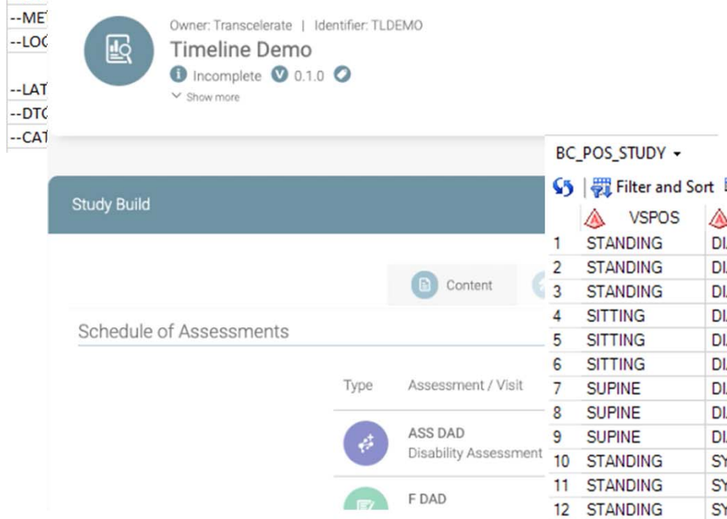
- Wkh#wz hdnhg#VV#grp dlq#dv#qsxw
- Fuhdwh#dl#uhsruw#z lwk#wkh#fkhfn#ehlqj#uxq#fkhfn#lq#VVUHVX#fdq#eh#rxqg#q#efbdorz dednbxqlw,
- Vwdwxv#froxp q#wkrz v#kdw#wrp h#revhuydwrqv#kdyh#z urqj#xqlw

STUDYID	USUBJID	VISITNUM	VSTESTCD	VSORRES	VSORRESU	status	bc_allowable_units
CDISCPILOT01	01-701-1015	1	DIABP	64	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	1	DIABP	57	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	1	DIABP	83	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	2	DIABP	59	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	2	DIABP	68	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	2	DIABP	71	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	3	DIABP	56	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	3	DIABP	51	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	3	DIABP	61	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	3.5	DIABP	65	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	3.5	DIABP	8911	Pa	wrong unit	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	3.5	DIABP	61	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	4	DIABP	56	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	4	DIABP	54	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	4	DIABP	50	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	5	DIABP	64	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	5	DIABP	53	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	5	DIABP	55	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	6	DIABP	8113	Pa	wrong unit	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	6	DIABP	72	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)
CDISCPILOT01	01-701-1015	6	DIABP	53	mmHg	unit ok	mmHg C49670 (VSRESU C66770 v59.0.0)

What Can I Do …

Used for TLF – study BC

Alias	Question Text	Prompt Text	Datatype	Format	Terminology
--TESTCD			CD	8	DIABP C25299 (VSTESTCD C66741 v61.0.0)
--STAT			BL		
--SCAT			CD		
--REASND			CD		
--POS	Body Position	Position	CD	4	STANDING C62166 (POSITION C71148 v62.0.0); SITTING C62122 (POSITION C71148 v62.0.0); SUPINE C62167 (POSITION C71148 v62.0.0)
--ORRESU	Unit	Unit	PQR	20	mmHg C49670 (VSRESU C66770 v59.0.0)
--ORI					
--ME					
--LOC					
--LAT					
--DTC					
--CAT					



BC_POS_STUDY

Filter and Sort | Query Builder | Where | Data | Describe | Graph | Analyze | Export | Send To

	VSPOS	VSTESTCD	VISITNUM	Alias	Question Text	Prompt Text	Datatype	Format	Terminology
1	STANDING	DIABP	1	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
2	STANDING	DIABP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
3	STANDING	DIABP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
4	SITTING	DIABP	1	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
5	SITTING	DIABP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
6	SITTING	DIABP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
7	SUPINE	DIABP	1	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
8	SUPINE	DIABP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
9	SUPINE	DIABP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
10	STANDING	SYSBP	1	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
11	STANDING	SYSBP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
12	STANDING	SYSBP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
13	SITTING	SYSBP	1	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
14	SITTING	SYSBP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
15	SITTING	SYSBP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
16	SUPINE	SYSBP	1	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
17	SUPINE	SYSBP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
18	SUPINE	SYSBP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…

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- Xvhj#EF #ghilqlwrq#oiw,
- Xvhg#q#d#vwxg|#kh#ylvlw#urp #VrD lv# dgghg#wr#urp #d#vwxg|#EF #ehorz ,

What Can I Do …

Used for TLF – study BC to display if missing observation

BC_POS_STUDY

Filter and Sort | Query Builder | Where | Data | Describe | Graph | Analyze | Export | Send To

	VSPOS	VSTESTCD	VISITNUM	Alias	Question Text	Prompt Text	Datatype	Format	Terminology
1	STANDING	DIABP	1	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
2	STANDING	DIABP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
3	STANDING	DIABP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
4	SITTING	DIABP	1	--POS	Body Position	Position	CD	40	STANDING
5	SITTING	DIABP	8	--POS	Body Position	Position	CD	40	STANDING
6	SITTING	DIABP	13	--POS	Body Position	Position	CD	40	STANDING
7	SUPINE	DIABP	1	--POS	Body Position	Position	CD	40	STANDING
8	SUPINE	DIABP	8	--POS	Body Position	Position	CD	40	STANDING
9	SUPINE	DIABP	13	--POS	Body Position	Position	CD	40	STANDING
10	STANDING	SYSBP	1	--POS	Body Position	Position	CD	40	STANDING
11	STANDING	SYSBP	8	--POS	Body Position	Position	CD	40	STANDING
12	STANDING	SYSBP	13	--POS	Body Position	Position	CD	40	STANDING
13	SITTING	SYSBP	1	--POS	Body Position	Position	CD	40	STANDING
14	SITTING	SYSBP	8	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…
15	SITTING	SYSBP	13	--POS	Body Position	Position	CD	40	STANDING C62166 (POSITIO…

