

(2020-JA-30MT-20)

CDISCとJMP Clinicalの紹介

SAS Institute Japan株式会社
宮田 英明

ご協力をお願い

- Discovery Summit Japan 2020に、ご参加いただきありがとうございます。
- ご視聴いただきました発表動画へのご質問やコメント、または詳しい内容を聞いてみたい、発表者へコンタクトしたいなどございましたら、Summit終了後にお送りするアンケートへの記入をお願いいたします。

JAPAN 2020



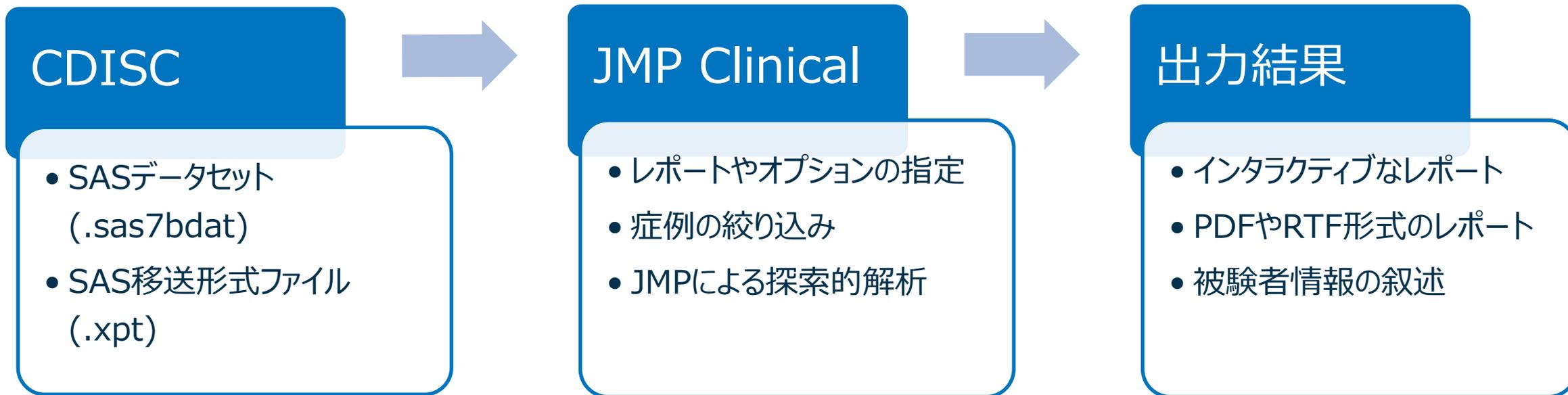
トピック

- JMP Clinicalの概要
- JMP Clinicalで用いるデータ標準（CDISC）
- JMP Clinicalの操作

JMP Clinicalの概要

特徴

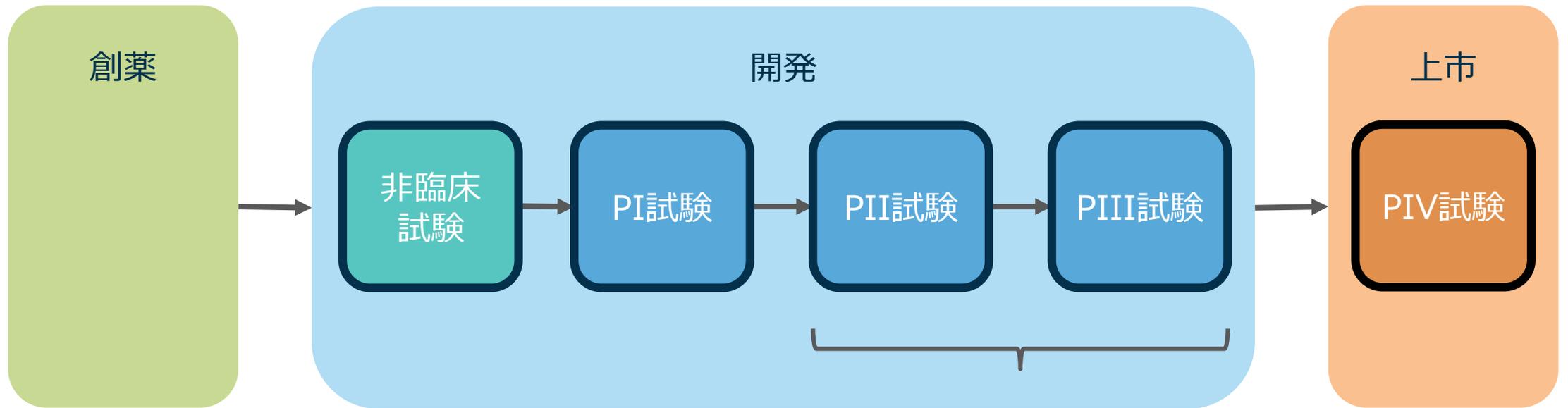
- CDISCに準拠した臨床試験データのレビュー及び分析に強みをもつ



JMP Clinicalの概要

適用領域

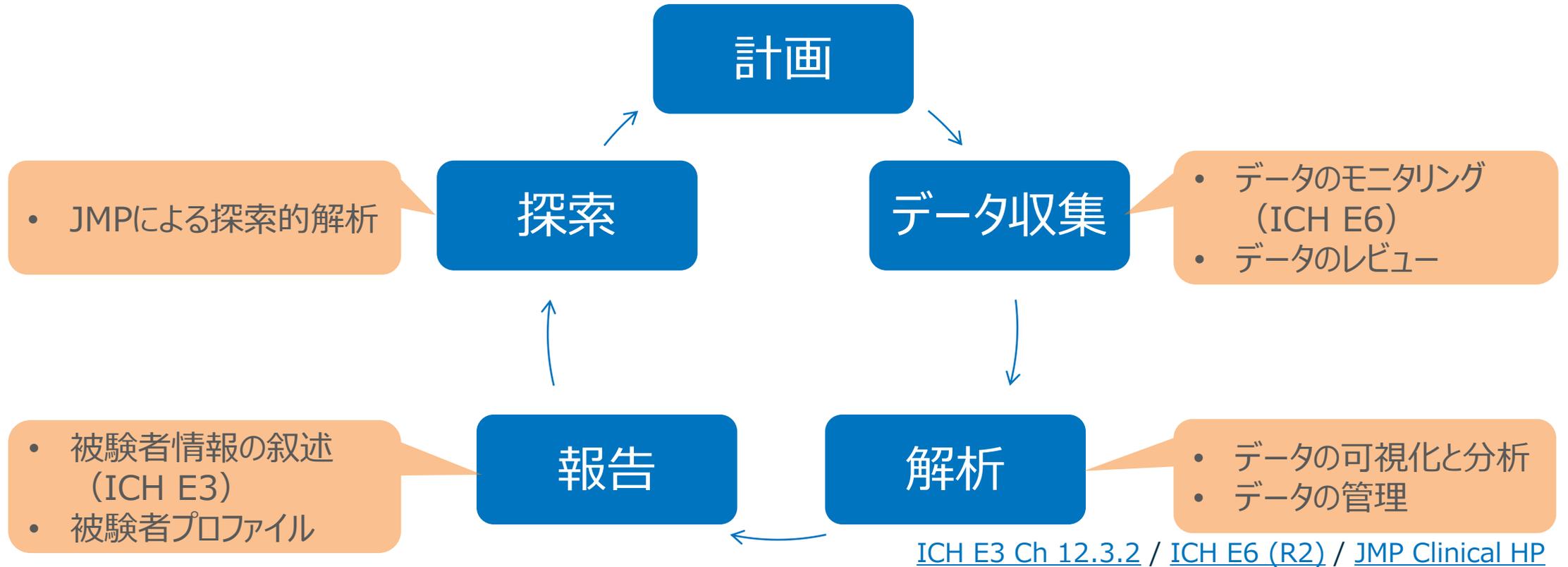
 …JMP Clinicalの適用領域



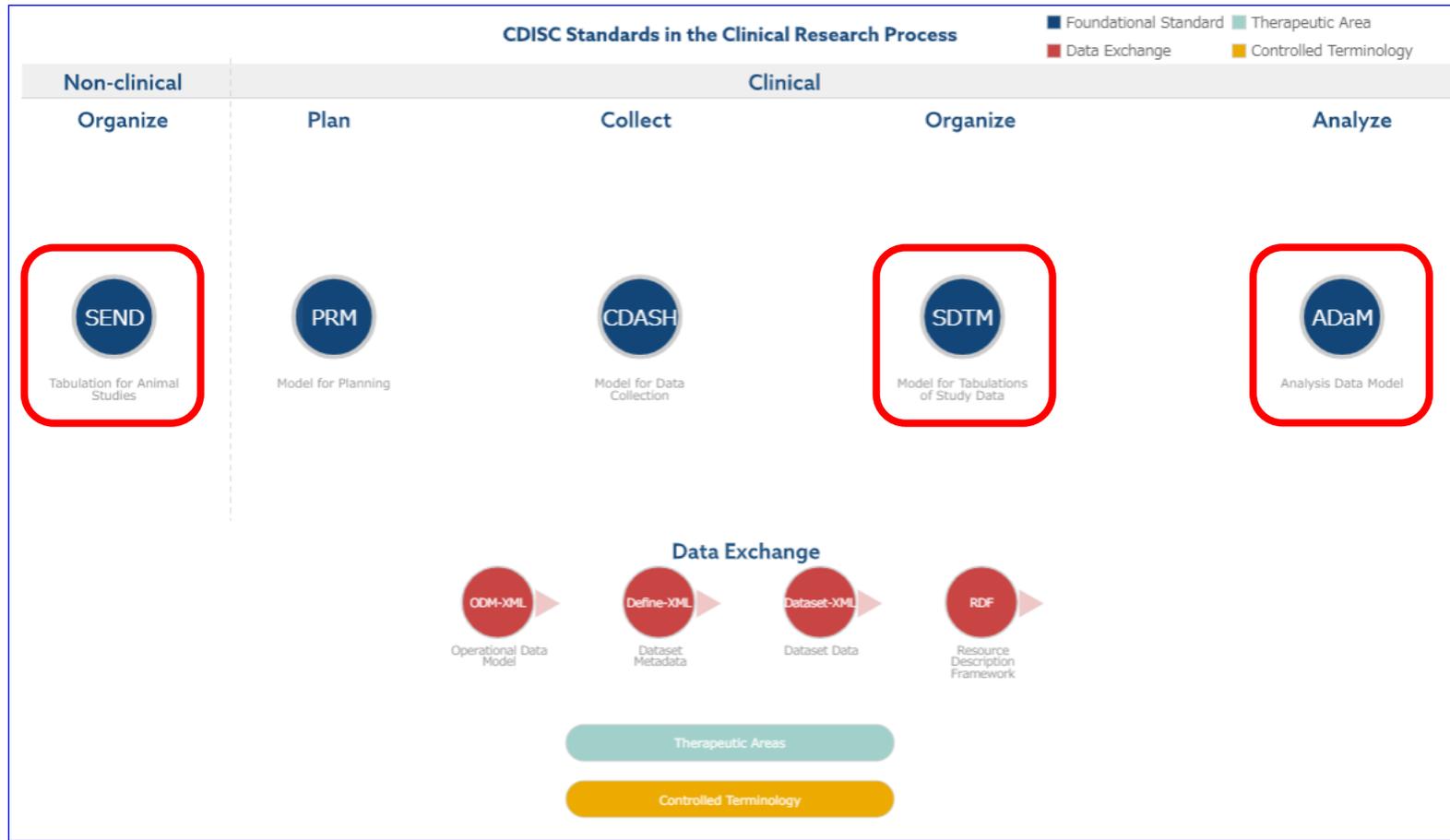
承認申請日が2020年4月1日以降の場合、有効性、安全性及び用法・用量の根拠となる試験はCDISC準拠のデータセットの提出が必要 ([関連通知](#))

