

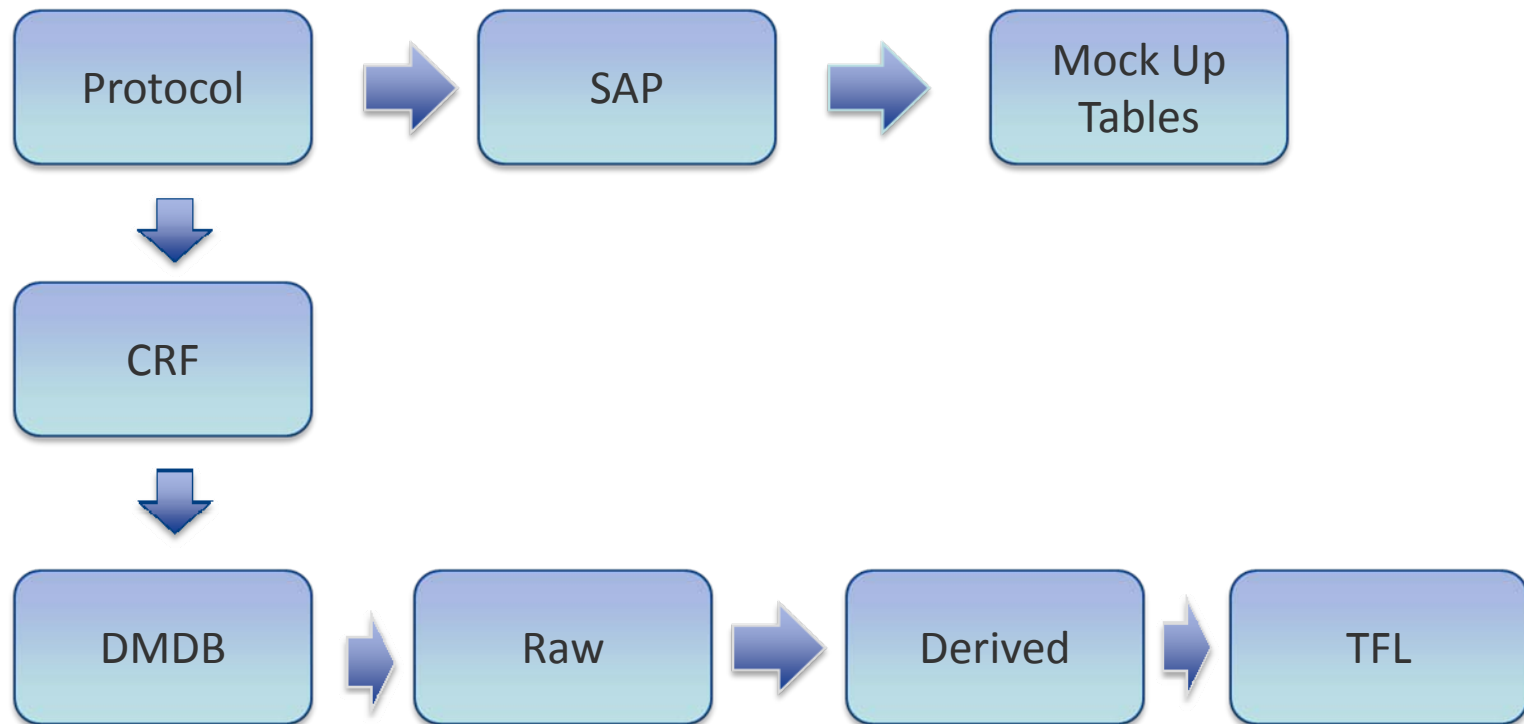
Metadata and ADaM

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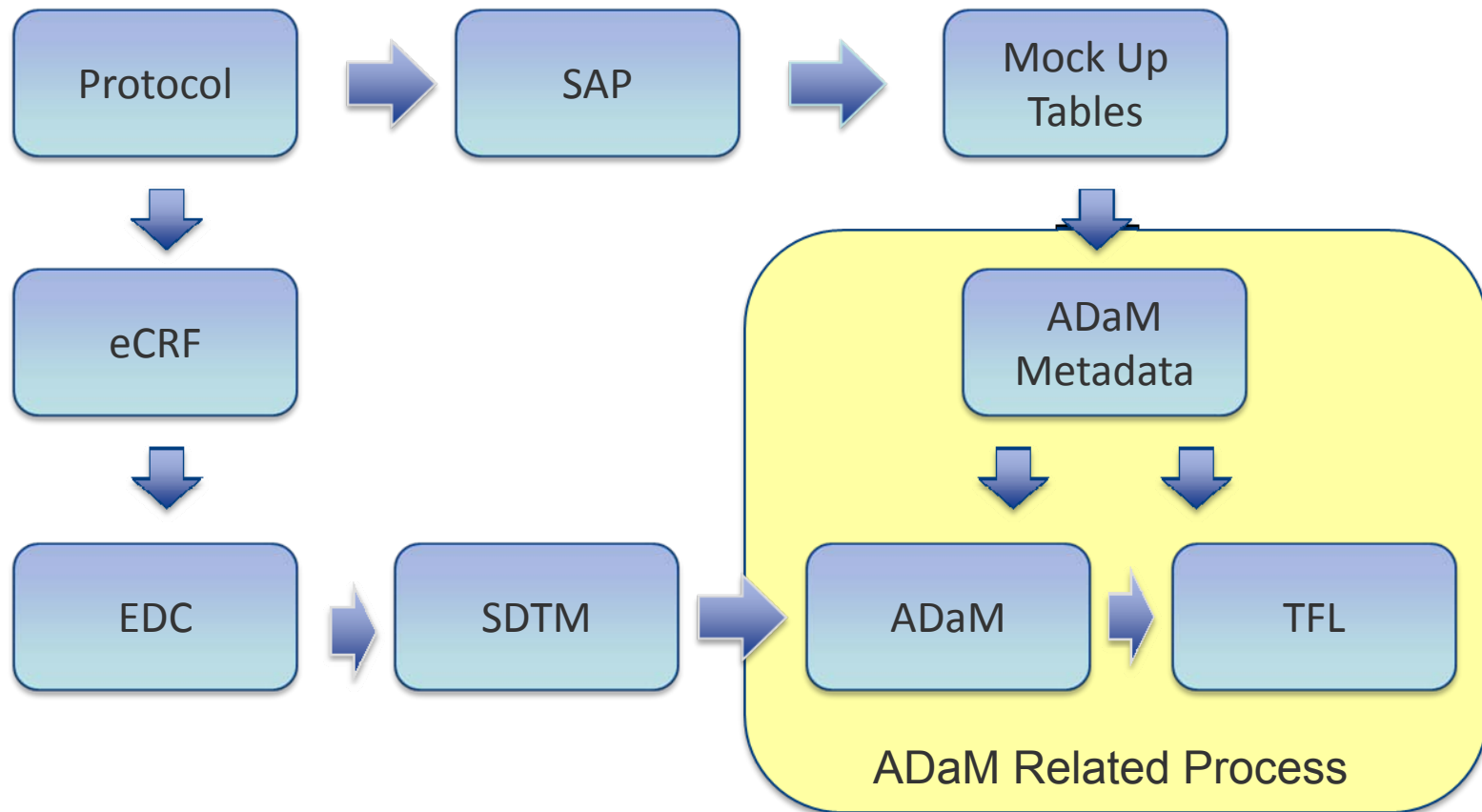
- Introduction of ADaM Metadata
- Clinical Trial Process
- Examples of how to create Metadata
- Goal of ADaM Metadata
- Pros and Cons
- Conclusion
- Questions & Answers