- Wkh#vwxg|#EF#dp lwhu#vkrz#YVSRV,
- VDV#dorz#ru#kvlqj#FODVVGDWD#q#uhsruw
- Uhsruw#z lo#vkrz#l#qr#gdwd#v#revhuyhg#+ehorz,

```
proc tabulate data=report CLASSDATA=BC_POS_STUDY;
    where( VISITNUM IN (1,8,13));
    class VSPOS  / ORDER=DATA MISSING;
    class vstestcd      / ORDER=DATA MISSING;
    class visitnum   / ORDER=DATA MISSING;
    var vsstresn;
    table visitnum='Visit' * VSTESTCD='Vital Sign Test',
          VSPOS *(VSSTRESN=' ' * Mean={LABEL="Mean"}*f=8.1 VSSTRESN=' ' * S

    title 'Summary of Blood Pressure (mmHg)';
run;
```

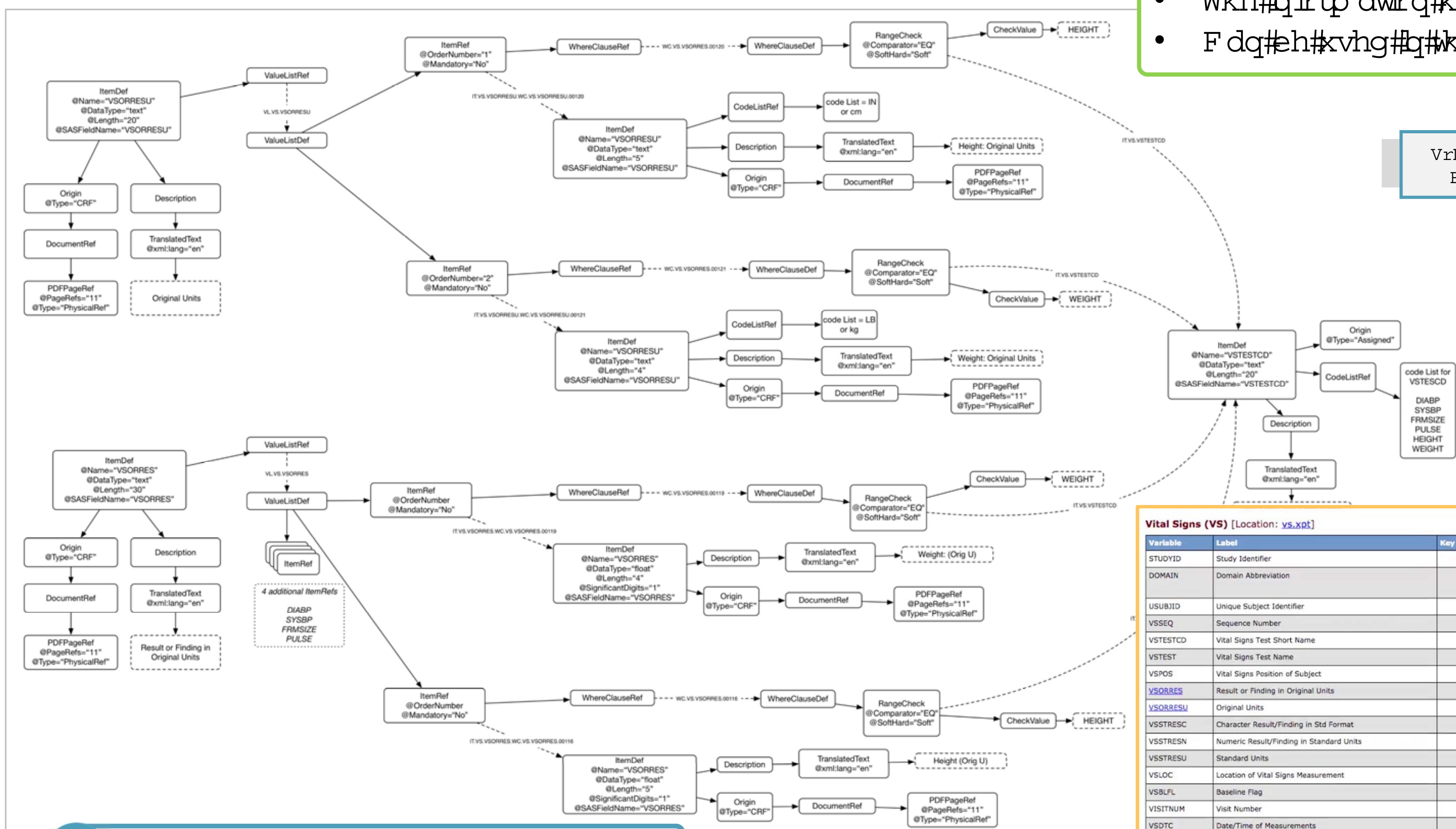
Summary of Blood Pressure (mmHg)