JMP Clinicalの概要

機能



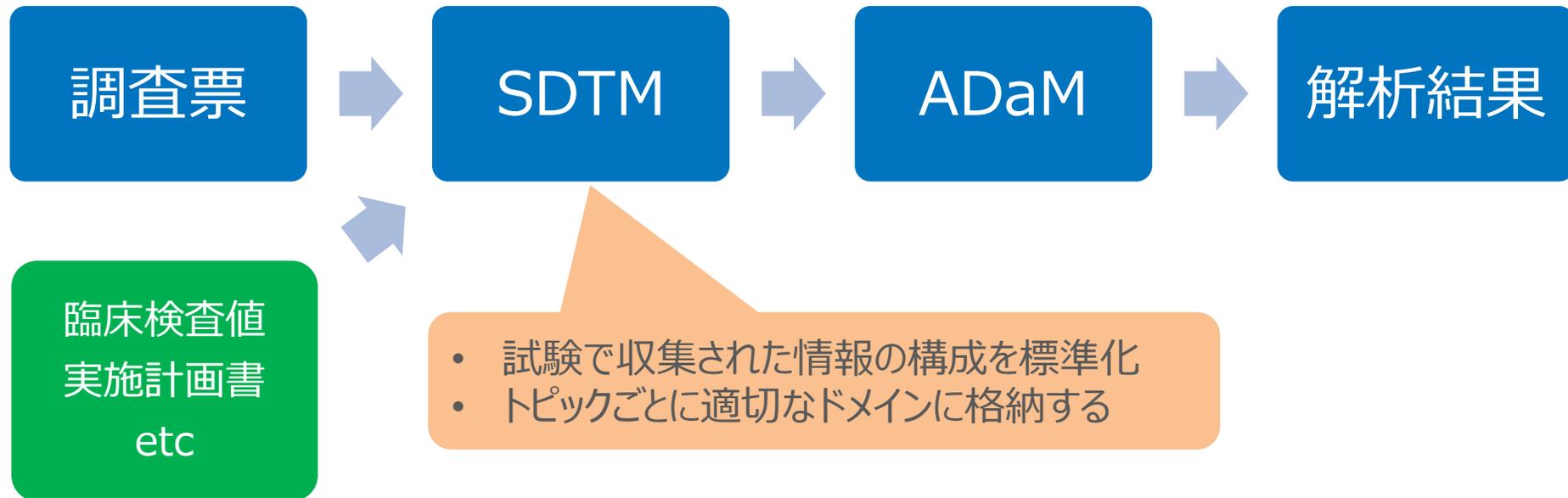
JMP Clinicalで用いるデータ標準 CDISC



<https://www.cdisc.org/standards>

JMP Clinicalで用いるデータ標準

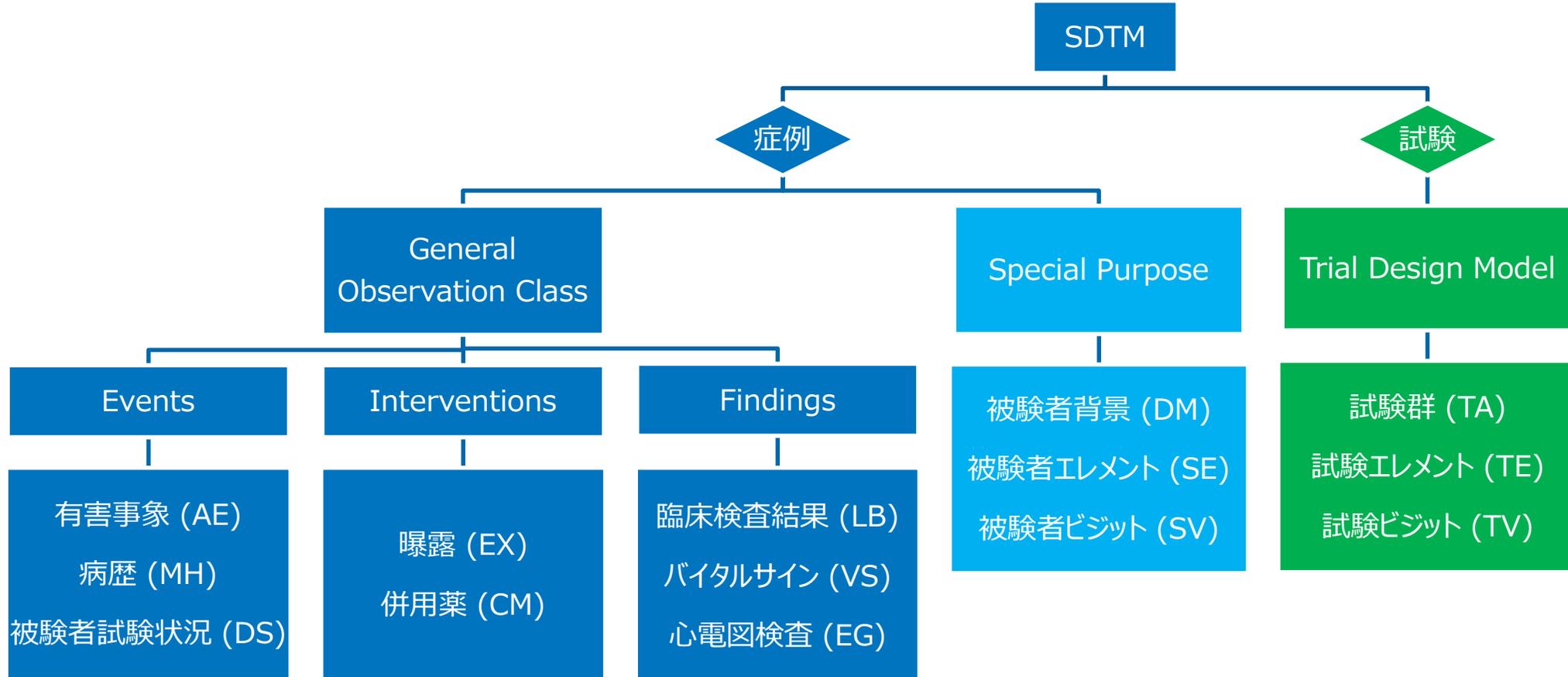
SDTMの役割



[SDTM Model v1.4 Ch 2.1](#) / [SDTM Model v1.4 Ch 2.1 \(日\)](#)

