PINNACLE 21

EXPLORING COMMON CDISC ADAM CONFORMANCE FINDINGS

Trevor Mankus – Product Manager

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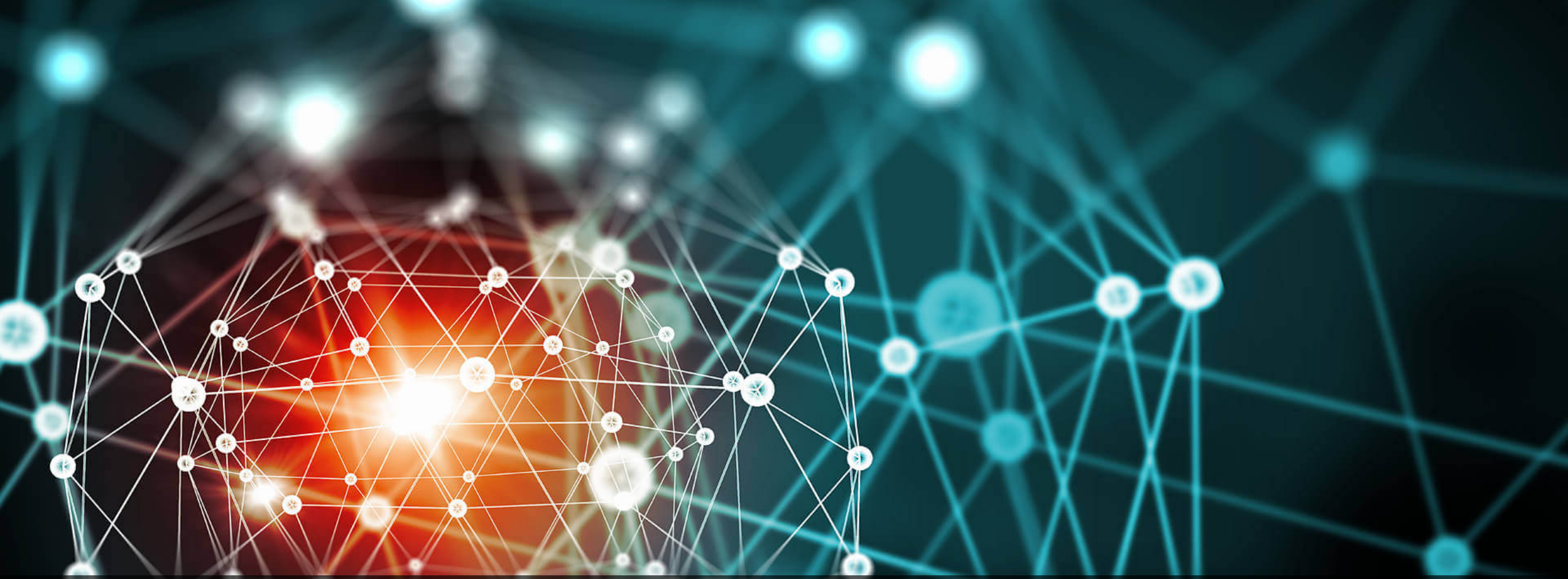
TREVOR MANKUS

PRODUCT MANAGER

- SAS programmer
- CDISC ADaM conformance sub-team lead
- User advocate

AGENDA

- Introduction
- P21 metrics
- Common issues in ADaM
- Conclusions
- Q + A



INTRODUCTION

INTRODUCTION

- ADaM conformance can be assessed by:
  - Machine-testable checks
  - Manual review of data vs. ADaM principles and concepts
- Benefits of machine-testable checks:
  - Fast, efficient, and reusable
  - Reports in standardized format
  - Reporting can be analyzed for patterns