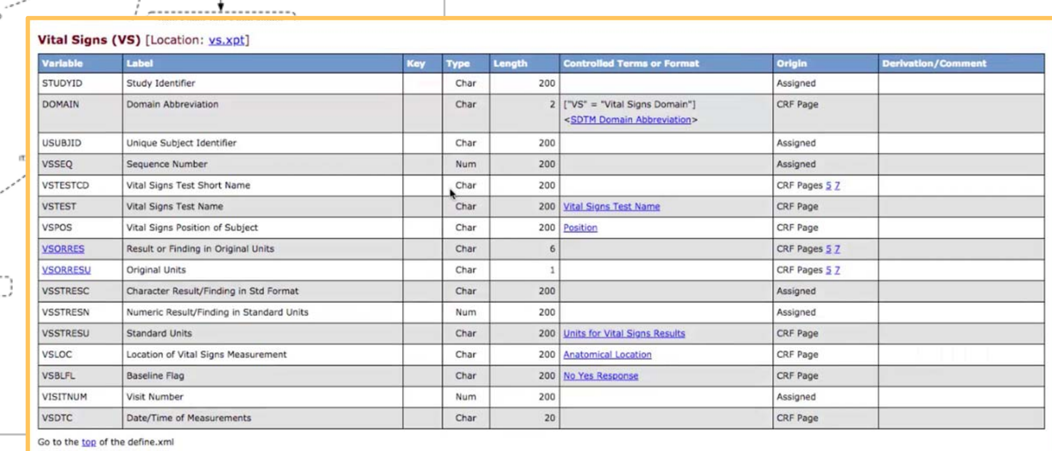
		Vital Signs Position of Subject					
		STANDING		SITTING		SUPINE	
Visit	Vital Sign Test	Mean	SD	Mean	SD	Mean	SD
1	DIABP	78.2	10.4	no obs	no obs	77.6	10.0
	SYSBP	138.5	19.0	no obs	no obs	141.5	18.6
8	DIABP	76.2	10.1	no obs	no obs	75.5	9.1
	SYSBP	134.7	17.2	no obs	no obs	137.1	16.9
13	DIABP	73.6	11.0	no obs	no obs	72.5	9.8
	SYSBP	127.8	17.5	no obs	no obs	130.8	17.7

What Can I Do …

Define

- Wklv#lv#d#ghwdlohg#uhsuhvhqwdwlrq#ri#wkh#[P O#vwuxfwxuh# ri#wzr#lwhp v#ri#Ydoxh#Ohyho#P hwdgdwd
- Frpsoh{#dqg#uhshdwhg#e|#hyhu|#vsrqvru
- Wkh#lqirupdwlrq#khuh#lv#dydlodeoh#lq#wkh#EFv
- Fdq#eh#xvhg#lq#wkh#jhqhudwlrq#ri#wkh#ghilqh1{p o





Vital Signs (VS) [Location: vs.xpt]

Variable	Label	Key	Type	Length	Controlled Terms or Format	Origin	Derivation/Comment
STUDYID	Study Identifier		Char	200		Assigned	
DOMAIN	Domain Abbreviation		Char	2	["VS" = "Vital Signs Domain"] <SDTM Domain Abbreviation>	CRF Page	
USUBJID	Unique Subject Identifier		Char	200		Assigned	
VSSEQ	Sequence Number		Num	200		Assigned	
VSTESTCD	Vital Signs Test Short Name		Char	200		CRF Pages 5 7	
VSTEST	Vital Signs Test Name		Char	200	Vital Signs Test Name	CRF Page	
VSPOS	Vital Signs Position of Subject		Char	200	Position	CRF Page	
VSORRES	Result or Finding in Original Units		Char	6		CRF Pages 5 7	
VSORRESU	Original Units		Char	1		CRF Pages 5 7	
VSSTRESC	Character Result/Finding in Std Format		Char	200		Assigned	
VSSTRESN	Numeric Result/Finding in Standard Units		Num	200		Assigned	
VSSTRESU	Standard Units		Char	200	Units for Vital Signs Results	CRF Page	
VSLOC	Location of Vital Signs Measurement		Char	200	Anatomical Location	CRF Page	
VSBLFL	Baseline Flag		Char	200	No Yes Response	CRF Page	
VISITNUM	Visit Number		Num	200		Assigned	
VSDTC	Date/Time of Measurements		Char	20		CRF Page	

Go to the top of the define.xml

SKXVH#534:#WW34#Khosluj#wkh#Ghilqh1{p o#Khu

S-CUBED

What Can I Do ...

