

Ensuring Quality of a CDISC based e-Submission

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Statistical Programming
Accovion

Outline

✓ Process

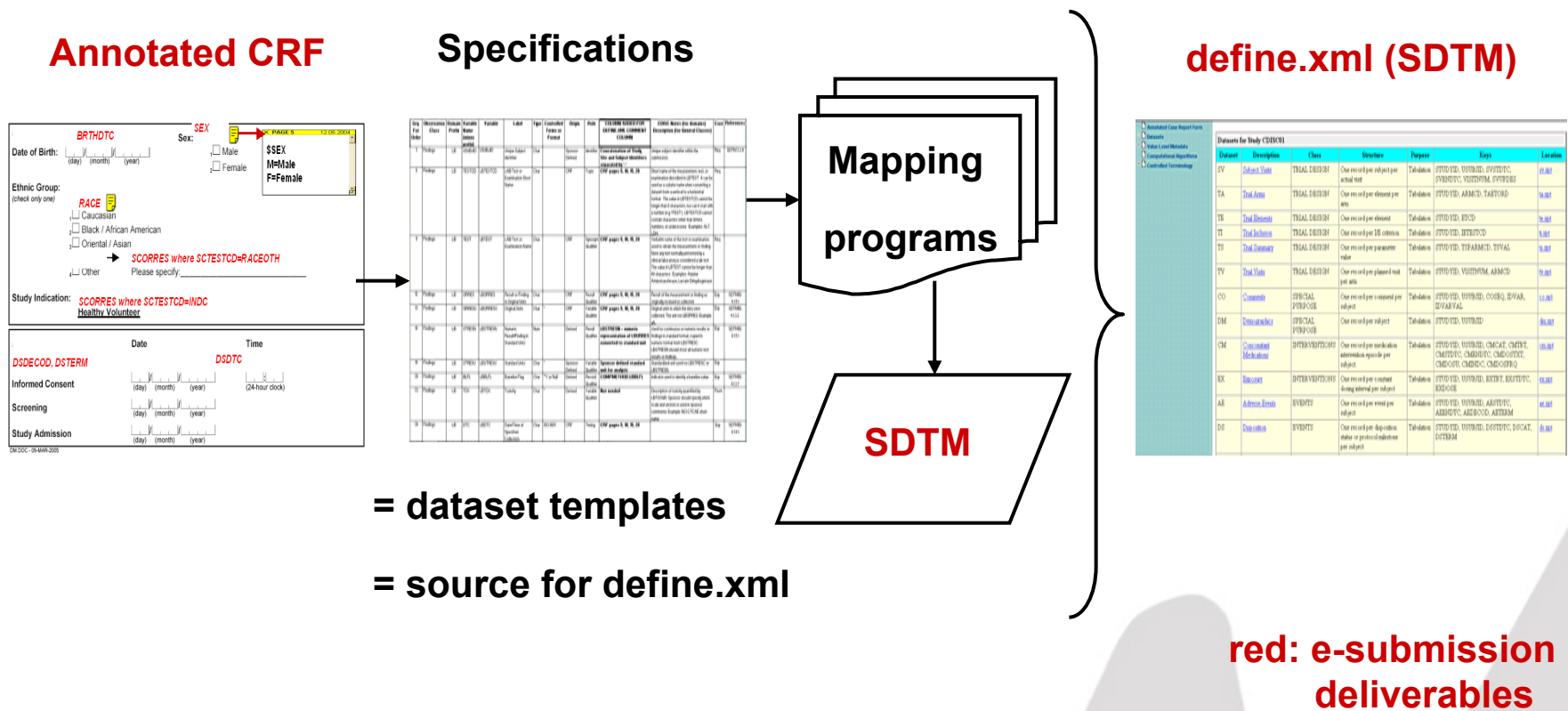
- Legacy data conversion
- From (e)CRF design to e-submission deliverables