JMP Clinicalで用いるデータ標準

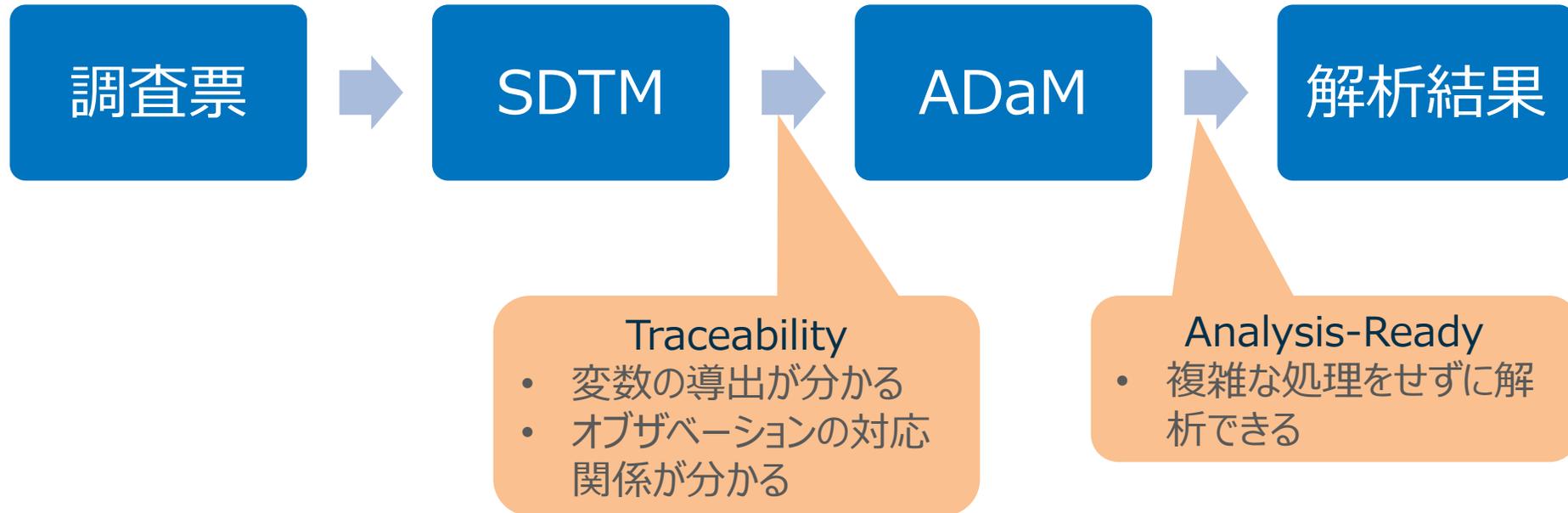
SDTMのドメイン



<https://www.cdisc.org/kb/articles/sdtm-structure-diagrams>

JMP Clinicalで用いるデータ標準

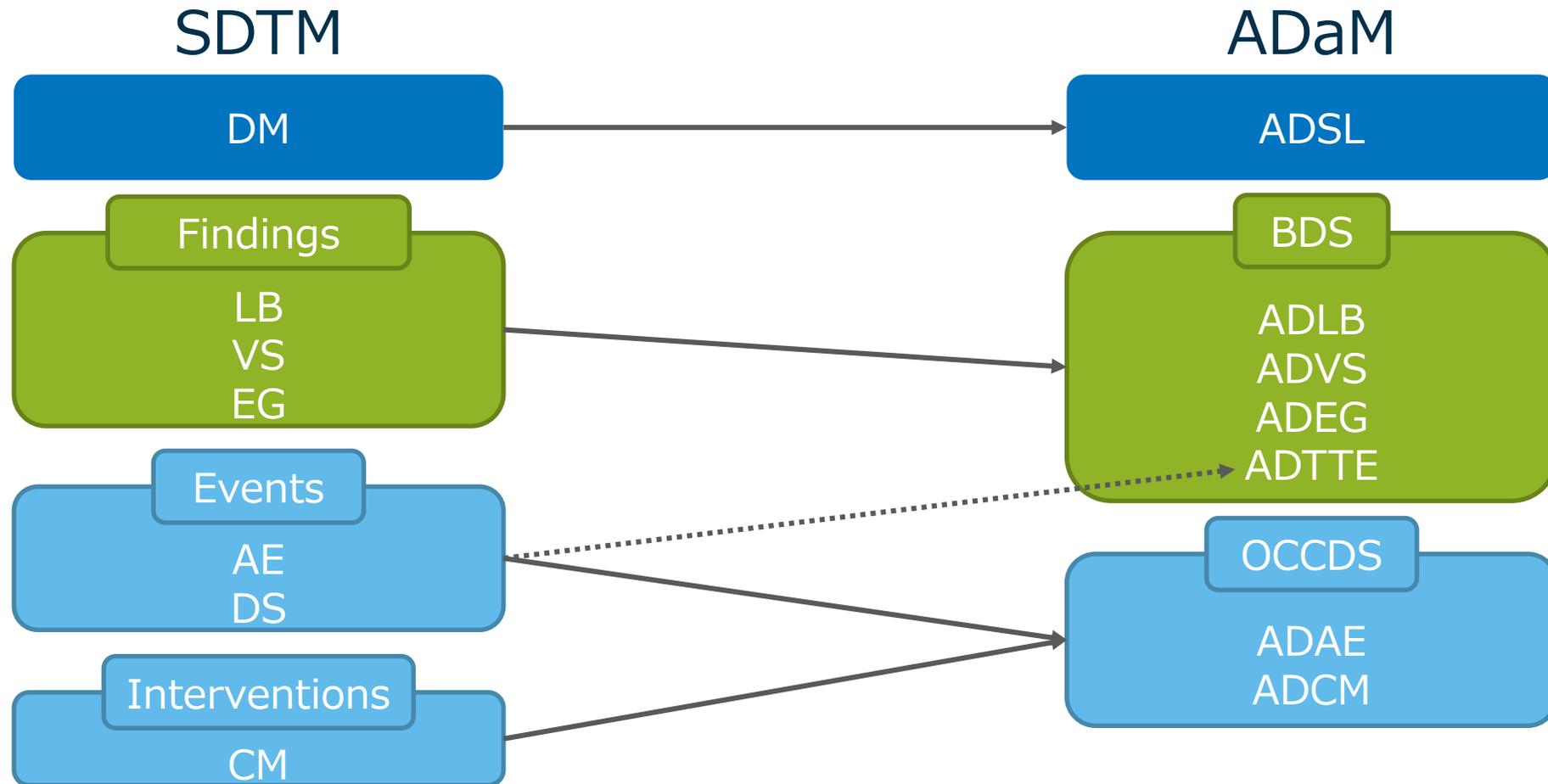
ADaMの役割



[ADaM Model v2.1 Ch 3.1](#)

JMP Clinicalで用いるデータ標準

ADaMのドメイン



JMP Clinicalの操作

サンプルデータ

- クモ膜下出血（SAH）後の遅発性脳血管攣縮に対するNicardipineの有効性を検証したデータ
- 多施設共同・二重盲検・無作為化対照試験
 - 母集団：動脈瘤性SAHを発症した入院患者
 - 投与群：Nicardipine 0.15 mg/kg/hr (n=449) vs プラセボ (n=457)
 - 投与期間：14日

[Nicardipine Data](#)

JMP Clinicalの操作

試験の登録

① Studies

②

③

.xpt ⇒
.sas7bdat ⇒

データ固定前 ⇒
データ固定後 ⇒

④ Run

⑤ OK

Results: Add Study

The study Nicardipine has been successfully added.

View Included and Excluded Domains

Manage Profile Data

Set Value Ordering

JMP Clinicalの操作

試験の登録

Main Window - Default - JMP Clinical

Studies

CDISC Pilot Project
Nicardipine
Oncology Sample

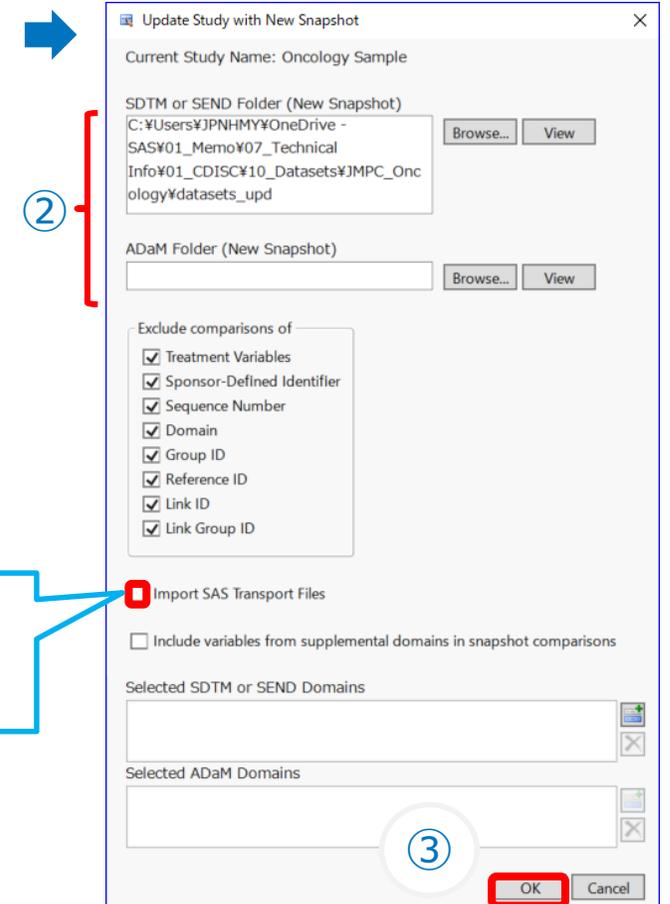
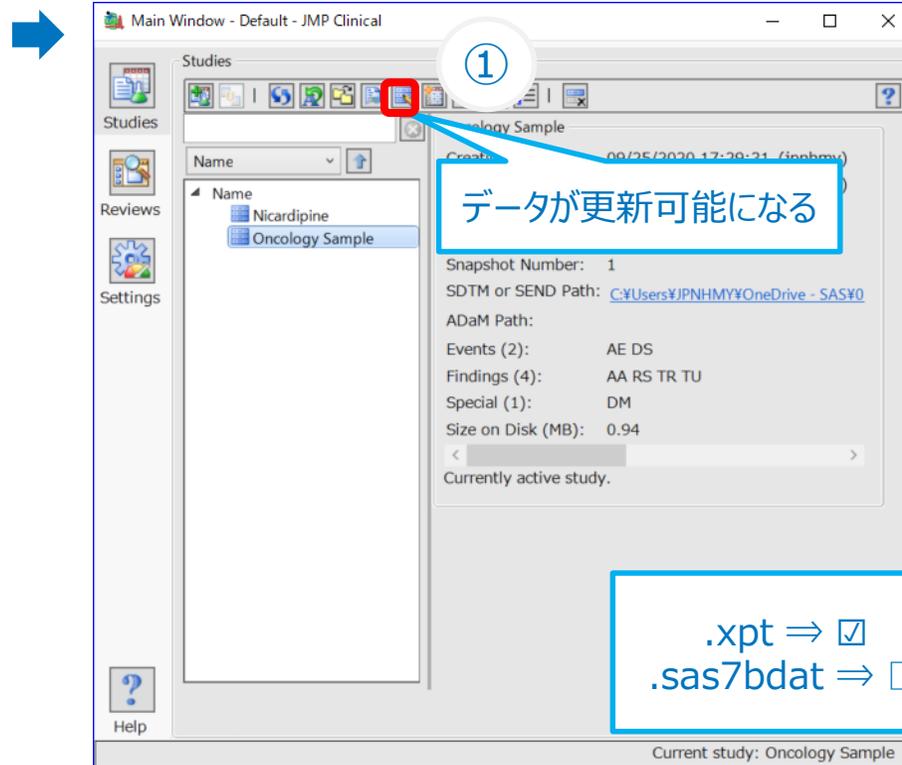
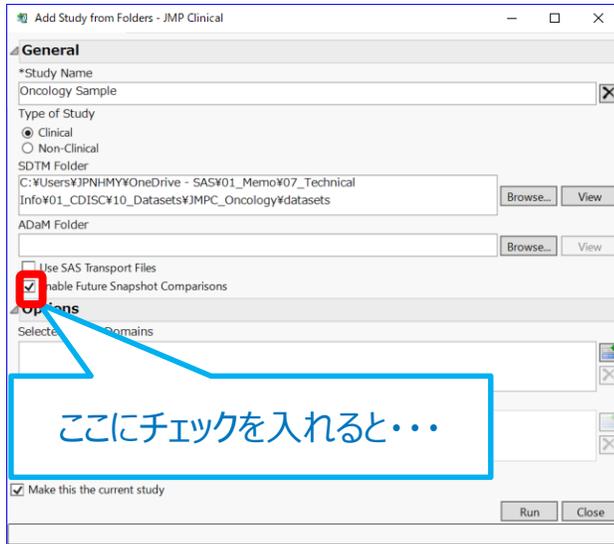
Nicardipine

Creation: 09/11/2020 15:36:16 (jpnhmy)
Last Update: 09/11/2020 15:36:16 (jpnhmy)
Last Access: 09/11/2020 15:36:23
Snapshots Enabled: No
Snapshot Number: 0
SDTM or SEND Path: [C:\Program Files\SASHome\JMPClinical\14\LifeSciences\Sample Data\Nicardipine\SDTM\](#)
ADaM Path: [C:\Program Files\SASHome\JMPClinical\14\LifeSciences\Sample Data\Nicardipine\ADaM\](#)
Events (3): AE DS MH
Findings (3): EG LB VS
Interventions (2): CM EX
Special (3): ADSL DM SV
Size on Disk (MB): 39.66