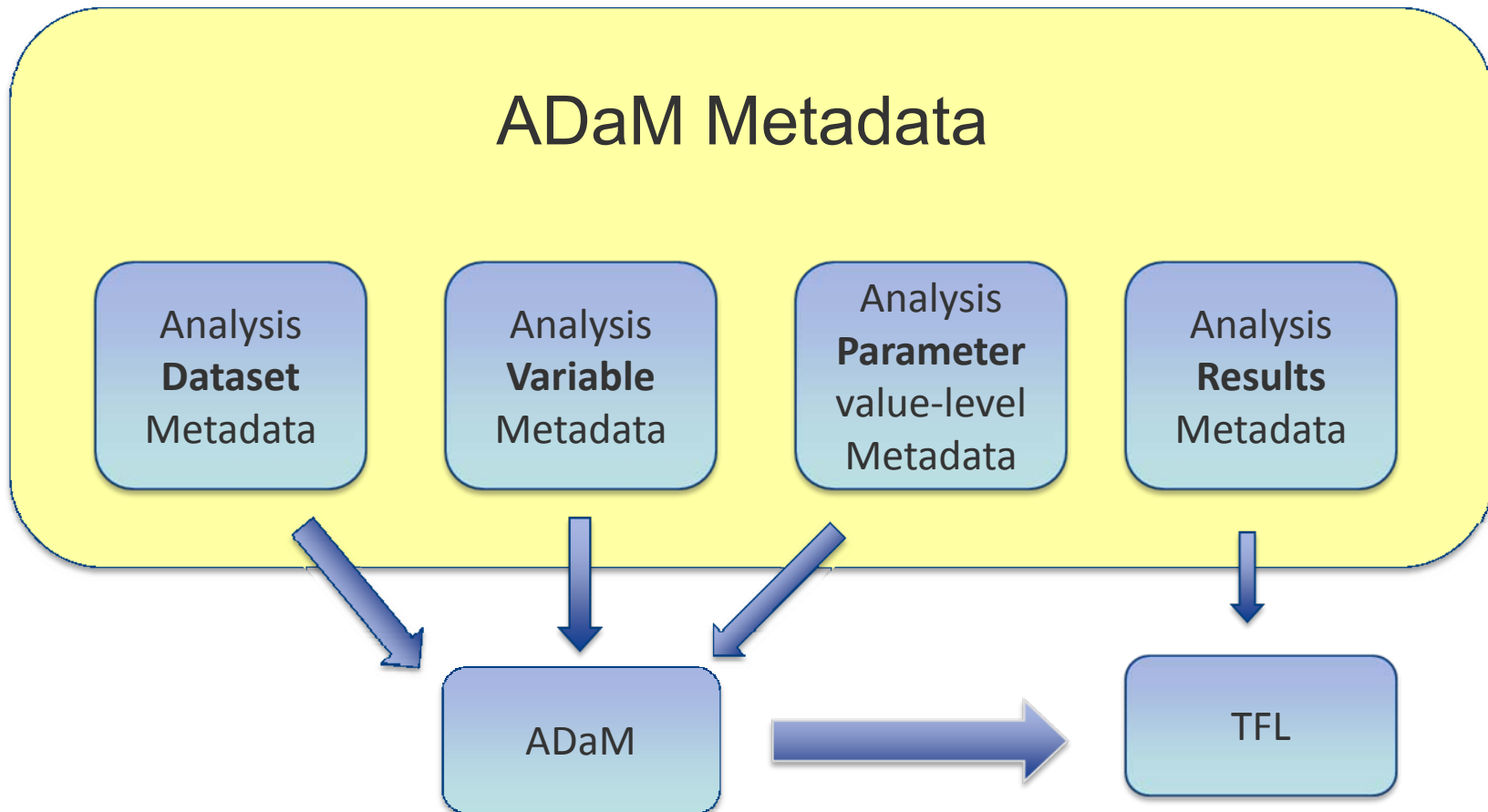
- Definition – Information of ADaM(Analysis Data Model) datasets
- Types
 - Analysis **Dataset** Metadata
 - Analysis **Variable** Metadata
 - Analysis **Parameter** Value-Level Metadata
 - Analysis **Results** Metadata

Normal Clinical Trial Process



CDISC Clinical Trial Process





Time to Event Example 1 – Mock Up table

Table 14.2.1

Time to Death by Treatment

PARAM = 'Time to Death (Days)', TRTP

Analysis Population: Intent to Treat

ITTFL='Y'

	Drug 1	Drug 2	p-value
N	xxx	xxx	
Censored Observation	xxx	xxx	
Median	xx	xx	x.xx
Q1, Q3	xx, xx	xx, xx	

AVAL(Days to Event), CNSR(Censor information)

PROC LIFETEST DATA=ADTTEOS;

WHERE PARAM="Time to Death (Days)" and ITTFL="Y";

TIME AVAL*CNSR(1);

STRATA TRTP;

RUN;

Time to Event Analysis Dataset Metadata

Dataset Name	Dataset Description	Dataset Location	Dataset Structure	Key Variables of Dataset	Class of Dataset	Documentation
ADTTEOS	Overall Survival Time to Event Analysis Dataset	<u>adtteos.xpt</u>	One record per subject per parameter	STUDYID, USUBJID, PARAM	BDS	adtteos.sas