✓ Ensuring quality

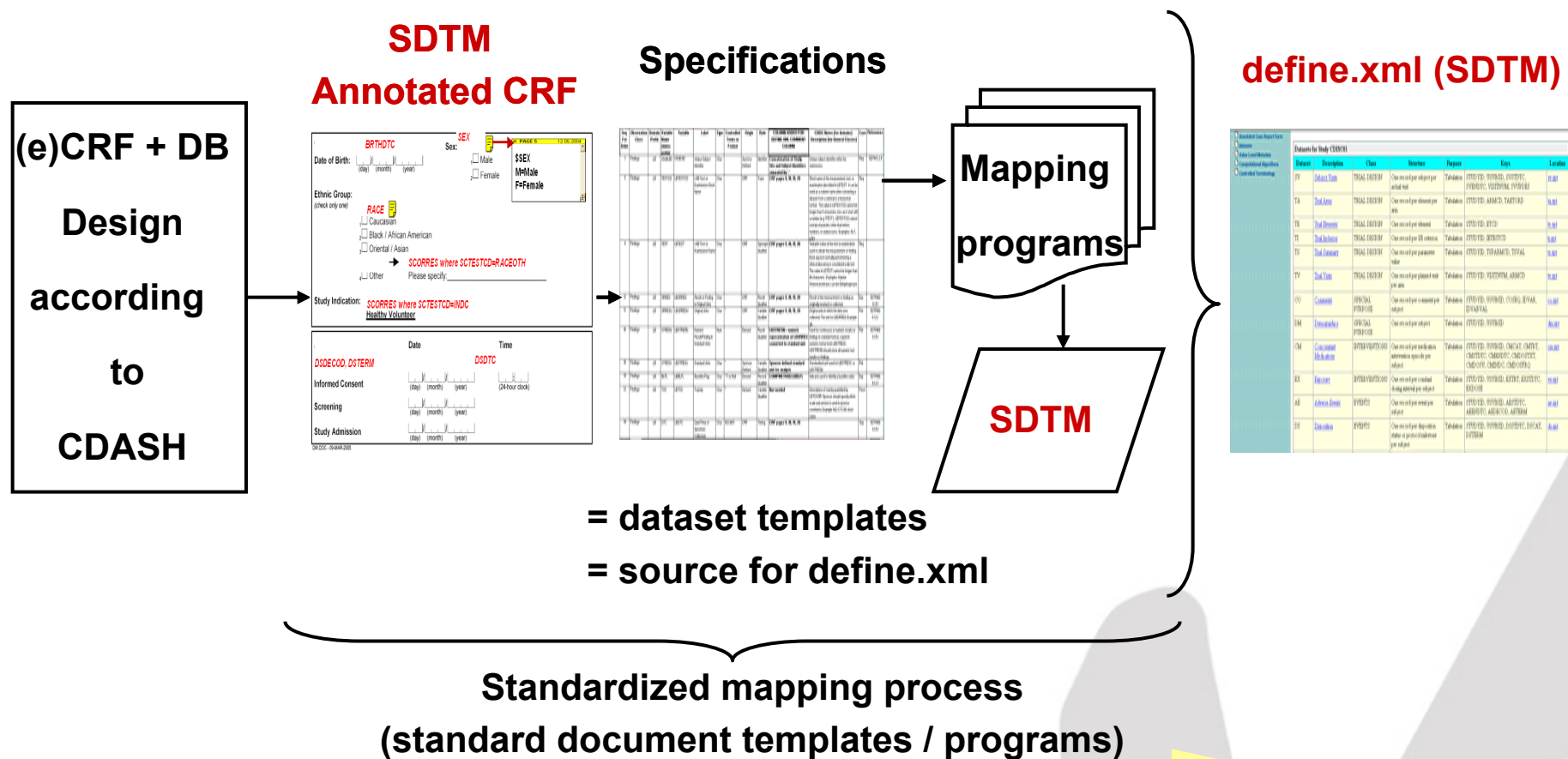
- Quality control activities
- Process design