Currently active study. [Make this the current study](#)

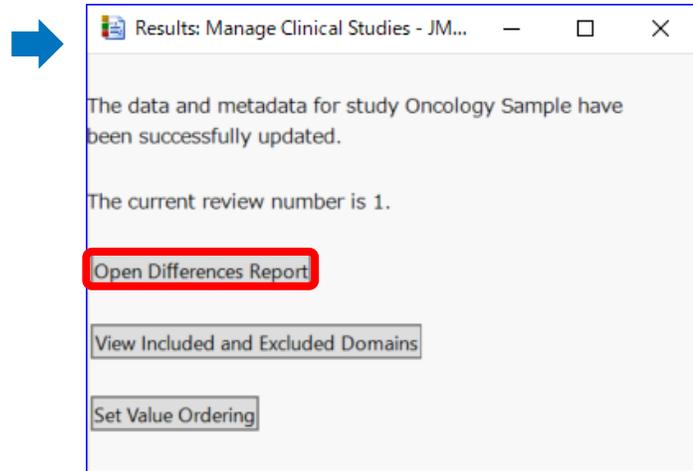
Current study: Nicardipine

JMP Clinicalの操作 データの更新



JMP Clinicalの操作

データの更新



AE: Differences in Variables Between New Snapshot and Previous for Modified Keys

Study Identifier	Unique Subject Identifier	Start Date/Time of Adverse Event	Variable Name	Variable Label	Previous Character Values	New Character Values	Previous Numeric Values	New Numeric Values
JMPCOnco	JMPCO11-001	2012-06-19T07:50	AESER	Serious Event	N	Y		
JMPCOnco	JMPCO11-001	2012-08-01	AESER	Serious Event	N	Y		
JMPCOnco	JMPCO11-001	2012-08-27	AESER	Serious Event	N	Y		

更新箇所を確認できる

JMP Clinicalの操作 新規レビュー

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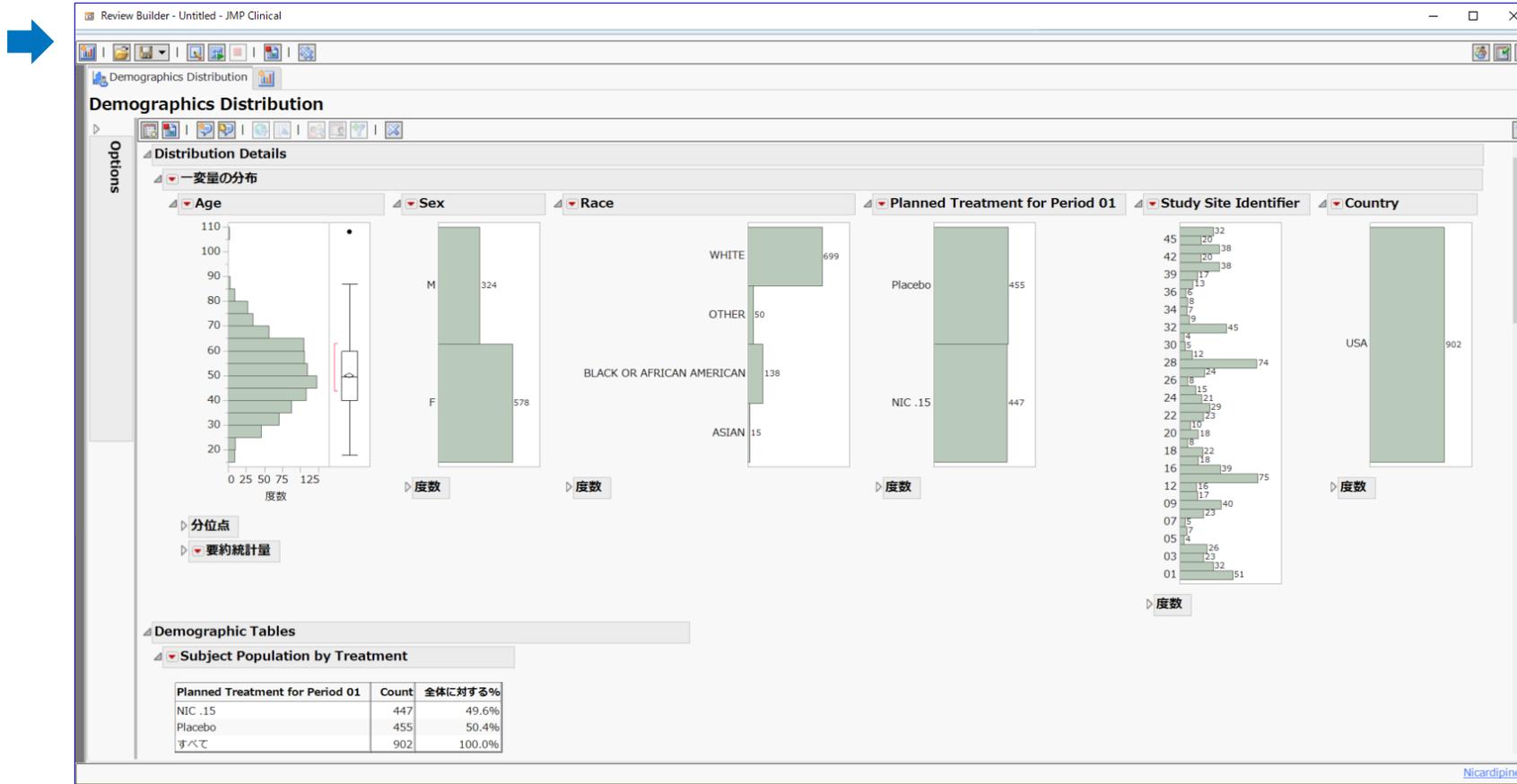
④

⑤

⑥

必要変数の確認

JMP Clinicalの操作 新規レビュー



JMP Clinicalの操作

JMPを用いた探索

例：一変量の分布

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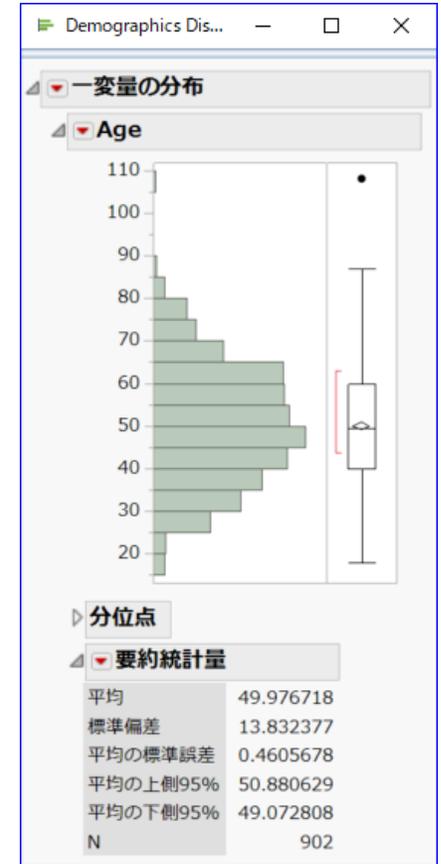
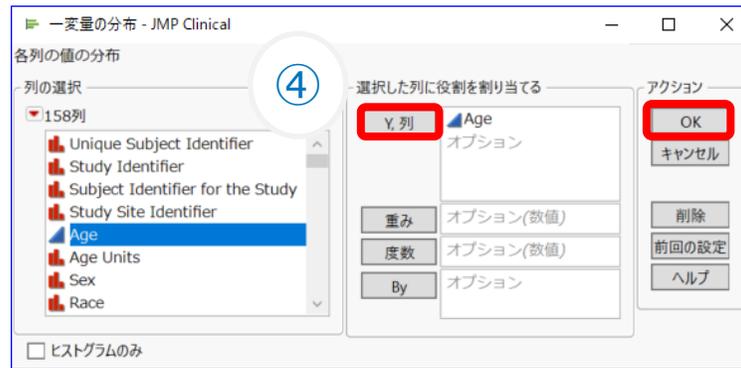
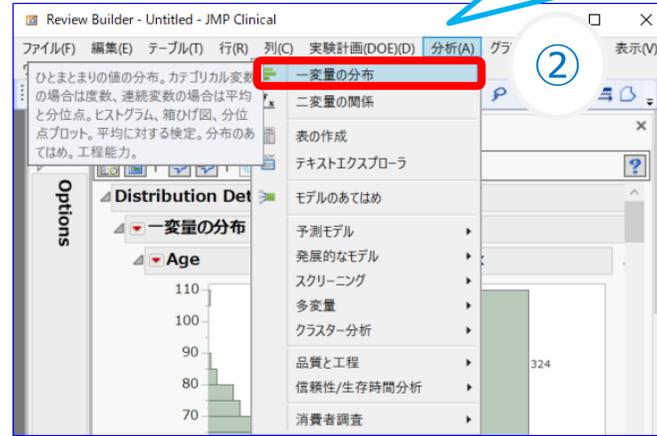
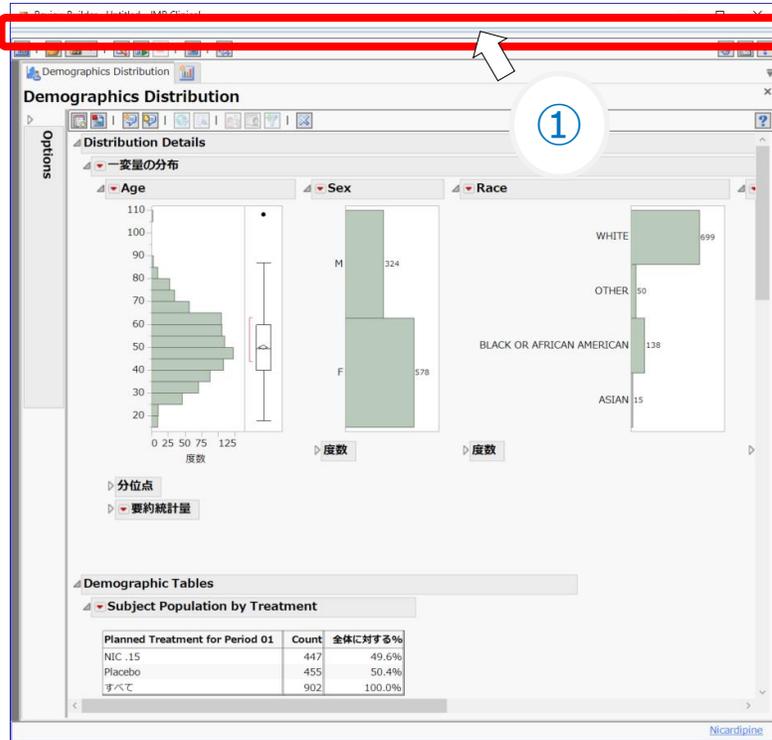
Study Identifier	Subject Identifier for the Study
NICSAH1	101001
NICSAH1	101002
NICSAH1	101003
NICSAH1	101004
NICSAH1	101005
NICSAH1	101006
NICSAH1	101007
NICSAH1	101008
NICSAH1	101009
NICSAH1	101010

要約統計量	値
平均	49.976718
標準偏差	13.832377
平均の標準誤差	0.4605678
平均の上側95%	50.880629
平均の下側95%	49.072808
N	902

JMP Clinicalの操作

JMPを用いた探索

例：一変量の分布



JMP Clinicalの操作 追加レビュー

①

Demographics Distribution

Options

▲ Distribution Details

▲ 変量の分布

▲ Age

▲ Sex

▲ 分位点

▲ 要約統計量

▲ Demographic Tables

▲ Subject Population by Treatment

Planned Treatment for Period 01	Count	全体に対する%
NIC. 15	447	49.6%
Placebo	455	50.4%
すべて	902	100.0%

Nicardipine

Select Reports...