Therapeutic Area Guides

- Z rxg#eh#kvhix#wr#kdyh#WD#Jxlghv#h{suhvvhg#q#EFv
- F rqvlvwhqw#Erup dw
- F rp sdwh
- P dfklgh#Jhdgdedn

5348

Concept Metadata Displays for Pulmonary Function Tests

Forced Vital Capacity (FVC) - RE

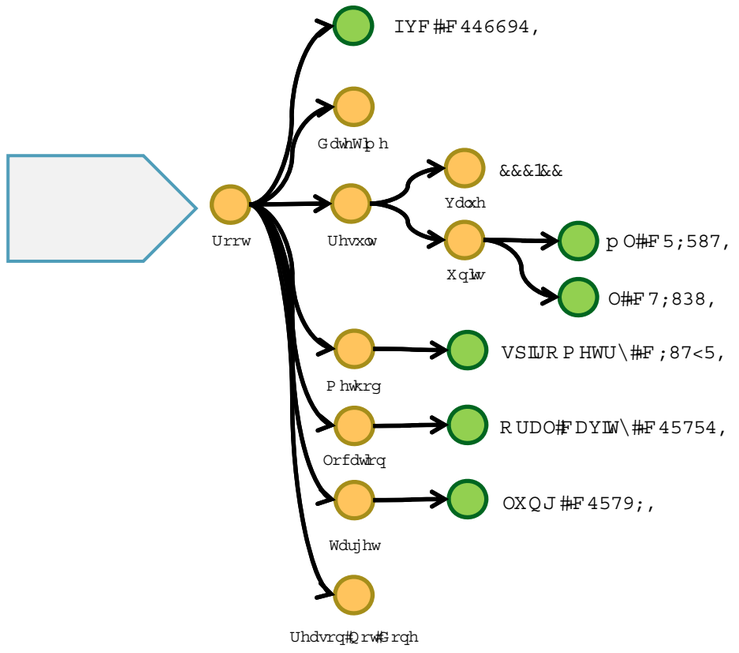
CDISC TAUG-Asthma v1.0 package

Concept: Forced Vital Capacity

Domain: RE
TEST: Forced Vital Capacity
TESTCD: FVC

value(s)	BRIDG-based concept variable	Attribute	SDTM variable(s)
C12468	FVC_OBS.DefinedObservation.targetAnatomicSiteCode.CD.code	Pre-specified target site	via DOMAIN=RE
LUNG	FVC_OBS.DefinedObservation.targetAnatomicSiteCode.CD.displayName.value		
C12421	FVC_OBS.DefinedObservation.approachAnatomicSiteCode.CD.code	Pre-specified site of administration	RELOC
ORAL CAVITY	FVC_OBS.DefinedObservation.approachAnatomicSiteCode.CD.displayName.value		
SPIROMETRY	FVC_OBS.DefinedObservation.methodCode.CD.code	Method	REMETHOD
from codelist C85492	FVC_OBS.DefinedObservation.methodCode.CD.displayName.value		
free text	FVC_OBS.DefinedObservation.methodCode.CD.originalText.value		
datetime	FVC_OBS.PerformedObservation.dateRange.IVL<TS>.low.value	Date Range	REDTC
integer	FVC_OBS.PerformedObservation.studyDayRange.IVL<INT>.low.value	Study Day Range	REDY
TRUE, FALSE (SDTM NOT DONE, null)	FVC_OBS.PerformedObservation.negationIndicator.BL.value	Negation Indicator	RESTAT
free text	FVC_OBS.PerformedObservation.negationReason.DSET<SC>.item.value	Negation Reason	REREASND
free text	FVC_RES.PerformedClinicalResult.valueNullFlavorReason.ST.value	Value NullFlavor Reason	REREASND
free text	FVC_RES.PerformedClinicalResult.value.PQ.originalText.value	Result value	REORRES, RESTRESC, RESTRESN
decimal	FVC_RES.PerformedClinicalResult.value.PQ.value		
C28254, C48505	FVC_RES.PerformedClinicalResult.value.PQ.unit.code	Result unit	REORRESU, RESTRESU
mL, L	FVC_RES.PerformedClinicalResult.value.PQ.unit.displayName.value		
TRUE, FALSE (SDTM Y, null)	FVC_RES.PerformedClinicalResult.baselineIndicator.BL.value	Baseline Indicator	REBLFL
formula for predicted normal value	FVC_RES.ReferenceResult.value.PQ.expression.value	Reference result value	REORREFR, RESTREFR
decimal	FVC_RES.ReferenceResult.value.PQ.value		
C28254, C48505	FVC_RES.ReferenceResult.value.PQ.unit.code	Reference result unit	see Result unit
mL, L	FVC_RES.ReferenceResult.value.PQ.unit.displayName.value		
Spirometer	Device used in testing		SPDEVID
Percent Predicted FVC	Normalized value derived from this result		

Terminology | BRIDG Mapping | Alias - Natural Language Tag | Mapping



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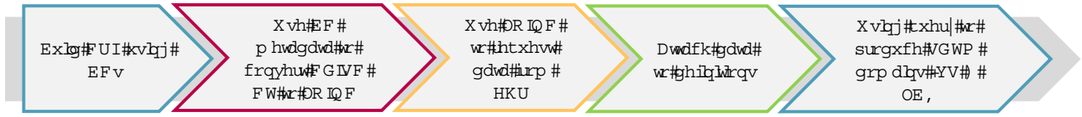
What Can I Do …