✓ Summary and conclusions

Process Flow – Legacy Data Conversion



From (e)CRF Design to e-Submission



Communication

Process Flow – ADaM

ADaM Specifications →

- Analysis datasets

Case No.	Related Name	Variable Name	Variable Unit	Unit Type	Length	Comments
1	AB01	AB01A	AB01A	mm	20	Source: Computational Model
2	AB01	AB01B	AB01B	mm	20	Source: Computational Model
3	AB01	AB01C	AB01C	mm	20	Source: Computational Model
4	AB01	AB01D	AB01D	mm	20	Source: Computational Model
5	AB01	AB01E	AB01E	mm	20	Source: Computational Model
6	AB01	AB01F	AB01F	mm	20	Source: Computational Model
7	AB01	AB01G	AB01G	mm	20	Source: Computational Model
8	AB01	AB01H	AB01H	mm	20	Source: Computational Model
9	AB01	AB01I	AB01I	mm	20	Source: Computational Model
10	AB01	AB01J	AB01J	mm	20	Source: Computational Model
11	AB01	AB01K	AB01K	mm	20	Source: Computational Model
12	AB01	AB01L	AB01L	mm	20	Source: Computational Model
13	AB01	AB01M	AB01M	mm	20	Source: Computational Model
14	AB01	AB01N	AB01N	mm	20	Source: Computational Model
15	AB01	AB01O	AB01O	mm	20	Source: Computational Model
16	AB01	AB01P	AB01P	mm	20	Source: Computational Model
17	AB01	AB01Q	AB01Q	mm	20	Source: Computational Model
18	AB01	AB01R	AB01R	mm	20	Source: Computational Model
19	AB01	AB01S	AB01S	mm	20	Source: Computational Model
20	AB01	AB01T	AB01T	mm	20	Source: Computational Model
21	AB01	AB01U	AB01U	mm	20	Source: Computational Model
22	AB01	AB01V	AB01V	mm	20	Source: Computational Model
23	AB01	AB01W	AB01W	mm	20	Source: Computational Model
24	AB01	AB01X	AB01X	mm	20	Source: Computational Model
25	AB01	AB01Y	AB01Y	mm	20	Source: Computational Model
26	AB01	AB01Z	AB01Z	mm	20	Source: Computational Model
27	AB01	AB01AA	AB01AA	mm	20	Source: Computational Model
28	AB01	AB01AB	AB01AB	mm	20	Source: Computational Model
29	AB01	AB01AC	AB01AC	mm	20	Source: Computational Model
30	AB01	AB01AD	AB01AD	mm	20	Source: Computational Model
31	AB01	AB01AE	AB01AE	mm	20	Source: Computational Model
32	AB01	AB01AF	AB01AF	mm	20	Source: Computational Model
33	AB01	AB01AG	AB01AG	mm	20	Source: Computational Model
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35	AB01	AB01AI	AB01AI	mm	20	Source: Computational Model
36	AB01	AB01AJ	AB01AJ	mm	20	Source: Computational Model
37	AB01	AB01AK	AB01AK	mm	20	Source: Computational Model
38	AB01	AB01AL	AB01AL	mm	20	Source: Computational Model
39	AB01	AB01AM	AB01AM	mm	20	Source: Computational Model
40	AB01	AB01AN	AB01AN	mm	20	Source: Computational Model
41	AB01	AB01AO	AB01AO	mm	20	Source: Computational Model
42	AB01	AB01AP	AB01AP	mm	20	Source: Computational Model
43	AB01	AB01AQ	AB01AQ	mm	20	Source: Computational Model
44	AB01	AB01AR	AB01AR	mm	20	Source: Computational Model
45	AB01	AB01AS	AB01AS	mm	20	Source: Computational Model
46	AB01	AB01AT	AB01AT	mm	20	Source: Computational Model
47	AB01	AB01AU	AB01AU	mm	20	Source: Computational Model
48	AB01	AB01AV	AB01AV	mm	20	Source: Computational Model
49	AB01	AB01AW	AB01AW	mm	20	Source: Computational Model
50	AB01	AB01AX	AB01AX	mm	20	Source: Computational Model
51	AB01	AB01AY	AB01AY	mm	20	Source: Computational Model
52	AB01	AB01AZ	AB01AZ	mm	20	Source: Computational Model
53	AB01	AB01BA	AB01BA	mm	20	Source: Computational Model
54	AB01	AB01BB	AB01BB	mm	20	Source: Computational Model
55	AB01	AB01BC	AB01BC	mm	20	Source: Computational Model
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57	AB01	AB01BE	AB01BE	mm	20	Source: Computational Model
58	AB01	AB01BF	AB01BF	mm	20	Source: Computational Model
59	AB01	AB01BG	AB01BG	mm	20	Source: Computational Model
60	AB01	AB01BH	AB01BH	mm	20	Source: Computational Model
61	AB01	AB01BI	AB01BI	mm	20	Source: Computational Model
62	AB01	AB01BJ	AB01BJ	mm	20	Source: Computational Model
63	AB01	AB01BK	AB01BK	mm	20	Source: Computational Model
64	AB01	AB01BL	AB01BL	mm	20	Source: Computational Model
65	AB01	AB01BM	AB01BM	mm	20	Source: Computational Model
66	AB01	AB01BN	AB01BN	mm	20	Source: Computational Model
67	AB01	AB01BO	AB01BO	mm	20	Source: Computational Model
68	AB01	AB01BP	AB01BP	mm	20	Source: Computational Model
69	AB01	AB01BQ	AB01BQ	mm	20	Source: Computational Model
70	AB01	AB01BR	AB01BR	mm	20	Source: Computational Model
71	AB01	AB01BS	AB01BS	mm	20	Source: Computational Model
72	AB01	AB01BT	AB01BT	mm	20	Source: Computational Model
73	AB01	AB01BU	AB01BU	mm	20	Source: Computational Model
74	AB01	AB01BV	AB01BV	mm	20	Source: Computational Model
75	AB01	AB01BW	AB01BW	mm	20	Source: Computational Model
76	AB01	AB01BX	AB01BX	mm	20	Source: Computational Model
77	AB01	AB01BY	AB01BY	mm	20	Source: Computational Model
78	AB01	AB01BZ	AB01BZ	mm	20	Source: Computational Model
79	AB01	AB01CA	AB01CA	mm	20	Source: Computational Model
80	AB01	AB01CB	AB01CB	mm	20	Source: Computational Model
81	AB01	AB01CC	AB01CC	mm	20	Source: Computational Model
82	AB01	AB01CD	AB01CD	mm	20	Source: Computational Model
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88	AB01	AB01CJ	AB01CJ	mm	20	Source: Computational Model
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92	AB01	AB01CN	AB01CN	mm	20	Source: Computational Model
93	AB01	AB01CO	AB01CO	mm	20	Source: Computational Model
94	AB01	AB01CP	AB01CP	mm	20	Source: Computational Model
95	AB01	AB01CQ	AB01CQ	mm	20	Source: Computational Model
96	AB01	AB01CR	AB01CR	mm	20	Source: Computational Model
97	AB01	AB01CS	AB01CS	mm	20	Source: Computational Model
98	AB01	AB01CT	AB01CT	mm	20	Source: Computational Model
99	AB01	AB01CU	AB01CU	mm	20	Source: Computational Model
100	AB01	AB01CV	AB01CV	mm	20	Source: Computational Model
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103	AB01	AB01CY	AB01CY	mm	20	Source: Computational Model
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105	AB01	AB01DA	AB01DA	mm	20	Source: Computational Model