Reports

Clinical Reports Data Management

By CDISC Class

▲ Demographics and Visits

▲ Interventions

▲ Events

Adverse Events Distribution

Adverse Events Narrative

Treatment Emergent Adverse Events Summary

Adverse Events Incidence Screen

Adverse Events Resolution Screen

Adverse Events Severity ANOVA

Adverse Events Time to Event

Mortality Time to Event

Discontinuation Time to Event

Events Distribution

Events Incidence Screen

Standardized MedDRA Queries Distribution

Standardized MedDRA Queries Incidence Screen

Description

JMP® Clinical User's Guide

Introduction Using JMP Clinical Performing Clinical Analyses Reports

Appendixes

You are here: Reports > Events > Adverse Events Distribution

Adverse Events Distribution

This report enables you to compare *distributions of adverse events* across treatment *arms* for subgroups defined by demographics such as age, sex and race.

Note: Refer to [Distribution Reports](#) for a description of the general analysis performed by all JMP Clinical distribution reports.

Report Results Description

Running Adverse Events Distribution with Nicardipine using Actual for [Treatment or Comparison Variable to Use](#) generates the Report for [Adverse Events Distribution](#) as shown below. Differences with other reports are noted throughout this output description.

Show in separate window...

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③

OK Cancel

Review Builder - Untitled - JMP Clinical

Demograp... Distribu...

Adverse Event

Options

General

Term Level

Dictionary-Derived Term

Group Level

Body System or Organ Class

Treatment or Comparison Variable to Use

Actual

*Treatment or Comparison Variable

Adverse Events

Include serious adverse events only

Event Type

All event types

Ignore available treatment emergent flags

Offset for End of Dosing

0 30

Treatment end date is equivalent to the start date

Count multiple occurrences of an event per subject

Include events with overall percent occurrence greater than

0 25

Include events with percent occurrence in any treatment group greater than

0 25

Calculate Relative Risks to compare incidence in treat

Treatment Control Level

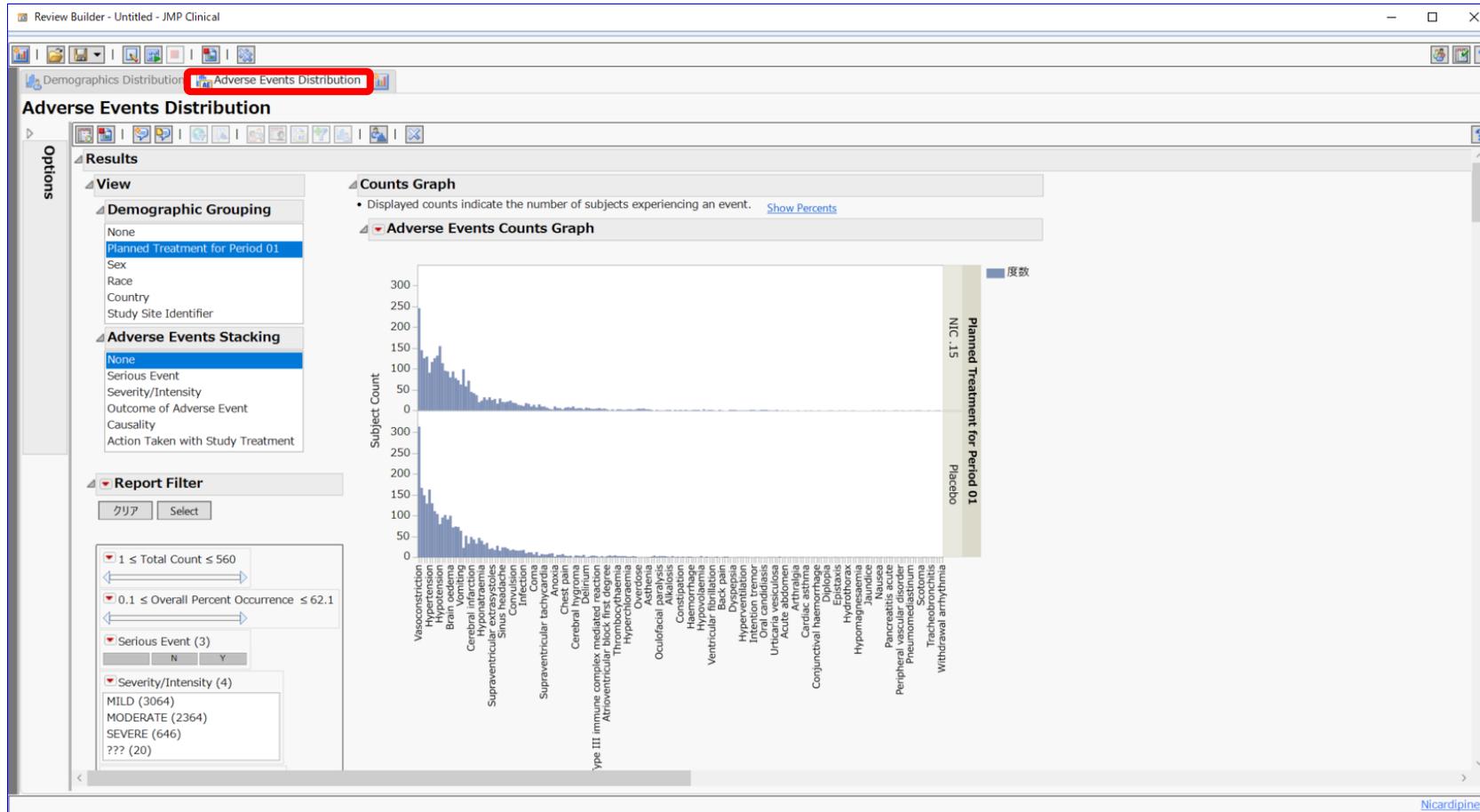
Incidence Rates

Nicardipine

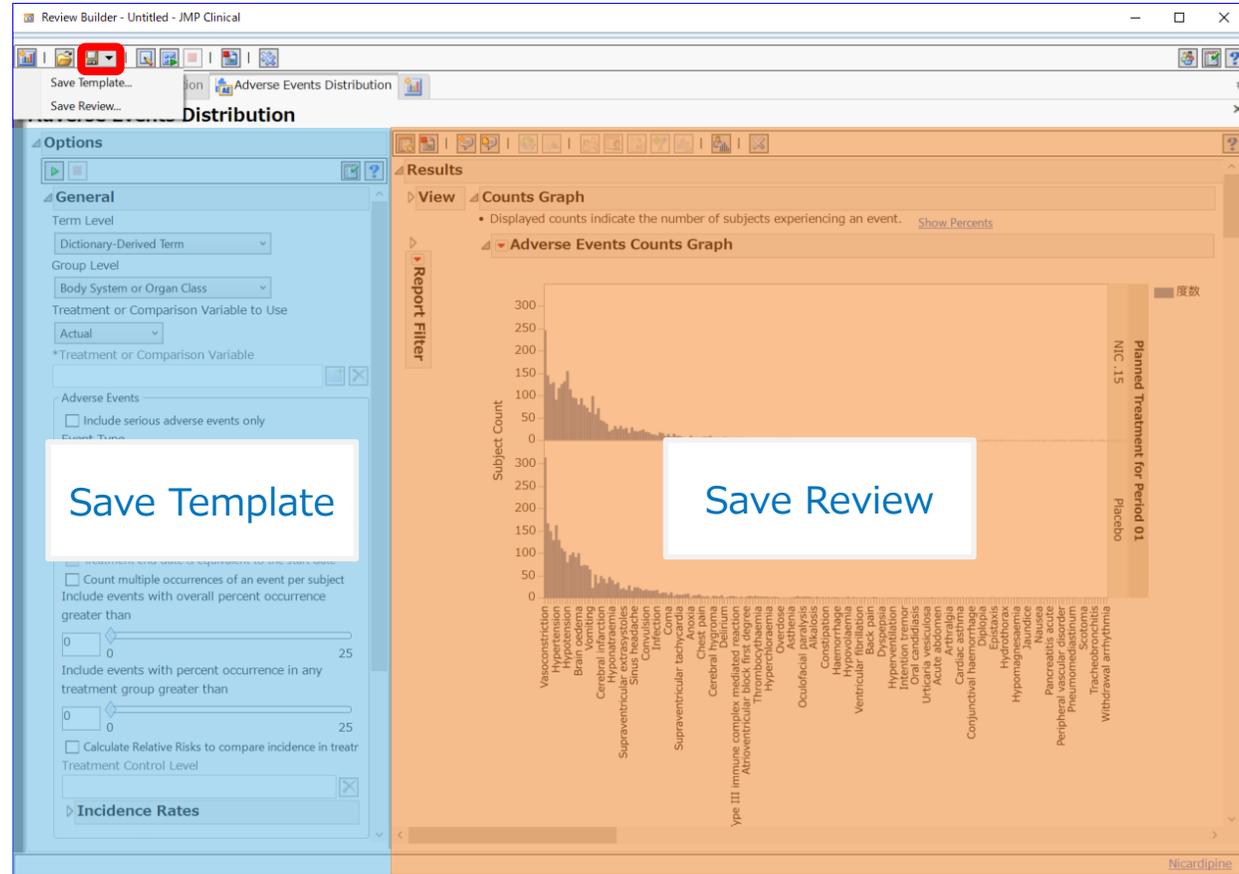
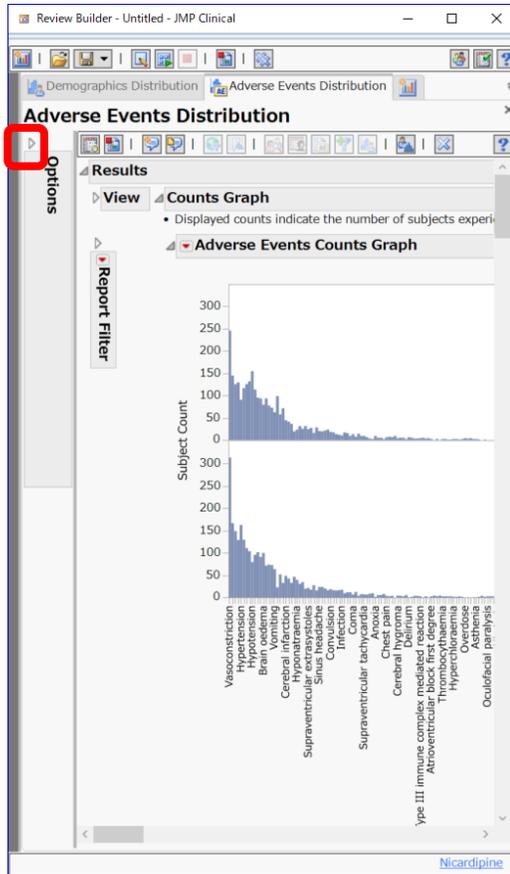
必要変数の確認