Real World Evidence



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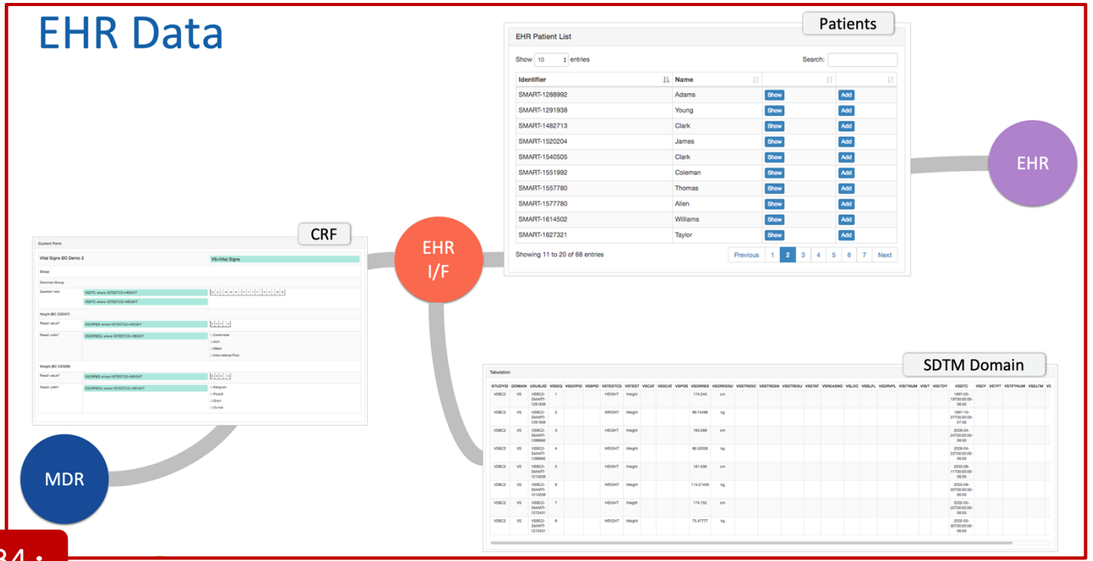
- EFv#surylgh#xq#ghilqlwrq#
- Doorz v#ru#dxwrp dwlrq#r#surfhvv
- VGWP #dxwr0jhqhudwrq#p lvvhg#kdylqj#xq#Vwxg|#ghilqlwrq#h1j1#Ylw#qirup dwlrq,#xw#rwkhu#z run#vkrz q#z h#fdq#kdyh#klv

EHR Data



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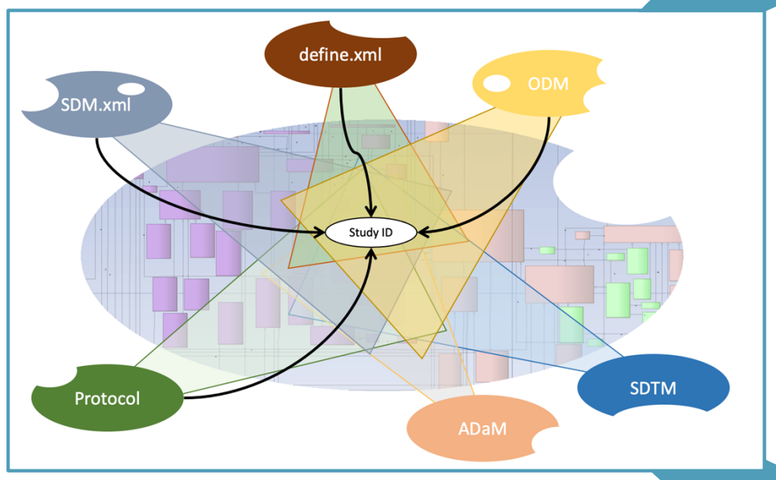
S-CUBED

Should Not Be A Surprise

Our data is at the centre of our world



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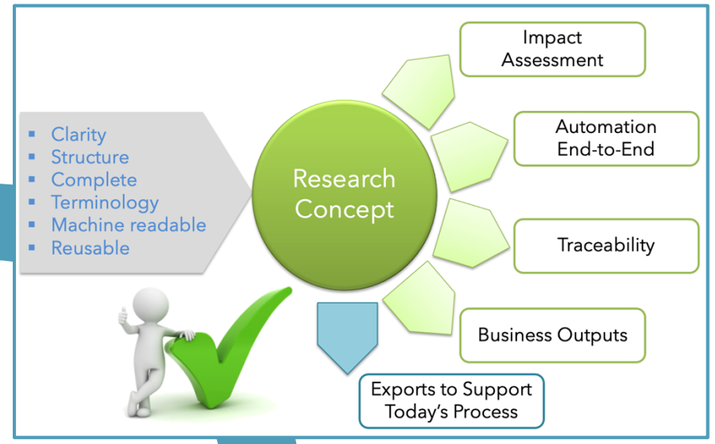

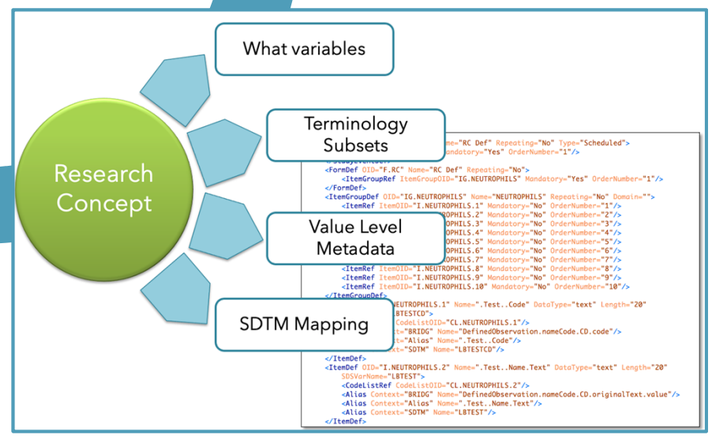

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S-CUBED

Summary

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frqvlvwhqw#ghilqlwlrqv1#Z h#z dqw#FGLVF#
wr#surylgh#wkh#oleudu|