Dataset Name	Parameter Identifier	Variable Name	Variable Label	Variable Type	Display Format	Codelist / Controlled Terms	Source / Derivation
ADTTEOS	*ALL*	USUBJID	Unique Subject Identifier	Char	\$20		ADSL.USUBJID
ADTTEOS	*ALL*	ITTFL	Intent-To-Treat Population Flag	Char	\$1	Y, null	ADSL.ITTFL
ADTTEOS	*ALL*	TRTP	Planned Treatment	Char	\$40	Drug 1, Drug 2	ADSL.TRT01P
ADTTEOS	*ALL*	TRTPN	Planned Treatment (N)	Num	8	1 = Drug 1, 2 = Drug 2	ADSL.TRT01PN
ADTTEOS	PARAMCD	PARAM	Parameter	Char	\$50	Time to Death (Days)	
ADTTEOS	PARAMCD	PARAMCD	Parameter Code	Char	\$8	DEATH	

Dataset Name	Parameter Identifier	Variable Name	Variable Label	Variable Type	Display Format	Codelist / Controlled Terms	Source / Derivation
ADTTEOS	*ALL*	AVAL	Analysis Value	Num	8		ADT – STARTDT + 1
ADTTEOS	*ALL*	STARTDT	Time to Event Origin Date for Subject	Num	YYYYMM DD10.		ADSL.RANDDT
ADTTEOS	*ALL*	ADT	Analysis Date	Num	YYYYMM DD10.		SAS Date of DS.DSDTC
ADTTEOS	*ALL*	CNSR	Censor	Num	8	0, 1	0 for 'DEATH', 1 for any other study completion
ADTTEOS	*ALL*	EVNTDESC	Event or Censoring Description	Char	\$40	DEATH, COMPLETED THE STUDY, LOST TO FOLLOW-UP, AE	DS.DSDECOD

Time to Event Analysis Results

Metadata

Metadata Field	Metadata
DISPLAY IDENTIFIER	<u>Table 14.2.1</u>
DISPLAY NAME	Time to Death by Treatment, Analysis Population: Intent to Treat
RESULT IDENTIFIER	Time to Death (Days)
PARAM	Time to Death (Days)
PARAMCD	DEATH
ANALYSIS VARIABLE	AVAL
REASON	Primary efficacy analysis
DATASET	<u>ADTTEOS</u>
SELECTION CRITERIA	ITTFL="Y" and PARAM = 'Time to Death (Days)'
DOCUMENTATION	See SAP Section XX for details. Program: t_14.2.1_DEATH.sas
PROGRAMMING STATEMENTS	<pre>PROC LIFETEST DATA= ADTTEOS; WHERE ITTFL='Y' and PARAM = "Time to Death (Days)"; TIME AVAL*CNSR(1); STRATA TRTP; RUN;</pre>

Time to Event Example 2 – Mock Up table

Table 14.2.2

Time to Progression Free Survival : Cox Proportional Hazard Model

PARAM = 'Time to Progression Free Survival (Days)', TRTP

Analysis Population: Intent to Treat

ITTFL='Y'

	Drug 1	Drug 2	p-value
N	xxx	xxx	
Censored Observation	xxx	xxx	
Median	xx	xx	x.xx
Q1, Q3	xx, xx	xx, xx	

AVAL(Days to Event), CNSR(Censor information)

PROC PHREG DATA=ADTTEOS;

WHERE PARAM="Time to Progression Free Survival (Days)" and ITTFL="Y";

MODEL AVAL*CNSR(1) = TRTP **AGE SEX** ;

RUN;

Time to Event Analysis Variable Metadata including Analysis Parameter Value-Level Metadata (1)