106	AB01	AB01DB	AB01DB	mm	20	Source: Computational Model
107	AB01	AB01DC	AB01DC	mm	20	Source: Computational Model
108	AB01	AB01DD	AB01DD	mm	20	Source: Computational Model
109	AB01	AB01DE	AB01DE	mm	20	Source: Computational Model
110	AB01	AB01DF	AB01DF	mm	20	Source: Computational Model
111	AB01	AB01DG	AB01DG	mm	20	Source: Computational Model
112	AB01	AB01DH	AB01DH	mm	20	Source: Computational Model
113	AB01	AB01DI	AB01DI	mm	20	Source: Computational Model
114	AB01	AB01DJ	AB01DJ	mm	20	Source: Computational Model
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117	AB01	AB01DM	AB01DM	mm	20	Source: Computational Model
118	AB01	AB01DN	AB01DN	mm	20	Source: Computational Model
119	AB01	AB01DO	AB01DO	mm	20	Source: Computational Model
120	AB01	AB01DP	AB01DP	mm	20	Source: Computational Model
121	AB01	AB01DQ	AB01DQ	mm	20	Source: Computational Model
122	AB01	AB01DR	AB01DR	mm	20	Source: Computational Model
123	AB01	AB01DS	AB01DS	mm	20	Source: Computational Model
124	AB01	AB01DT	AB01DT	mm	20	Source: Computational Model
125	AB01	AB01DU	AB01DU	mm	20	Source: Computational Model
126	AB01	AB01DV	AB01DV	mm	20	Source: Computational Model
127	AB01	AB01DW	AB01DW	mm	20	Source: Computational Model
128	AB01	AB01DX	AB01DX	mm	20	Source: Computational Model
129	AB01	AB01DY	AB01DY	mm	20	Source: Computational Model
130	AB01	AB01DZ	AB01DZ	mm	20	Source: Computational Model
131	AB01	AB01EA	AB01EA	mm	20	Source: Computational Model
132	AB01	AB01EB	AB01EB	mm	20	Source: Computational Model
133	AB01	AB01EC	AB01EC	mm	20	Source: Computational Model
134	AB01	AB01ED	AB01ED	mm	20	Source: Computational Model
135	AB01	AB01EE	AB01EE	mm	20	Source: Computational Model
136	AB01	AB01EF	AB01EF	mm	20	Source: Computational Model
137	AB01	AB01EG	AB01EG	mm	20	Source: Computational Model
138	AB01	AB01EH	AB01EH	mm	20	Source: Computational Model
139	AB01	AB01EI	AB01EI	mm	20	Source: Computational Model
140	AB01	AB01EJ	AB01EJ	mm	20	Source: Computational Model
141	AB01	AB01EK	AB01EK	mm	20	Source: Computational Model
142	AB01	AB01EL	AB01EL	mm	20	Source: Computational Model
143	AB01	AB01EM	AB01EM	mm	20	Source: Computational Model
144	AB01	AB01EN	AB01EN	mm	20	Source: Computational Model
145	AB01	AB01EO	AB01EO	mm	20	Source: Computational Model
146	AB01	AB01EP	AB01EP	mm	20	Source: Computational Model
147	AB01	AB01EQ	AB01EQ	mm	20	Source: Computational Model
148	AB01	AB01ER	AB01ER	mm	20	Source: Computational Model
149	AB01	AB01ES	AB01ES	mm	20	Source: Computational Model
150	AB01	AB01ET	AB01ET	mm	20	Source: Computational Model
151	AB01	AB01EU	AB01EU	mm	20	Source: Computational Model
152	AB01	AB01EV	AB01EV	mm	20	Source: Computational Model
153	AB01	AB01EW	AB01EW	mm	20	Source: Computational Model
154	AB01	AB01EX	AB01EX	mm	20	Source: Computational Model
155	AB01	AB01EY	AB01EY	mm	20	Source: Computational Model
156	AB01	AB01EZ	AB01EZ	mm	20	Source: Computational Model
157	AB01	AB01FA	AB01FA	mm	20	Source: Computational Model
158	AB01	AB01FB	AB01FB	mm	20	Source: Computational Model
159	AB01	AB01FC	AB01FC	mm	20	Source: Computational Model
160	AB01	AB01FD	AB01FD	mm	20	Source: Computational Model
161	AB01	AB01FE	AB01FE	mm	20	Source: Computational Model
162	AB01	AB01FF	AB01FF	mm	20	Source: Computational Model
163	AB01	AB01FG	AB01FG	mm	20	Source: Computational Model
164	AB01	AB01FH	AB01FH	mm	20	Source: Computational Model
165	AB01	AB01FI	AB01FI	mm	20	Source: Computational Model
166	AB01	AB01FJ	AB01FJ	mm	20	Source: Computational Model
167	AB01	AB01FK	AB01FK	mm	20	Source: Computational Model
168	AB01	AB01FL	AB01FL	mm	20	Source: Computational Model
169	AB01	AB01FM	AB01FM	mm	20	Source: Computational Model
170	AB01	AB01FN	AB01FN	mm	20	Source: Computational Model
171	AB01	AB01FO	AB01FO	mm	20	Source: Computational Model
172	AB01	AB01FP	AB01FP	mm	20	Source: Computational Model
173	AB01	AB01FQ	AB01FQ	mm	20	Source: Computational Model
174	AB01	AB01FR	AB01FR	mm	20	Source: Computational Model
175	AB01	AB01FS	AB01FS	mm	20	Source: Computational Model
176	AB01	AB01FT	AB01FT	mm	20	Source: Computational Model
177	AB01	AB01FU	AB01FU	mm	20	Source: Computational Model
178	AB01	AB01FV	AB01FV	mm	20	Source: Computational Model
179	AB01	AB01FW	AB01FW	mm	20	Source: Computational Model
180	AB01	AB01FX	AB01FX	mm	20	Source: Computational Model
181	AB01	AB01FY	AB01FY	mm	20	Source: Computational Model
182	AB01	AB01FZ	AB01FZ	mm	20	Source: Computational Model
183	AB01	AB01GA	AB01GA	mm	20	Source: Computational Model
184	AB01	AB01GB	AB01GB	mm	20	Source: Computational Model
185	AB01	AB01GC	AB01GC	mm	20	Source: Computational Model
186	AB01	AB01GD	AB01GD	mm	20	Source: Computational Model
187	AB01	AB01GE	AB01GE	mm	20	Source: Computational Model
188	AB01	AB01GF	AB01GF	mm	20	Source: Computational Model
189	AB01	AB01GG	AB01GG	mm	20	Source: Computational Model
190	AB01	AB01GH	AB01GH	mm	20	Source: Computational Model
191	AB01	AB01GI	AB01GI	mm	20	Source: Computational Model
192	AB01	AB01GJ	AB01GJ	mm	20	Source: Computational Model
193	AB01	AB01GK	AB01GK	mm	20	Source: Computational Model
194	AB01	AB01GL	AB01GL	mm	20	Source: Computational Model
195	AB01	AB01GM	AB01GM	mm	20	Source: Computational Model
196	AB01	AB01GN	AB01GN	mm	20	Source: Computational Model
197	AB01	AB01GO	AB01GO	mm	20	Source: Computational Model
198	AB01	AB01GP	AB01GP	mm	20	Source: Computational Model
199	AB01	AB01GQ	AB01GQ	mm	20	Source: Computational Model
200	AB01	AB01GR	AB01GR	mm	20	Source: Computational Model
201	AB01	AB01GS	AB01GS	mm	20	Source: Computational Model
202	AB01	AB01GT	AB01GT	mm	20	Source: Computational Model
203	AB01	AB01GU	AB01GU	mm	20	Source: Computational Model
204	AB01	AB01GV	AB01GV	mm	20	Source: Computational Model
205	AB01	AB01GW	AB01GW	mm	20	Source: Computational Model
206	AB01	AB01GX	AB01GX	mm	20	Source: Computational Model
207	AB01	AB01GY	AB01GY	mm	20</	