Xvh#EFv#wr#lqwhjudwh#z lwk#UZ H#gdwd1#
Xvh#wkh#srz hu#ri#wkh#phwdgdwd#wr#dolj q#
z lwk#khdowkfduh#gdwd#

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Z h#grq*w#uhexlog#hyhu|#wlph/#z h#uhxvh#dq#
lqgxvwu|#ghilqlwlrq

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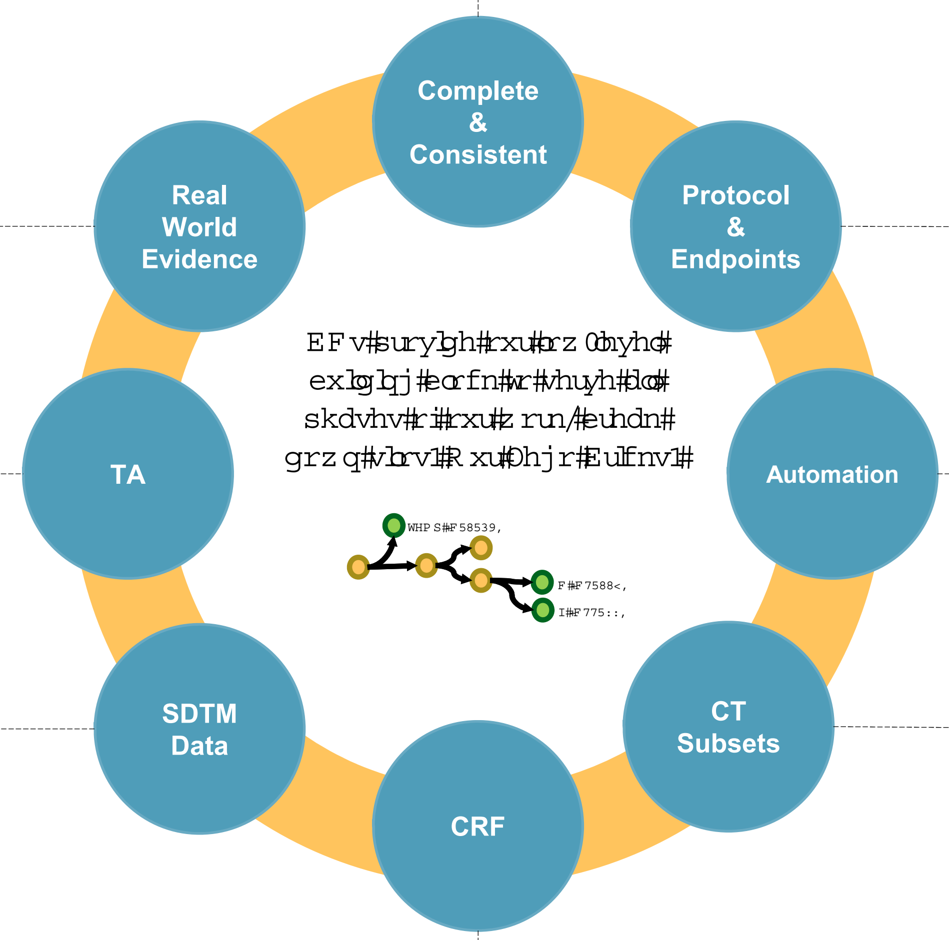