Dataset Name	Parameter Identifier	Variable Name	Variable Label	Variable Type	Display Format	Codelist / Controlled Terms	Source / Derivation
ADTTEOS	*ALL*	USUBJID	Unique Subject Identifier	Char	\$20		ADSL.USUBJID
ADTTEOS	*ALL*	AGE	Age	Num	8		ADSL.AGE
ADTTEOS	*ALL*	SEX	Sex	Char	\$1		ADSL.SEX
ADTTEOS	*ALL*	ITTFL	Intent-To-Treat Population Flag	Char	\$1	Y, null	ADSL.ITTFL
ADTTEOS	*ALL*	TRTP	Planned Treatment	Char	\$40	Drug 1, Drug 2	ADSL.TRT01P
ADTTEOS	*ALL*	TRTPN	Planned Treatment (N)	Num	8	1 = Drug 1, 2 = Drug 2	ADSL.TRT01PN
ADTTEOS	PARAMCD	PARAM	Parameter	Char	\$50	Time to Death (Days) Time to Progression Free Survival (Days)	
ADTTEOS	PARAMCD	PARAMCD	Parameter Code	Char	\$8	DEATH PFS	

Dataset Name	Parameter Identifier	Variable Name	Variable Label	Variable Type	Display Format	Codelist / Controlled Terms	Source / Derivation
ADTTEOS	*ALL*	AVAL	Analysis Value	Num	8		ADT – STARTDT + 1
ADTTEOS	*ALL*	STARTDT	Time to Event Origin Date for Subject	Num	YYYYMM DD10.		ADSL.RANDDT
ADTTEOS	*ALL*	ADT	Analysis Date	Num	YYYYMM DD10.		SAS Date of DS.DSDTC
ADTTEOS	DEATH	CNSR	Censor	Num	8	0, 1	0 for 'DEATH', 1 for any other study completion
ADTTEOS	PFS	CNSR	Censor	Num	8	0, 1	0 for 'DEATH' and 'PFS', 1 for any other study completion
ADTTEOS	*ALL*	EVNTDESC	Event or Censoring Description	Char	\$40	DEATH, COMPLETED THE STUDY, LOST TO FOLLOW-UP, AE, PFS	DS.DSDECOD

Time to Event Analysis Results

Metadata

Metadata Field	Metadata
DISPLAY IDENTIFIER	<u>Table 14.2.2</u>
DISPLAY NAME	Time to Progression Free Survival : Cox Proportional Hazard Model
RESULT IDENTIFIER	Time to Progression Free Survival (Days)
PARAM	Time to Progression Free Survival (Days)
PARAMCD	PFS
ANALYSIS VARIABLE	AVAL
REASON	Secondary efficacy analysis
DATASET	<u>ADTTEOS</u>
SELECTION CRITERIA	ITTFL="Y" and PARAM="Time to Progression Free Survival (Days)'
DOCUMENTATION	See SAP Section XX for details. Program: t_14.2.2_PFS.sas
PROGRAMMING STATEMENTS	<pre>PROC PHREG DATA= ADTTEOS; WHERE ITTFL='Y' and PARAM = "Time to Progression Free Survival (Days)'; MODEL AVAL*CNSR(1) = TRTP AGE SEX; RUN;</pre>

Summary of Examples

Mock Up Tables		14.2.1	14.2.2
Metadata	Dataset	ADTTEOS	
	Variables	USUBJID	
		ITTFL	
		TRTP, TRTPN	
		PARAM, PARAMCD	
		AVAL	
		STARTDT, ADT	
		CNSR	
		EVNTDESC	
			AGE
			SEX
	Parameter	DEATH	PFS
	Results	Time to Death	Time to PFS

- Serve as Spec and Define
 - Spec : provide the programmers how ADaM and some TFL can be created
 - Define : datasets information for sponsors
- Central document for all programmers and statisticians

Goal of Metadata (2)

- Minimize the communication traffic in virtual office setting
 - Philadelphia Office
 - Boston Office
 - Pune Office
 - Remote Programming
- Reconciliation between ADaM datasets and Metadata
 - use macros to check whether ADaM datasets follow Metadata.

- Who will prepare and maintain the metadata
 - CDISC expert(SDTM, ADaM and so on)
 - Programmer Lead
 - Statistician
- The initial investment on resource and time at the early stage of the study
- Two many metadata?

- Consistency in ADaM datasets
 - Label
 - Name
 - Format
 - # of variables
- Help the inexperienced personnel – ADaM is new
- The central document between developers and validators – especially for the virtual office setting
- Helps the programmers on efficacy analysis.

- Better estimate on the number of ADaM datasets – help the planning and resourcing.
- Review on Mock Up tables and SAP

- The concept of Metadata is “Plan your work and work your plan”
- ADaM Metadata is ongoing until all are done.

Questions?