= dataset templates

- Analysis results

[illegible]

source for define.xml

Datasets creation programs

ADaM

Results creation programs

Analysis results (TLGs)

define.xml (ADaM)



SDTM

SAP

Communication

Communication

✓ Who

- Sponsor - FDA
- Cross-functional project team

✓ What

- Requirements (e.g., all/specific data, programs)
- Sponsor specific guidelines (e.g., mapping scenarios, terminology)

✓ When

- From project set-up to project completion

✓ Where

- Track decisions in **1** shared document
 - Transparency, aid in quality control
- define.xml

✓ Why

- **Standardized documentation of data flow**
- **CRF => analysis results via standardized metadata**

Annotated CRF

✓ Requirements

- eCTD Portable Document Format Specifications/
CDISC Draft Metadata Submission Guidelines
 - SDTM content
 - Annotation legend (standard layout)
 - Hyperlinks from repeat pages to annotated pages ([see page 5](#))
 - Bookmarks
 - Named destinations
- **Prepare reference aCRF**

✓ QC Steps

- Verify requirements
- Tool: Checklist
- Final check in eCTD folder structure

The screenshot shows a form with the following fields and annotations:

- Date of Birth:** Labeled with **BRTHDTC** in red. The field has sub-labels (day), (month), and (year).
- Sex:** Labeled with **SEX** in red. It includes radio buttons for Male and Female, and a separate section for **\$SEX** with options M=Male and F=Female.
- Ethnic Group:** Labeled with **RACE** in red. It includes radio buttons for Caucasian, Black / African American, Oriental / Asian, and Other. An annotation **SCORRES where SCTESTCD=RACEOTH** points to the 'Other' option.
- Study Indication:** Labeled with **SCORRES where SCTESTCD=INDC** in red. The field contains the text 'Healthy Volunteer'.

At the bottom of the form, there are two more sections:

- DSDECOD, DSTERM:** Labeled with **DSDECOD, DSTERM** in red. It includes a date field (day, month, year) and a time field (24-hour clock).
- DSDECOD, DSTERM:** Labeled with **DSDECOD, DSTERM** in red. It includes a date field (day, month, year) and a time field (24-hour clock).

- **Format**

- Facilitate automated information usage (e.g. EXCEL)
 - Dataset templates
 - Input for define.xml

- **Contents**

- List of SDTM domains
- Domain specifications based on SDTM IG domain tables
 - Start with Trial Design
 - Mapping from legacy format to SDTM (exclude from define.xml)
- Controlled Terminology

- **Prepare reference specifications**

✓ QC Steps

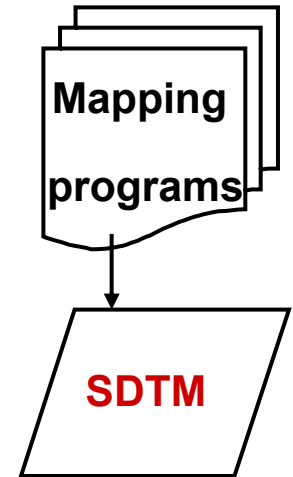
- Verify requirements
- Check consistency with Annotated CRF
- Review and acceptance test by sponsor