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INTRODUCTION

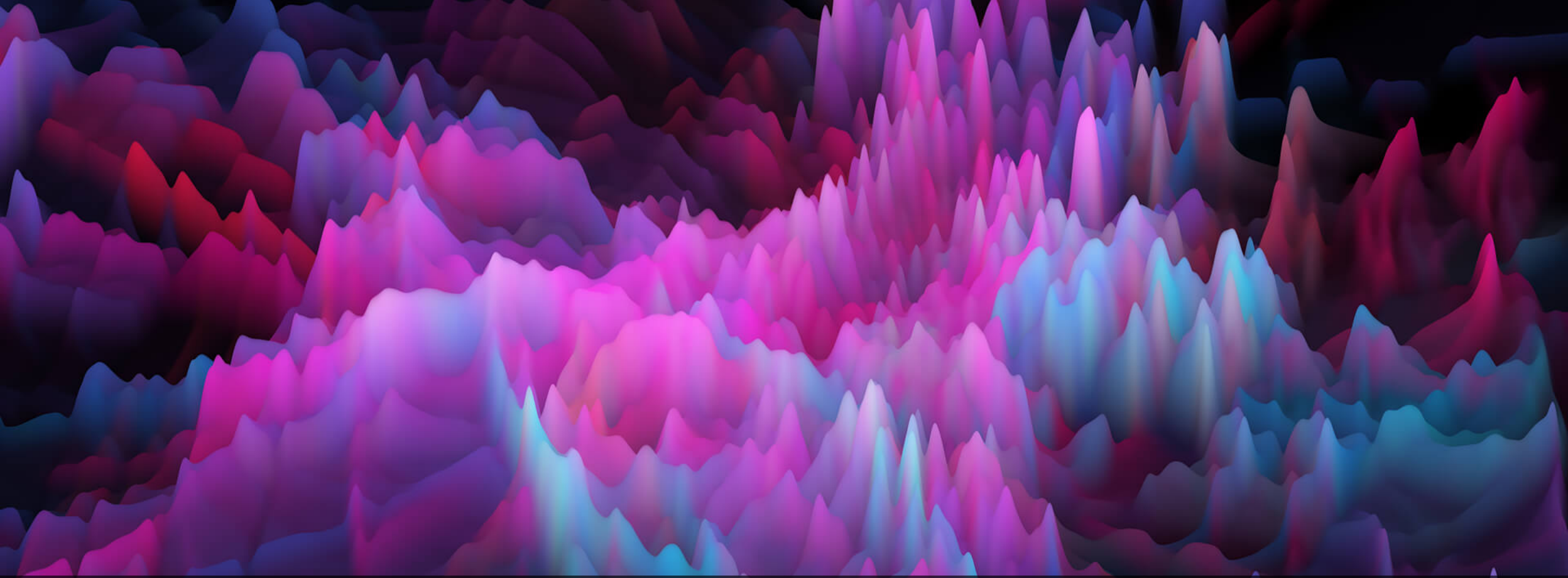
- How can this information be used?
  - Standard issue descriptions in ADRG
  - Identify areas where additional training material would be beneficial
- Biggest challenge:
  - Understanding what corrective action(s) to take

METRICS

Digging into our data

METRICS

- P21 has unique ability to analyze thousands of data points from Enterprise customers
- Large sample size
- Commonly occurring conformance rules
  - What are they?
  - Why, potential causes
  - Corrective action and suggestions
  - Reviewer's guide explanations



CT2002

Variable value not found in extensible codelist

CT2002

Variable value not found in extensible codelist

- Found in 70% of data packages
- Two prominent use cases:
  - ADSL: RACE variable
  - BDS: DTYPE variable

CT2002 (ADSL.RACE)

Variable value not found in extensible codelist

- Found in 62% of data packages
- ADaMIG mandates that race of a subject is a required variable in ADSL
- Must be identical to DM.RACE
- Principle of harmonization:
  - “Same name, same meaning, same values”
- DM.RACE is subject to controlled terminology
  - Codelist: RACE (C74457)
  - Extensible: No

CL.C74457.RACE	Race (RACE)	text Extensible: No	C74457
	AMERICAN INDIAN OR ALASKA NATIVE		C41259
	ASIAN		C41260
	BLACK OR AFRICAN AMERICAN		C16352
	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER		C41219
	NOT REPORTED		C43234
	UNKNOWN		C17998
	WHITE		C41261

RACE CODELIST (C74457)

Note the codelist is non-extensible

https://www.cancer.gov/research/resources/terminology/cdisc

CT2002 (ADSL.RACE)

Variable value not found in extensible codelist

- SDTMIG describes additional scenarios
  - If multiple races are collected
    - RACE = MULTIPLE
  - If race is collected via “Other, specify” field
    - RACE = OTHER
    - SUPPDM: QNAM record showing details
  - If subject refuses to provide race information
    - RACE = UNKNOWN

CT2002 (ADSL.RACE)

Variable value not found in extensible codelist

- Discrepancies between CT and SDTMIG
  - SDTMIG has values of MULTIPLE and OTHER
- How does Pinnacle 21 address this?
  - Consider codelist extensible
  - Warning as opposed to Error

CT2002 (ADSL.RACE)

Variable value not found in extensible codelist

- Sample ADRG explanation

Dataset(s)	Diagnostic Message and/or Check ID	Severity	Count/Issue Rate	Explanation
ADSL	CT2002: Variable value not found in extensible codelist	Warning	2	Both subjects selected “Other, specify” on the CRF. Per the SDTM-IG, DM.RACE = “OTHER” and details of race can be found in SUPPDM.