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dxwrpdwlrq

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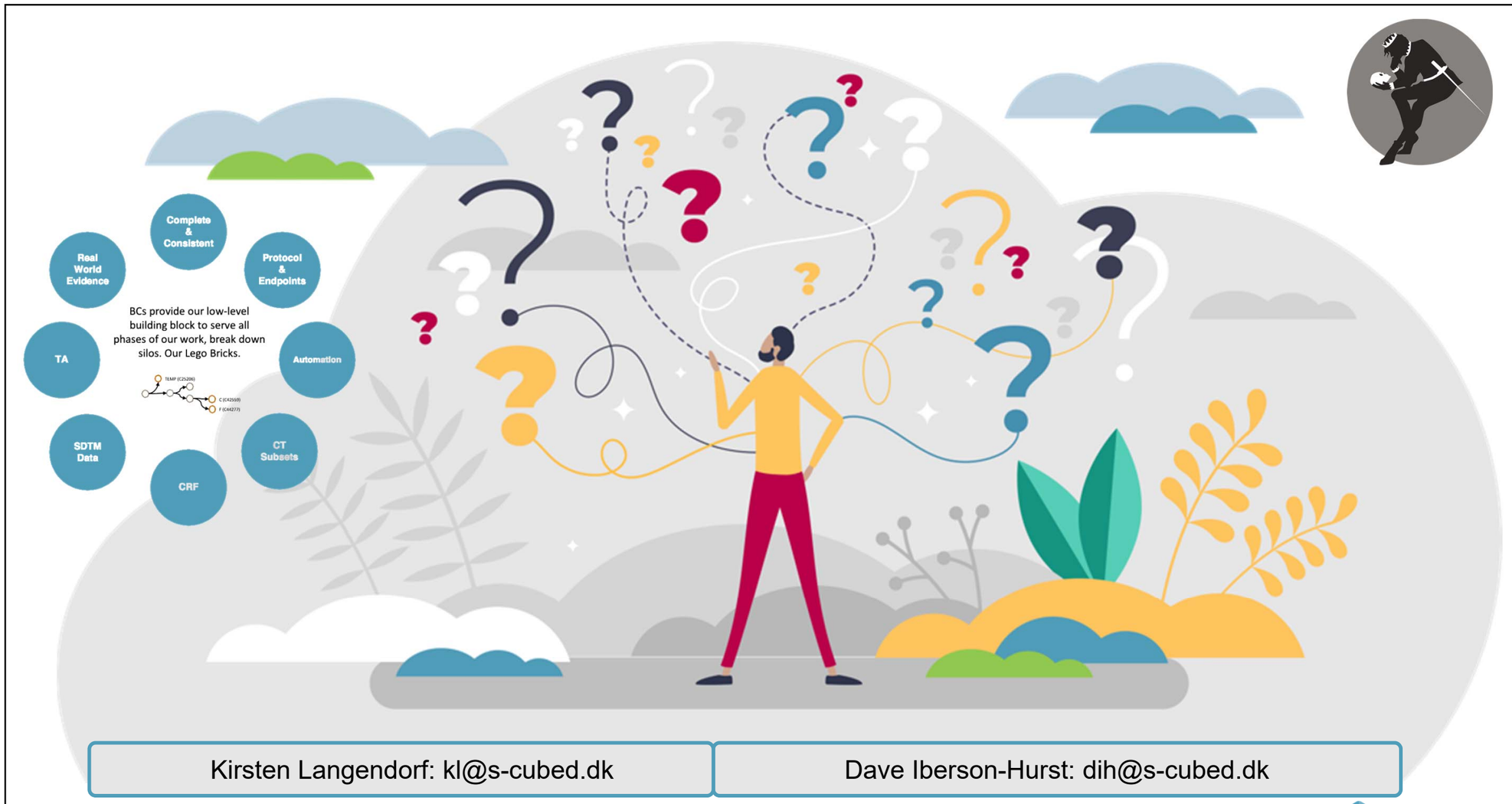


Kirsten Langendorf: kl@s-cubed.dk | Dave Iberson-Hurst: dih@s-cubed.dk

Wafaa Jabert, Ichnos Sciences

Wafaa occupe le poste de « Director of statistical Programming and Data Management » chez ichnos sciences.

Elle cumule 16+ années d'expérience en industrie pharmaceutique et biotech dans les domaines de Programmation, Standardisation et Data Management.

Elle possède une expérience directe dans les soumissions des dossiers des nouveaux médicaments pour la FDA et EMEA

Elle est membre actif du bureau CDISC GUF depuis 2009.

CDISC 2020 Europe Interchange

Virtual Conference

1-2 April 2020

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.*

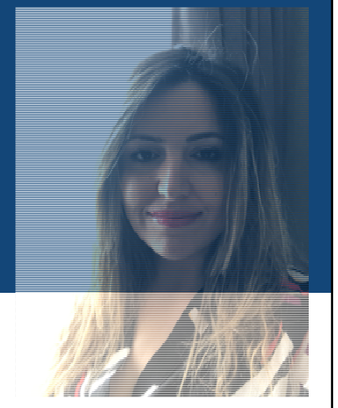
Use case for multiple screening/ enrollments

Presented by Wafaa Jebert

Head of Clinical Programming and Data Standards, Ichnos Sciences

Coordinator Member of the CDISC French users network

1-2 April 2020



Agenda

1. FDA guidance and MSI recommendation
2. Study Design
3. Implementation of the solution
4. P21 errors/Conclusion

Introduction

- The multiple screenings and enrollments are considered as a challenging topic in data preparation. It is complicated to represent the multiple screening data without breaking few rules in SDTM/ADaM

- This is a use case in a phase II study on how to implement this, using the latest FDA/MSI group recommendation. STUDY DATA TECHNICAL CONFORMANCE GUIDE v4.3 (march 2019)

FDA STUDY DATA TECHNICAL CONFORMANCE GUIDE (march 2019)

- An individual subject should have the exact same unique identifier across all datasets
- For subjects with multiple enrollments within a single study, the primary enrolment should be submitted in DM. Additional enrollments should be included in a custom domain with a similar structure to DM. Clarifying statements in the RG would be helpful.
- For subjects with multiple screenings and no subsequent enrollment, include the primary screening in DM with additional screenings in a custom domain with a structure similar to DM.
- For subjects with multiple screenings and subsequent enrollment, include the enrolment in DM with screenings in a custom domain with a structure similar to DM.

2019 Europe Interchange
Amsterdam, Netherlands | 6-10 May 2019

- Handling Multiple Enrollments and Screenings Subjects in SDTM: Are We There Yet?
- By Éanna Kiely

Study Design

Study Design

Study Design :

Study Design

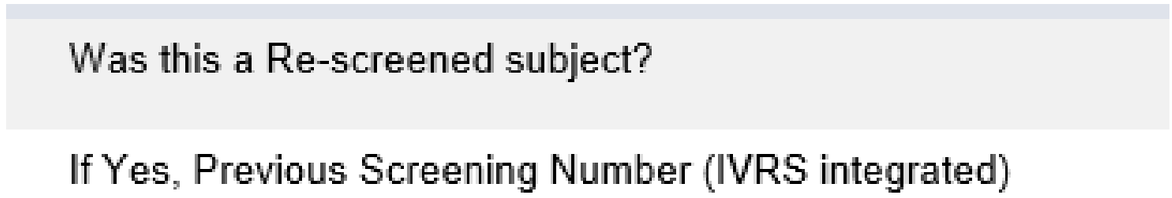
- Few subjects were allowed to finish the part one of the study and come back, sometimes few months later to get re-enrolled in part II of the study

- Subject who will get re-enrolled, should be re-screened again.