File ID	Observation Class	Observed Date	Variable Name (after cleanup)	Variable	Label	Type	Controlled Term or Format	Origin	File	COLUMBIA DOCUMENT ID	COLUMBIA COMMENT	CCO: Notes (for Discussion) (Use General Class)	Case	References
3	Findings	LB	TESTED	WATER	Single Subject Identifier	Char		Spencer Defined	Identical		CONCENTRATION OF SILS AND SULPHID SULPHIDES	Single subject identifier with the concentration.	Req	Q254124
4	Findings	LB	TESTED	WATER	LAB Test or Examination Date Range	Char		Spencer Defined	Identical		CHP pages 1, 9, 10, 18	Short dates for the measurement, test, or examination described in L01TEST. It is used as a substitute name when covering a dissemination requirement in a historical format. The values in L01TESTC2 cannot be longer than 1 character, so can start with a number (e.g. 1987), L01TESTC2 cannot contain characters other than letters, numbers, or underscores. Examples: A.T., 1987.	Req	
9	Findings	LB	TEST	WATER	LAB Test or Examination Name	Char		Spencer Qualifier			CHP pages 1, 9, 10, 18	Verbosely name of the test or examination used for the measurement of findings. Name is used non-alphabetically in a chronologically numbered a list. The value L01TESTC3 cannot be longer than 40 characters. Examples: Aquatic Anticorrosion, Lead in Chlorophane	Req	
10	Findings	LB	OFFERS	DISPOSAL	Period of Finding in Original Unit	Char		CHF	Period Qualifier		CHP pages 1, 9, 10, 18	Period of the measurement or finding in original document is collected.	Req	Q254183
11	Findings	LB	OFFERS	DISPOSAL	Original Unit	Char		CHF	Variable Qualifier		CHP pages 1, 9, 10, 18	Original unit in which the data were collected. The values in L01OFFC3 Example only.	Req	Q254182
12	Findings	LB	UNITED	DISPOSAL	Remarks Period of Finding Standard Unit	Num		Default	Period Qualifier		UNITED STATES REPRESENTATION OF DISPOSAL submitted to standard unit	Verbal comments or remarks related to the findings in L01UNITEDC2. Example: Remarks found in L01UNITEDC2 UNITED STATES should state of analysis test results.	Req	Q254181
13	Findings	LB	UNITED	DISPOSAL	Standard Unit	Char		Spencer Defined	Identical		Sponsored defined standard unit for analysis	Standard unit used in L01UNITEDC2 UNITED STATES.	Req	
14	Findings	LB	RELI	LABEL	RemarksFlag	Char	"Y" or blank				COMMON TERMINOLOGY	Indicates whether directly a specific value is collected.	Req	Q254180
15	Findings	LB	TEST	WATER	Locality	Char		Default	Variable Qualifier		None needed	Descriptor of locality providing L01TESTC4. Spenser should specify which city and sometimes a specific sponsor such as Example: NECTACEA, short name.	Perm	
16	Findings	LB	OTIC	LOCOC	Operational Time	Char	ISO 8601	CHF	Timing		CHP pages 1, 9, 10, 18		Req	Q254179

SDTM Datasets

✓ Requirements

- Specifications
- SDTM standard
 - SDTM IG
 - Specifications for SDTM Validation Criteria V.1 (Draft)/ WebSDM™ edit checks
- Reproduction of study results



✓ QC Steps

- Validation of mapping programs
- Programmatic/manual check of SDTM validation criteria
 - Communicate/document exceptions (=> define.xml)
- (Reprogramming of key results based on SDTM)

Define.xml (SDTM)

✓ Requirements

- CRT-DDS (define.xml) V1.0
- CDISC Draft Metadata Submission Guidelines
- eCTD Validation Criteria
 - Location and modification of stylesheets
- Consistent with SDTM specifications & data

✓ QC Steps

- Schema Validation
- Correct Hyperlinks in eCTD structure
- **Process =>**
Built-in consistency with specifications & data

Dataset	Description	Class	Structure	Source	Keys	Location
PT	Subject Data	TRIAL DESIGN	One record per subject per actual visit	Tabulation	STUDYID, VISITNUM, STUDYID, VISITNUM, VISITNUM, VISITNUM	10.001
TA	Trial Arms	TRIAL DESIGN	One record per element per arm	Tabulation	STUDYID, ARMCD, TARTFID	10.001
TR	Trial Results	TRIAL DESIGN	One record per element	Tabulation	STUDYID, TRFID	10.001
TI	Trial Interventions	TRIAL DESIGN	One record per intervention	Tabulation	STUDYID, INTFID	10.001
TT	Trial Treatments	TRIAL DESIGN	One record per parameter value	Tabulation	STUDYID, TRFID, TVAL	10.001
TV	Trial Visits	TRIAL DESIGN	One record per planned visit per arm	Tabulation	STUDYID, VISITNUM, ARMCD	10.001
CO	Comments	SPECIAL PURPOSE	One record per comment per subject	Tabulation	STUDYID, VISITNUM, COSEQ, EVAL, EVALVAL	10.001
DM	Demographics	SPECIAL PURPOSE	One record per subject	Tabulation	STUDYID, VISITNUM	10.001
CM	Consent/Refusal	SPECIAL PURPOSE	One record per participant information response per subject	Tabulation	STUDYID, VISITNUM, CMSEQ, CMSEQ, CMSEQ, CMSEQ, CMSEQ, CMSEQ, CMSEQ, CMSEQ	10.001
EX	Exclusions	SPECIAL PURPOSE	One record per exclusion during interval per subject	Tabulation	STUDYID, VISITNUM, EXSEQ, EXSEQ, EXSEQ	10.001
AS	Adverse Events	EVENTS	One record per event per subject	Tabulation	STUDYID, VISITNUM, AESEQ, AESEQ, AESEQ, AESEQ, AESEQ, AESEQ, AESEQ, AESEQ, AESEQ, AESEQ	10.001
DS	Dispositions	EVENTS	One record per disposition status or protocol violation per subject	Tabulation	STUDYID, VISITNUM, DSSEQ, DSSEQ, DSSEQ, DSSEQ, DSSEQ, DSSEQ, DSSEQ, DSSEQ, DSSEQ, DSSEQ	10.001

ADaM specifications

✓ Requirements

- Draft ADaM V2.1, Draft ADaM IG V1.0
 - Datasets design
 - Metadata concept
- Approach similar to SDTM mapping
 - New metadata element: Analysis Results Metadata
 - Start with ADSL (Subject Level Analysis Dataset)
 - Derivations based on SDTM data

✓ QC Steps

- Review specifications
 - Check for correctness and comprehensibility
 - “One PROC away” approach