CT2002 (BDS.DTYPE)

Variable value not found in extensible codelist

- Found in 8% of data packages
- ADaMIG states:
  - “DTYPE is used to denote, and is required to be populated when the value of AVAL/AVALC has been imputed or derived differently than the other analysis values within the parameter”.
- DTYPE is subject to controlled terminology
  - Codelist: DTYPE (C81224)
  - Extensible: Yes

CT2002 (BDS.DTYPE)

Variable value not found in extensible codelist

- Corrective action:
  - Verify CT was used:
    - “WOCF” instead of “WORST”
  - Check case and formatting against CDISC Submission Value
  - Use a descriptive value; avoid using “DERIVED”
    - The presence of a value in DTYPE indicates the value was derived
    - This is very common and very incorrect
    - The value should describe **how** it was derived

CT2002 (BDS.DTYPE)

Variable value not found in extensible codelist

- If all is good, document in ADRG

Dataset(s)	Diagnostic Message and/or Check ID	Severity	Count/Issue Rate	Explanation
ADEFF	CT2002: Variable value not found in extensible codelist	Warning	27	DTYPE set to “SUM” which is not part of the DTYPE codelist in the 2017-03-31 ADaM terminology package. A value of “SUM” indicates that AVAL/AVALC was derived by adding values from prior observed records. See Section 3.6: Imputation/Derivation Methods for more details.

AD0047

Required variable is not present

AD0047

Required variable is not present

- Found in 51% of data packages
- Rule checks for presence of all required variables described in ADaMIG
- Based on dataset classification
  - Different variables are required for ADSL, BDS, ADAE, and OCCDS

ADSL	BDS	ADAE[1]	OCCDS
STUDYID			
USUBJID			
SUBJID	PARAMCD	AESEQ	--SEQ
SITEID	PARAM	AEDECOD	
AGE	TRTP[1]	AEBODSYS	
AGEU		AETERM	
SEX		AESER	
RACE			
ARM			
TRT01P			

REQUIRED VARIABLES

Per ADaMIG and OCCDS documents

[1] Specific to ADaMIG v1.0 rules

AD0047

Required variable is not present

- Requirements change between ADaMIG versions

- Example of a common mistake:

CDISC ADaMIG Rules	
IG v1.0	TRTP must be present in BDS data sets (Core=Req)
IG v1.1 and IG v1.2	At least one treatment variable is required in a BDS dataset. This requirement is satisfied by any of the subject-level or record-level treatment variables.

AD0047

Required variable is not present

- False positives
  - Early versions of Community and Enterprise incorrectly identified OCCDS and ADAM OTHER as BDS
    - Caused AD0047 for PARAMCD / PARAM

How Pinnacle 21 Identifies ADaM Classes		
	FDA	PMDA
ADSL	“ADSL”	“ADSL”
ADAE	“ADAE”	“ADAE”
BDS	PARAMCD, PARAM, AVAL, AVALC	PARAMCD, PARAM, AVAL, AVALC
OCCDS	--TRT, --TERM (no PARAMCD)	
ADAM OTHER	“AD*”	“AD*”

AD0047

Required variable is not present

- Corrective action
  - Review the requirements and update, if needed
  - Document in ADRG is no correction action needed

- Sample ADRG explanation

Dataset(s)	Diagnostic Message and/or Check ID	Severity	Count/Issue Rate	Explanation
ADCM	AD0047: Required variable is not present	Error	1	ADCM is an OCCDS dataset that was incorrectly identified as BDS. Per OCCDS v1.0, the PARAM variable is not required or appropriate for this class.