④

JMP Clinicalの操作 追加レビュー

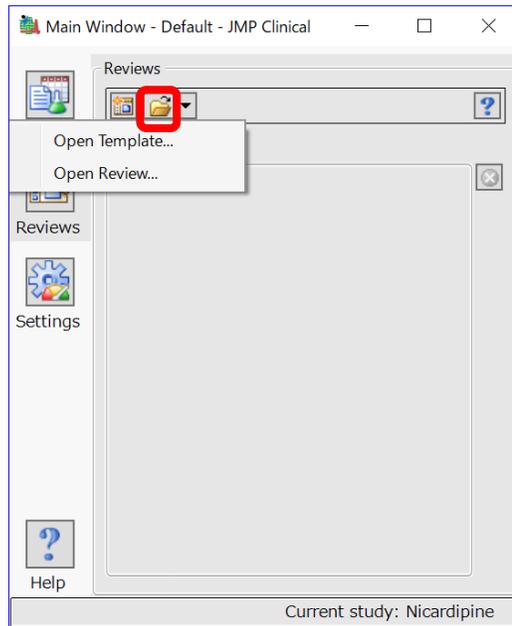


JMP Clinicalの操作 テンプレートとレビューの保存



JMP Clinicalの操作

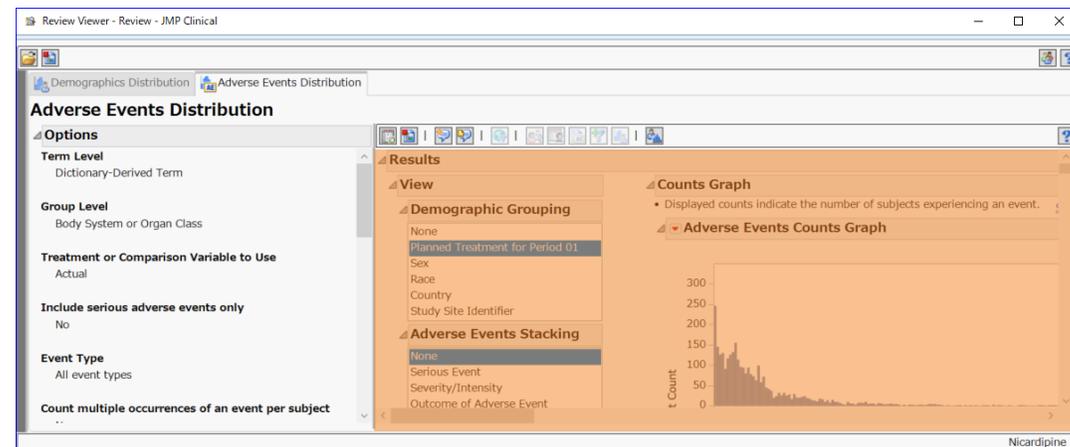
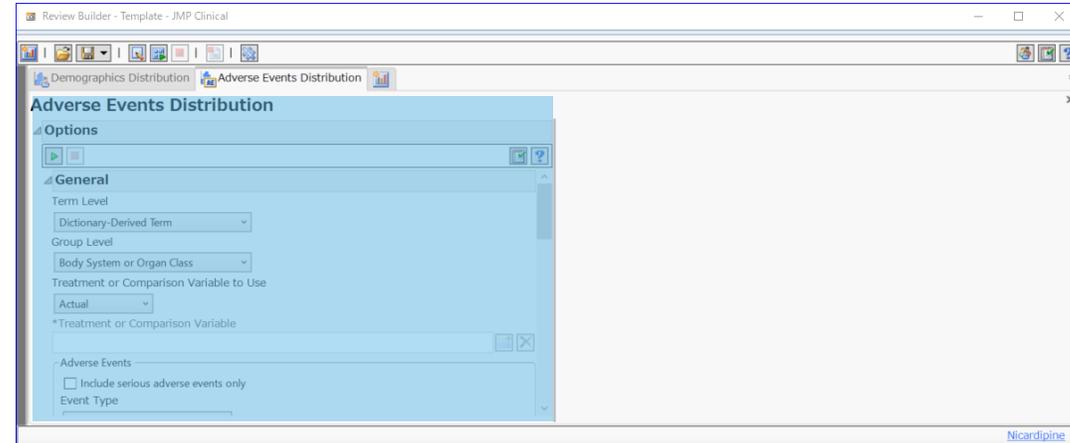
テンプレートとレビューの利用



Open
Template
(.jmpcrt)



Open
Review
(.jmpcrev)



JMP Clinicalの操作 レポートの作成

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①

全てのレビュー結果をレポート化

表示されているレビュー結果をレポート化

②

③

Review Builder - Untitled - JMP Clinical

Demographics Distribution Adverse Event

Adverse Events Distribution

Results

View

Demographic Grouping

None

Counts Graph

• Displayed counts indicate the number of subjects experiencing an event. Show Percents

Adverse Events Counts Graph

Create Static Report

Select Type of Report

PDF

RTF

PowerPoint

Include Notes

OK Page Setup Cancel

Subject Count

Planned Treatment for Period 01

NIC .15

Placebo

Vasoconstriction

Hypertension

Hyperglycaemia

Atelectasis

Heart rate increased

Sepsis neonatal

Hypernatraemia

Platelet destruction increased

Convulsion

Gastrointestinal haemorrhage

Inappropriate antidiuretic hormone secretion

Ileus paralytic

Vasodilatation

Agitation

Infusion site haemorrhage

Type III immune complex mediated reaction

Ventricular tachycardia

Hypophosphataemia

Subcutaneous emphysema

Conjunctival deposit

Subdural haematoma

Constipation

Haemorrhage

Paranoia

Acidosis

Cardiomegaly

Haemoptysis

Injection site abscess

Oral candidiasis

Urticaria vesiculosa

Angina pectoris

Bladder pain

Choking

Deafness

Embolism

Hydrothorax

Hypomagnesaemia

Lung disorder

Obtuse media

Peptic ulcer

Photophobia

Pulmonary tuberculosis

Tracheobronchitis

Withdrawal arrhythmia

Severity/Intensity

Outcome of Adverse Event

Causality

Action Taken with Study Treatment

Report Filter

クリア Select

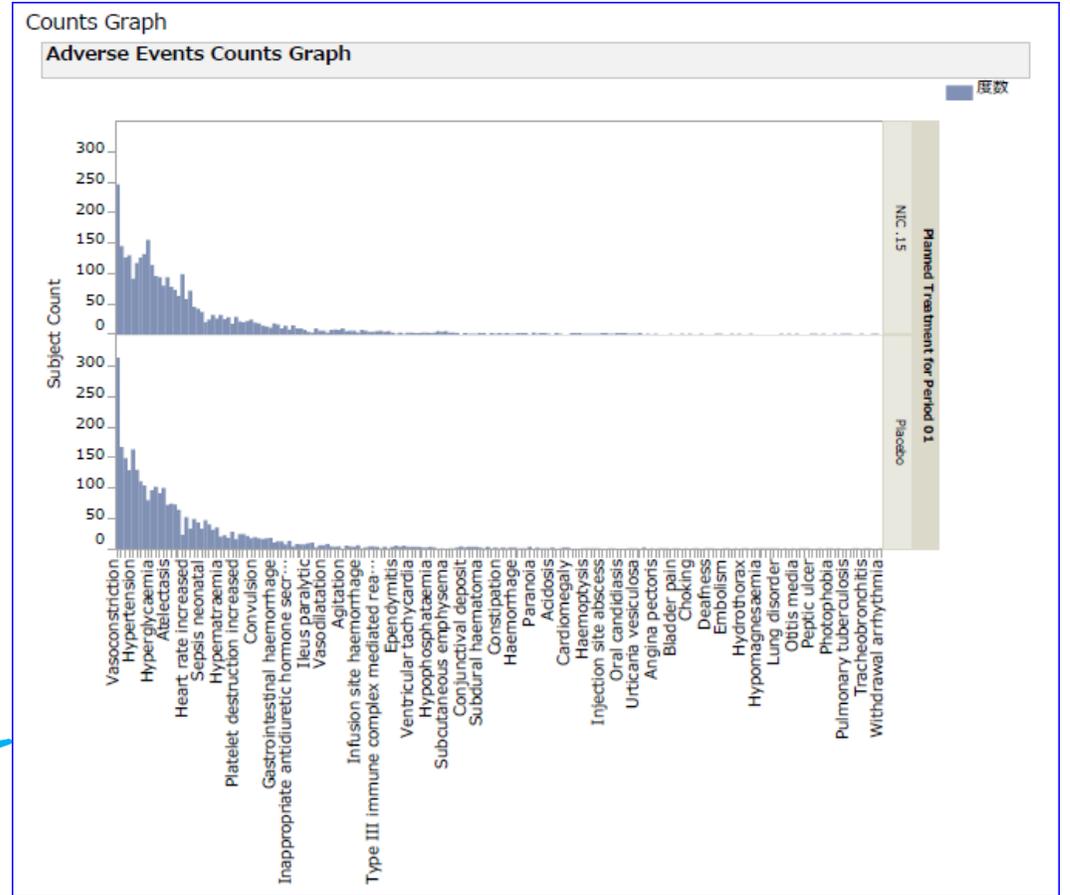
1 ≤ Total Count ≤ 560

0.1 ≤ Overall Percent Occurrence ≤ 62.1

Serious Event (3)