Analysis datasets

Seq No	Dataset Name	Source	Frequency	Analysis	Source Computational Method
1	ADSL	SDTM	Baseline	ADSL	ADSL
2	ADAE	SDTM	Baseline	ADAE	ADAE
3	ADAE	SDTM	Baseline	ADAE	ADAE
4	ADAE	SDTM	Baseline	ADAE	ADAE
5	ADAE	SDTM	Baseline	ADAE	ADAE
6	ADAE	SDTM	Baseline	ADAE	ADAE
7	ADAE	SDTM	Baseline	ADAE	ADAE
8	ADAE	SDTM	Baseline	ADAE	ADAE

Analysis results

Seq No	Dataset Name	Source	Frequency	Analysis	Source Computational Method
1	ADSL	SDTM	Baseline	ADSL	ADSL
2	ADAE	SDTM	Baseline	ADAE	ADAE
3	ADAE	SDTM	Baseline	ADAE	ADAE
4	ADAE	SDTM	Baseline	ADAE	ADAE
5	ADAE	SDTM	Baseline	ADAE	ADAE
6	ADAE	SDTM	Baseline	ADAE	ADAE
7	ADAE	SDTM	Baseline	ADAE	ADAE
8	ADAE	SDTM	Baseline	ADAE	ADAE

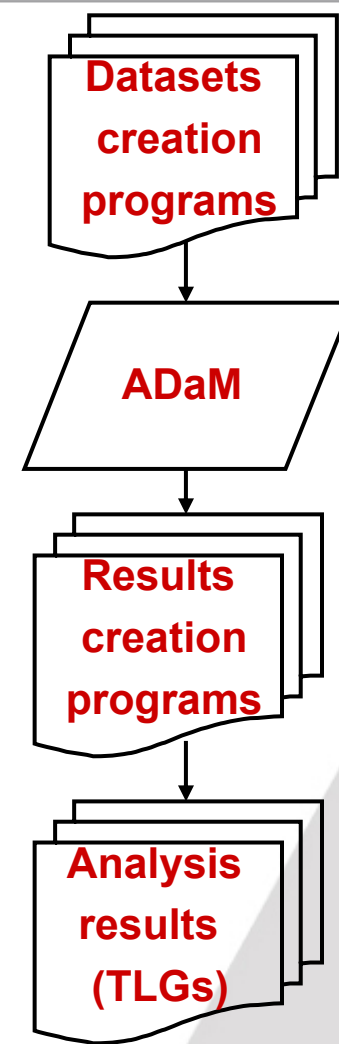
ADaM Datasets & Programs

✓ Requirements

- ADaM specifications
- Programs in ASCII + PDF format
 - eCTD requirements/validation criteria
 - File names
 - PDF version, document properties

✓ QC Steps

- Validation of programs
 - Contents consistent with specifications
 - “Review-friendly” programs
- (Reprogramming of key results based on ADaM)



- Draft ADaM V2.1, Draft ADaM IG V1.0

- eCTD Validation Criteria

- Supplemental data definitions (extension of metadata concept)

✓ QC Steps

- Schema Validation

- Correct Bookmarks & Hyperlinks in eCTD structure

- **Process =>**

Built-in consistency with specifications & data

PhUSE SDE, 06-May-2009

Communication to Reviewer - ADaM

Table 1: Summary of Subject Characteristics

Safety Population		
Subject Characteristic	Statistic	(N=80)
Gender		
MALE	n (%)	54 (67.5 %)
FEMALE	n (%)	26 (32.5 %)
Race		

SAS System Viewer - [adsl.xpt]

	Study Identifier (STUDYID)	Unique Subject Identifier (USUBJID)	Study Site Identifier (SITEID)	Subject Identifier for the Study (SUBJID)	Subject Number (SUBJIDN)	Subject Reference Start Date/Time (RFSTDTC)	Subject Reference End Date/Time (RFENDTC)	Age (AGE)	Sex (SEX)
1						2005-01-0	2005-02-2	25	M
2						2005-01-0	2005-01-1	24	M
3						2005-01-0	2005-02-2	18	F
4						2005-01-0	2005-02-2	19	F
5						2005-01-0	2005-02-1	20	F
6						2005-01-0	2005-02-2	48	F

Analysis Results Metadata (Summary) for Study

Table 1: Summary of Subject Characteristics

Analysis	Table 1: Summary of Subject Characteristics
Description	Frequency distribution of Gender and Race. Des Age at Day 1, Weight at Screening, Height at Sc
Reason	pre-specified in protocol
Data References	Subject Level (ADSL) [SAFFL = 'Y']
Documentation	See program slsum.pdf , See CSR 6.4

Subject Level Dataset (ADSL)

Variable	Label	Type	Length/Format	Controlled Terminology	Source/Computation Method	Comment
STUDYID	Study Identifier	text	12		DM.STUDYID	
USUBJID	Unique Subject Identifier	text	21		DM.USUBJID	
SITEID	Study Site Identifier	text	4		DM.SITEID	
SUBJID	Subject Identifier for the Study	text	8		DM.SUBJID	
SUBJIDN	Subject Number	integer	8		Derived from USUBJID: Convert last two characters from USUBJID into numeric	
RFSTDTC	Subject Reference Start Date/Time	text	20		DM.RFSTDTC	
RFENDTC	Subject Reference End Date/Time	text	20		DM.RFENDTC	
AGE	Age	integer	8		DM.AGE	
SEX	Sex	text	1	SEX	DM.SEX	

```
+ Program name      : slsum.sas
+ Description       : Program to create summary of subject characteristics
+ Type             : SAS program
+ Output type      : SAS table
+ Program responsible : <Name of programmer>
+ Date of creation  : 25-Nov-2008
+ Input files      : adam.adsl
+ Output files     : slsum.lst
+ System           : SAS 9.1 on HP-UX

Revision History :
[ # ] Date      Author      Description
-----
*/
/*
*****
***** Beginning of Code
*****
*/
OPTIONS FMTSEARCH=(cat.adam_fmt) nodate;
```