AD0018

Variable label mismatch between dataset and ADaM standard

AD0018

Variable label mismatch

- Found in 50% of data packages
- Validates the variable label matches the standard label

AD0018

Variable label mismatch

- Common causes due to changes across IG versions
  - ANLzzFL
    - IG v1.0: Analysis Record Flag zz
    - IG v1.1: Analysis Flag zz
  - AOCCFL
    - ADAE v1.0: 1st Occurrence of Any AE Flag
    - OCCDS v1.0: 1st Occurrence within Subject Flag
  - ADURN
    - ADAE v1.0: AE Duration (N)
    - OCCDS v1.0: Analysis Duration (N)

AD0018

Variable label mismatch

- Common causes due to changes across IG versions (cont.)
  - *DTM variables
    - IG v1.0: … Date/Time
    - IG v1.1: … Datetime
    - OCCDS v1.0: … Date/Time
    - OCCDS v1.1: … Datetime
  - AVALCATy
    - IG v1.0: Analysis Category y
    - IG v1.1: Analysis Value Category y
  - PCHGCATy
    - IG v1.0: Percent Change from Baseline y
    - IG v1.1: Percent Chg from Baseline Category y

AD0018

Variable label mismatch

- Common causes due to changes across IG versions (cont.)
  - SRCDOM
    - IG v1.0: Source Domain
    - IG v1.1: Source Data
  - STARTDT
    - IG v1.0: Time to Event Origin Date for Subject
    - IG v1.1: Time-to-Event Origin Date for Subject

3.1.6 Additional Information about Section 3

In general, the variable labels specified in the tables in Section 3 are required. There are only two exceptions to this rule:

1. Descriptive text is allowed at the end of the labels of variables whose names contain indexes "y" or "zz"; and
2. Variable labels containing a word or phrase in brackets, e.g. {Time}, should be replaced by the producer with appropriate text that contains the bracketed word or phrase somewhere in the text (e.g., the label for a *TM variable is indicated as {Time} in this document) indicating any producer-defined label is permitted as long as the word Time is incorporated in it.

VARIABLE LABEL EXCEPTIONS

Section 3.1.6: Additional Information about Section 3

https://www.cdisc.org/standards/foundational/adam/adam-implementation-guide-v1-1-release-package

AD0018

Variable label mismatch

- Exception 1 (‘y’ or ‘zz’ variables)
  - Example: ANLzzFL
    - A label of “Analysis Flag zz” is not descriptive
    - Producers can add text after the standard label
    - “Analysis Flag 01 – Thromb. Event” is allowed
    - This can be helpful especially when many flags are present or for integrated studies

AD0018

Variable label mismatch

- Exception 2 (labels with brackets)
  - Table 3.3.3.3: Suffixes for User-Defined Timing Variables
    - Contains 18 variables with labels that contain brackets
  - Variable: *ADY
  - Label: {Relative Day}
    - User-defined label must contain “Relative Day”
  - Variable: *SDTM
  - Label: {Start Datetime}
    - User-defined label must contain “Start Datetime”
    - “Start … Datetime” is not valid; must be a string

AD0018
Variable label mismatch

- Corrective action
  - Update the label to match the standard
  - Review casing and formatting; exact match
  - If variable falls under exceptions 1 or 2:
    - Ensure label matches up until producer-defined text starts
  - Document in Reviewer's Guide

AD0124

Inconsistent value for PARCAT within a unique PARAMCD

AD0124

Inconsistent value for PARCAT within a unique PARAMCD

- Found in 24% of data packages
- Validate the relationship between PARCATy and PARAMCD
  - Relationship = MANY:ONE
  - A given value of PARAMCD can map to only one value of PARCATy

AD0124

Inconsistent value for PARCAT within a unique PARAMCD

- Relationship between PARCATy:PARAMCD is different than xxCAT:xxTESTCD
- This is very common and very incorrect
- Care must be taken to ensure uniqueness

AD0124 EXAMPLES

PARAMCD	PARAM	PARCAT1
GLUC	Glucose	Urinalysis
		Chemistry

Incorrect

ONE:MANY relationship, not MANY:ONE

PARAMCD	PARAM	PARCAT1
UGLUC	Urine Glucose (mmol/l)	Urinalysis
GLUC	Blood Glucose (mg/dL)	Chemistry

Correct

Note “U” prefix on PARAMCD for Urinalysis

CONCLUSIONS

CONCLUSIONS

- Organizations can benefit from analyzing our reports
  - ADRG explanations
  - Areas of focus for training
- ADaM conformance is more than just machine-testable checks
- Document, document, document!
  - The ADRG is an important piece of the submission puzzle

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QUESTIONS?

KEEP IN TOUCH!

TREVOR MANKUS

TMANKUS@PINNACLE21.COM

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