N Y

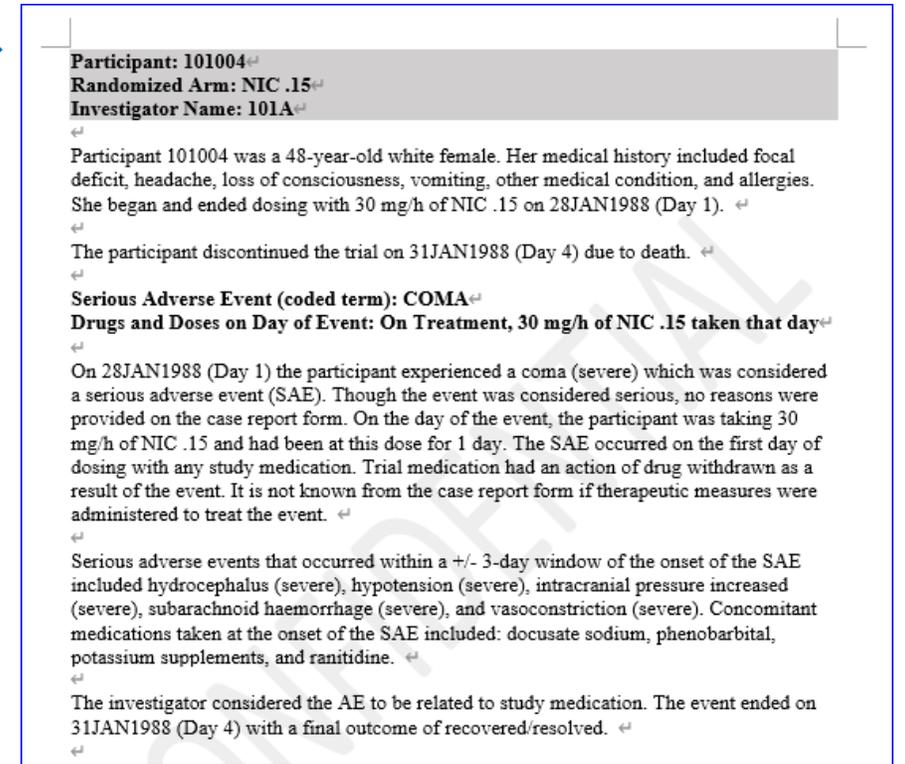
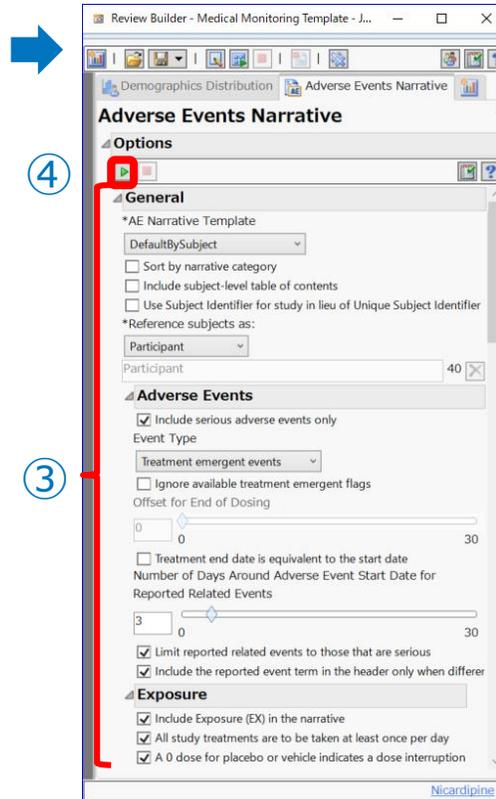
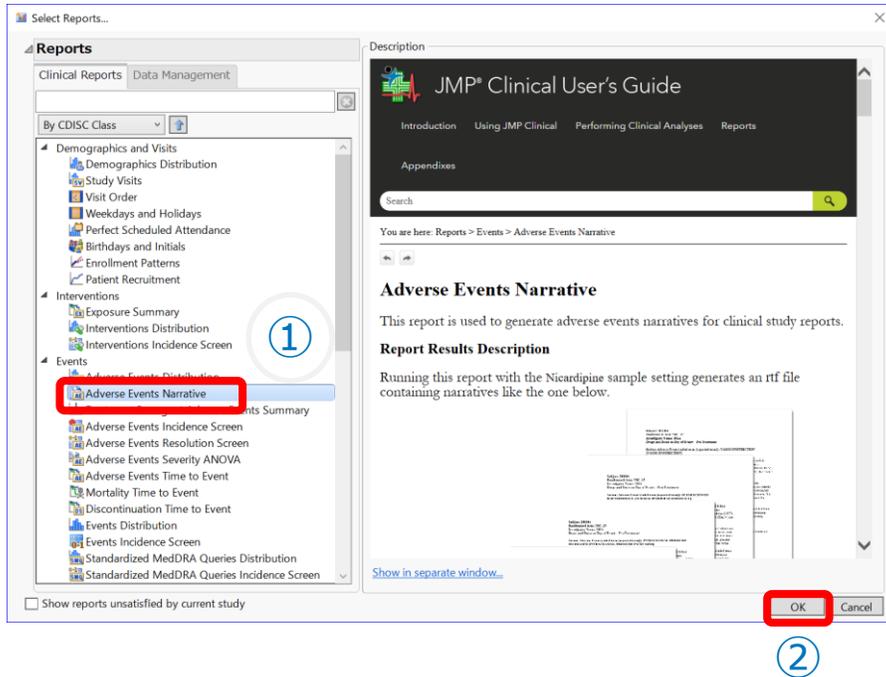
Nicardipine



JMP Clinicalユーザー以外にも共有可能

JMP Clinicalの操作

有害事象の叙述



規制当局へ提出 (ICH E3 Ch 12.3.2)

JMP Clinicalの操作

部分集団解析

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Demographics Distribution

Report Navigator: Review Subject Filter

Search for subject IDs. Use * for wildcard. Use , to separate

Subject Filter

クリア Reset ヘルプ

該当する行が578行あります。

逆にする

Study Identifier (1)
NICSAH1

18 ≤ Age ≤ 108

Sex (2)
M

Race (4)
ASIAN (14)
BLACK OR AFRICAN AMERICAN (97)
OTHER (32)
WHITE (435)

Description of Planned Arm (2)
NIC 15 (2R11)

Subject List

101001
101002
101003
101004
101005
101006
101007
101008
101009
101010
101011
101012
101013
101014
101015
101016
101017
11001
11002
11003

Demographics Distribution Results reflect Review Subject Filter selections: 578

Distribution Details

変量の分布

Age Sex Race

Age (0 25 50 75 125) 度数

Sex (M 324 F 578) 度数

Race (WHITE 435 OTHER 32 BLACK OR AFRICAN AMERICAN 97 ASIAN 14) 度数

JMP Clinicalの操作

部分集団の登録

②

部分集団の選択

Body System or Organ Class	Dictionary-Derived Term	Planned Treatment NIC .15 (N = 447)		(N = ...)		Total
		Count	%	Count	%	
METABOLISM AND NUTRITION DISORDERS	Hypematraemia	28	6.2%	17	3.7%	45
RENAL AND URINARY DISORDERS	Isosthenuria	68	15.2%	30	6.6%	98
VASCULAR DISORDERS	Hypotension	121	27.1%	65	14.3%	186
	Phlebitis	98	21.9%	23	5.1%	121