- Multiple screening is allowed by the protocol (Twice)

How this is Handled in the CRF

- For the rescreened subjects, there is a specific question in the CRF to report the previous subject number



How this is Handled in the CRF

- Similarly for the re-enrolled subjects, the part I study enrollment subject number was recorded

Implementation

Application : Impact on DM

- Screen failures, when provided, should be included as a record in DM with the ARM, ARMCD, ACTARM, and ACTARMCD field left blank. For subjects who are randomized in treatment group but not treated, the planned arm variables (ARM and ARMCD) should be populated, but actual treatment arm variables (ACTARM and ACTARMCD) should be left blank (FDA Technical guidance)

ETHNIC	ARMCD	ARM	ACTARMCD	ACTARM
NOT HISPANIC ...				

QNAM	QLABEL	QVAL
ARMNRS	Reason Arm and/or Actual Arm is Null	SCREEN FAILURE

Application : Impact on DM

DM				
	SD0002	FDAB027, CG0014	NULL value in ACTARM variable marked as Required	Error
	SD0002	FDAB027, CG0014	NULL value in ACTARMCD variable marked as Required	Error
	SD0002	FDAB027, CG0014	NULL value in ARM variable marked as Required	Error
	SD0002	FDAB027, CG0014	NULL value in ARMCD variable marked as Required	Error

Application : Impact on DM

- In DM we only keep :
- If screen fail => enrollment : enrollment is kept in DM, SCR FAIL in WD
- If enrollment part 1 => re-enrollment part 2 : first enrollment is kept in DM, Second ENRL in WD
- If screen fail => rescreen fail : first screen fail is kept in DM, second SCR FAIL in WD
- USUBJID is one used in DM

Application : Creation of WD domain

USUBJID	SUBJID	WDSEQ	RFICDTC	RFPENDTC	ARMCD	ARM	ACTARMCD	ACTARM	ARMNRS
1111-1111	1111-1112	1	2019-05-04	2020-02-10T10:08					SCREEN FAILURE
2000-101	2000-701	1	2018-03-28	2020-01-27	ARM A	ARM A	ARM A	ARM A	
2000-102	2000-702	1	2019-04-30	2020-02-04	ARM B	ARM B	ARM B	ARM B	

Application : Impact on Domains --LNKID

Add –LNKID to all the domains, in order to distinguish data that belongs to screen failure/re-enrollements

Three Subjects in the eDC

USUBJID	DSSEQ	DSLNKID	DSTERM	
250101005	1	250101005	INFORMED CONSENT OBTAINED	INFORMED CONSENT OBTAINED
250101005	2	250101005	RANDOMIZED	RANDOMIZED
250101005	3	250101005	COMPLETED	COMPLETED
250101005	4	250101005	COMPLETED	COMPLETED
250101005	5	250101903	INFORMED CONSENT OBTAINED	INFORMED CONSENT OBTAINED
250101005	6	250101903	SCREEN FAILURE	SCREEN FAILURE
250101005	7	250101907	INFORMED CONSENT OBTAINED	INFORMED CONSENT OBTAINED
250101005	8	250101907	SCREEN FAILURE	SCREEN FAILURE

The same example in DM/WD

Record In DM : First enrollment

USUBJID	SUBJID	DMSEQ	RFICDTC	RFPENDTC	ARMCD	ARM	ACTARMCD	ACTARM
250101005	250101004	1	2018-03-03	2018-08-09	ARM A	ARM A	ARM A	ARM A

Record In WD : Subject screened twice for the second enrollment

USUBJID	SUBJID	WDSEQ	RFICDTC	RFPENDTC	ARMCD	ARM	ACTARMCD	ACTARM	ARMNRS
250101005	250101903	1	2019-04-03	2019-04-19					SCREEN FAILURE
250101005	250101907	2	2019-04-17	2019-04-19					SCREEN FAILURE

Few more P21 errors

	SD1076	CG0013	Model permissible variable added into standard domain	Warning

- This is for all the Domains (except DM) because we added -- LNKID

SD1319	CG0068, CG0075	DSSTDTC is before RFICDTC	Error

- This is when the subject is SF and then gets enrolled, the RFICDTC comes for DM which happens after the ICF of the SF

	SD1117	FDAB021	Duplicate records	Warning

- In IE, when subjects are rescreened and failed the screening for the same reason

Conclusion

Conclusion

- Adding –LKNID in all the datasets, helps in identifying the screen failure data and multiple enrollment data, but how about oncology solid tumor studies

- Should we add subjid instead ? FDA TCG 4.4

For a study with multiple screenings and/or multiple enrollments per subject, **SUBJID should be included in other related domains besides** DM even though it may cause validation errors. It is recommended to include a table linking each SUBJID for a single subject to that subject's USUBJID with any additional necessary explanation included in the relevant RG.

- Remove the SF from ADaM

- A lot of justification in RG for both SDTM/ADaM

- Instead of separate custom DM domain, allow multiple records in DM ?

Thank You!

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Thank you