+	Annotated Case Report Form
+	SDTM define.xml
+	Supplemental Data Definitions
+	Analysis Results Metadata
+	Datasets
+	Value Level Metadata
+	Controlled Terminology

Communication to Reviewer - SDTM

Datasets for Study DEMO-STUDY						
Dataset	Description	Class	Structure	Purpose	Keys	Location
SE	Subject Elements	Trial Design	One record per actual element per subject	Tabulation	STUDYID, USUBJID, ETCDC, SESTDTC	se.xpt
SV	Subject Visits	Trial Design	One record per subject per actual visit	Tabulation	STUDYID, USUBJID, VISITNUM	sv.xpt
TA	Trial Arms	Trial Design	One record per planned element per arm	Tabulation	STUDYID, ARMCD, TAETORD	ta.xpt
TE	Trial Elements	Trial Design	One record per element	Tabulation	STUDYID, ETCDC	te.xpt
TI	Trial Inclusion/Exclusion Criteria	Trial Design	One record per I/E criterion	Tabulation	STUDYID, IETESTCD	ti.xpt
TS	Trial Summary	Trial Design	One record per trial summary parameter	Tabulation	STUDYID, TSPARMCD, TSSEQ	ts.xpt
TV	Trial Visits	Trial Design	One record per planned visit per arm	Tabulation	STUDYID, VISITNUM	tv.xpt
DM	Demographics	Special Purpose	One record per subject	Tabulation	STUDYID, USUBJID	dm.xpt

Demographics Dataset (DM)						dm.xpt
Variable	Label	Type	Controlled Terminology	Origin	Role	Comment
STUDYID	Study Identifier	text		CRF Page Cover	IDENTIFIER	STUDYID = "DEMO-STUDY"
DOMAIN	Domain Abbreviation	text		Derived	IDENTIFIER	DOMAIN="DM"
USUBJID	Unique Subject Identifier	text		Derived	IDENTIFIER	Concatenation of STUDYID, SUBJID separated by "_"
SUBJID	Subject Identifier for the Study	text		CRF Page Cover	TOPIC	
RFSTDTC	Subject Reference Start Date/Time	text		Derived	TIMING	First intake of study medication in randomized treatment phase
RFENDTC	Subject Reference End Date/Time	text		CRF Page 39	TIMING	Date of last visit
SITEID	Study Site Identifier	text		CRF Page Cover	RECORD QUALIFIER	
INVID	Investigator Identifier	text		CRF Page Cover	RECORD QUALIFIER	
INVNAM	Investigator Name	text		CRF Page Cover	SYNONYM QUALIFIER	
BRTHTDTC	Date/Time of Birth	text		CRF Page 2	RESULT QUALIFIER	
AGE	Age in AGEU at RFSTDTC	integer		Derived	RESULT QUALIFIER	Age in AGEU at RFSTDTC
AGEU	Age Units	text	AGEU	Derived	VARIABLE QUALIFIER	AGEU = "YEARS"
SEX	Sex	text	SEX	CRF Page 2	PEOPLE QUALIFIER	

Study Identifier (STUDYID)	Domain Abbreviation (DOMAIN)	Unique Subject Identifier (USUBJID)	Subject Identifier for the Study (SUBJID)	Subject Reference Start Date/Time (RFSTDTC)	Subject Reference End Date/Time (RFENDTC)	Study Site Identifier (SITEID)	Investigator Identifier (INVID)	Investigator Name (INVNAM)	Date/Time of Birth (BRTHTDTC)	Age in AGEU at RFSTDTC (AGE)	Age Units (AGEU)	Sex (SEX)
1									1979-01-0	25 YEARS		M
2									1980-02-1	24 YEARS		M
3									1986-07-1	18 YEARS		F
4									1986-05-2	19 YEARS		F
5									1984-11-1	20 YEARS		F
6									1966-07-1	48 YEARS		F
7									1966-02-2	38 YEARS		F
8									1961-12-0	43 YEARS		F
9									1963-10-2	41 YEARS		M
10									1968-06-1	36 YEARS		M
11									1982-04-0	22 YEARS		M

CRF Form Fields:

- BRTHTDTC:** Date of Birth (day/month/year)
- SEX:** Male (1), Female (2). **SEX** label is highlighted in red.
- RACE:** Ethnic Group (check only one): Caucasian (1), Black / African American (2), Oriental / Asian (3), Other (4). **RACE** label is highlighted in red.
- SCORRES:** where SCTESTCD=RACEOTH. Please specify: _____
- Study Indication:** SCORRES where SCTESTCD=INDC. **Healthy Volunteer** is highlighted in red.
- DSDECOD, DSTERM:** Date (day/month/year) and Time (24-hour clock).
- DSDTC:** Date (day/month/year) and Time (24-hour clock).
- Informed Consent:** (checkbox)
- Screening:** (checkbox)
- Study Admission:** (checkbox)

Summary & Conclusions

✓ THE STATUS NOW

- Data flow as communicated to FDA
 - Quality ensured via process design (built-in consistency)
- Manual QC steps to ensure full data/information integrity

✓ THE FUTURE

- Automated data/information exchange
 - From Protocol (Trial Design, SAP)
 - To CDASH
 - To SDTM
 - To ADaM
- Final submission package with less manual QC steps

✓ Follow up on CDISC standards developments

Thank You!