①

部分集団の登録

Create Subject Filter dialog box:
Enter Filter Name: Isosthenuria



登録済みの部分集団への絞り込み

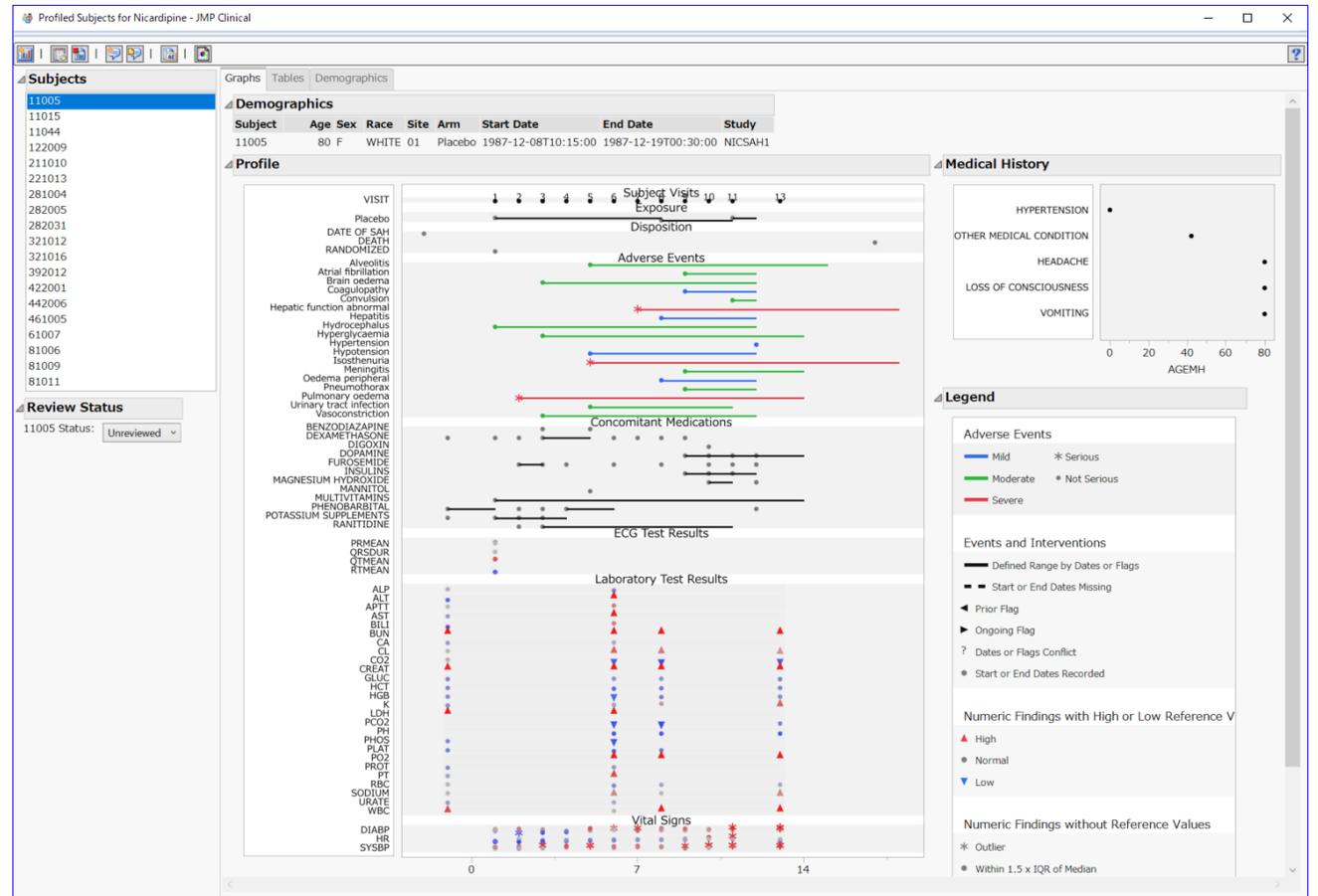
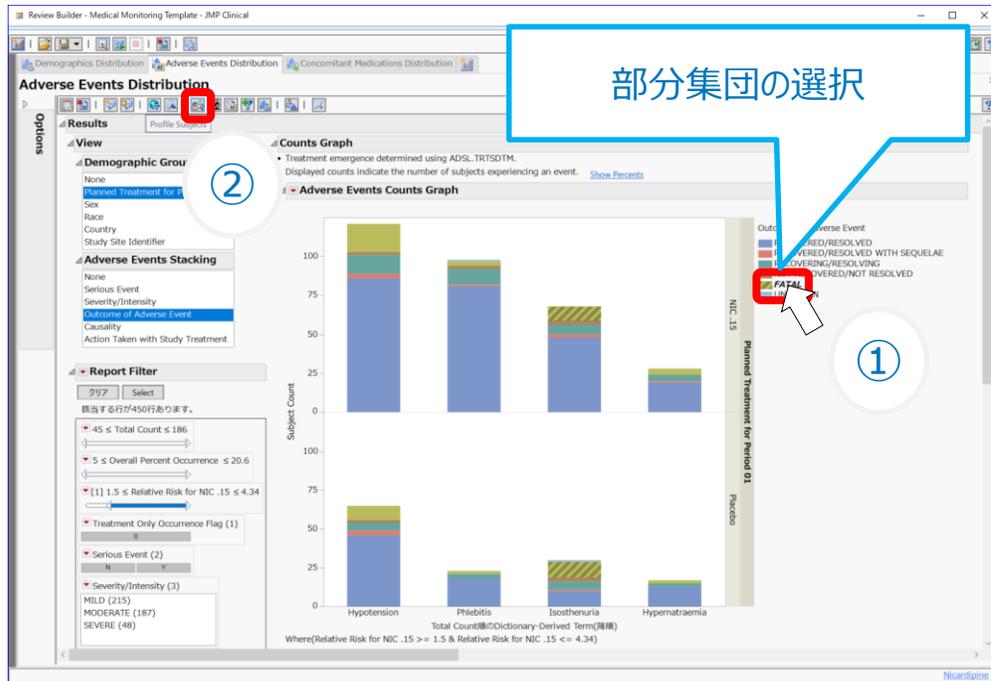
Subject Filter: Isosthenuria

Subject List: 101007, 11002, 11005, 11008, 11009, 11014, 11015, 11021, 11025, 11028, 11029, 11030, 11032, 11037, 11038, 11044, 11044, 122009, 141001, 141011, 141020, 141030, 141045, 141063, 141069, 161008, 161031, 171004, 171007, 171010, 172002, 181005, 191003, 21025, 211010

Concomitant Medications Stacking Graph: Percent Occurrence in Demographic Group vs. Medication Name

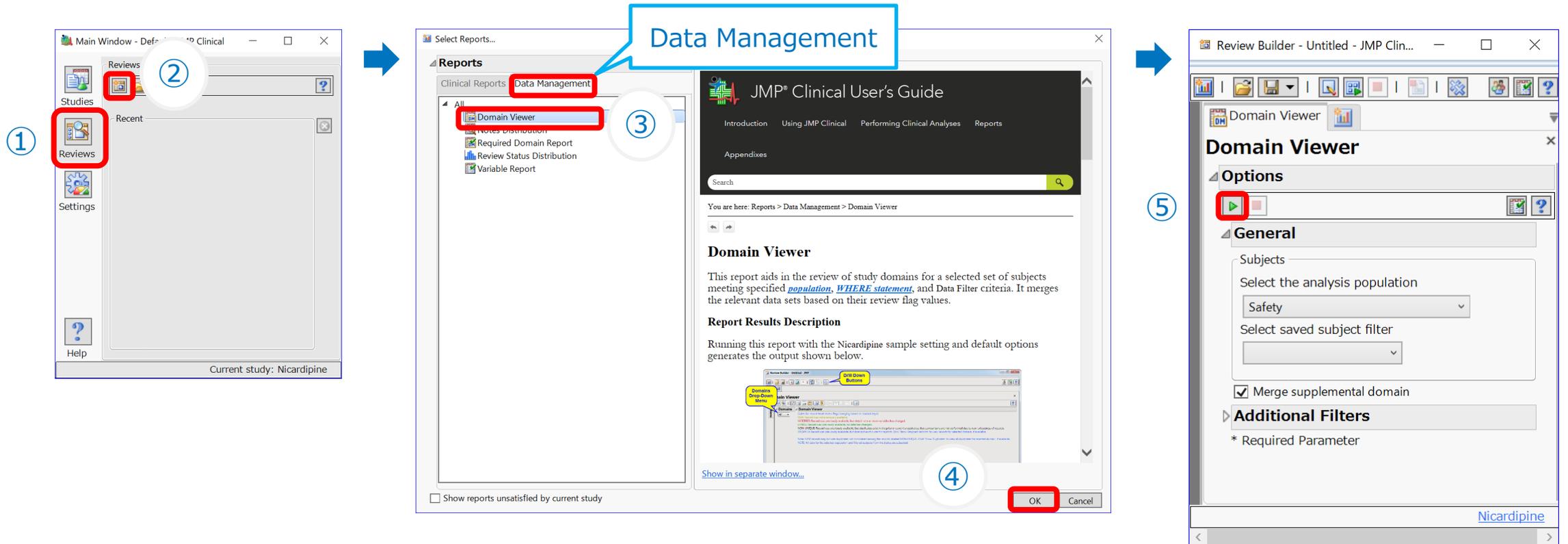
JMP Clinicalの操作

被験者プロフィール



JMP Clinicalの操作

ソースデータの確認



JMP Clinicalの操作

ソースデータの確認

重複データの確認

7

6

Options

Domains

Domain Viewer

AE

Note: The snapshot comparison has been permanently disabled for the study Nicardipine.

Study Identifier	Domain Abbreviation	Unique Subject Identifier	Sequence Number	Reported Term for the Adverse Event	Dictionary-Derived Term
1 NICSAH1	AE	101001	1	Hydrocephalus	Hydrocephalus
2 NICSAH1	AE	101001	2	Pyrexia	Pyrexia
3 NICSAH1	AE	101001	3	Vasoconstriction	Vasoconstriction
4 NICSAH1	AE	101001	4	Vomiting	Vomiting
5 NICSAH1	AE	101002	1	Alveolitis	Alveolitis
6 NICSAH1	AE	101002	2	Hydrocephalus	Hydrocephalus
7 NICSAH1	AE	101002	3	Hyperglycaemia	Hyperglycaemia
8 NICSAH1	AE	101002	4	Pulmonary oedema	Pulmonary oedema
9 NICSAH1	AE	101002	5	Urinary tract infection	Urinary tract infection
10 NICSAH1	AE	101002	6	Vasoconstriction	Vasoconstriction
11 NICSAH1	AE	101002	7	Ventricular extrasystoles	Ventricular extrasystoles
12 NICSAH1	AE	101004	1	Brain oedema	Brain oedema
13 NICSAH1	AE	101004	2	Coma	Coma
14 NICSAH1	AE	101004	3	Hydrocephalus	Hydrocephalus
15 NICSAH1	AE	101004	4	Hyperglycaemia	Hyperglycaemia
16 NICSAH1	AE	101004	5	Hypotension	Hypotension

Nicardipine

JMP Clinicalの操作

ソースデータの確認

Review Builder - Untitled - JMP Clinical

Domain Viewer

Domain Viewer

Options

AE

Codes for record-level review flags (merging based on domain keys):

- NEW: Record was not previously available.
- MODIFIED: Record was previously available, but data in one or more variables has changed.
- STABLE: Record was previously available, no data has changed.
- NON-UNIQUE: Record was previously available, but duplicates exist in the prior or current snapshot so that comparisons are not performed due to non-uniqueness of records.
- DROPPED: Record was previously available, but does not exist current snapshot. Click 'Show Dropped Records' to view records for selected domain, if available.

Note: NEW records may include duplicates not considered among the records labeled NON-UNIQUE. Click 'Show Duplicates' to view all duplicates for selected domain, if available.

NOTE: All data for the selected population and filtered subjects from the dialog are subsetted.

Study Identifier	Domain Abbreviation	Unique Subject Identifier	Sequence Number	Dictionary-Derived Term	Body System or Organ Class	Serious Event	Action Taken with Study Treatment
* 1	JMPCOnco	AE	JMPCO11-001	1 Rash	Skin and subcutaneous ...	Y	NONE
* 2	JMPCOnco	AE	JMPCO11-001	2 Pruritus	Skin and subcutaneous ...	Y	NONE
* 3	JMPCOnco	AE	JMPCO11-001	5 Anaemia	Blood and lymphatic ...	Y	NONE
* 4	JMPCOnco	AE	JMPCO11-001	7 ALT Increased	Investigations	Y	DRUG PERMANENTLY WITHDRAWN
* 5	JMPCOnco	AE	JMPCO11-001	8 AST increased	Investigations	Y	DRUG PERMANENTLY WITHDRAWN
* 6	JMPCOnco	AE	JMPCO11-001	10 Constipation	Gastrointestinal disorders	Y	NOT APPLICABLE
* 7	JMPCOnco	AE	JMPCO11-001			Y	NOT APPLICABLE
● 8	JMPCOnco	AE	JMPCO11-002			N	NONE
● 9	JMPCOnco	AE	JMPCO11-002			N	NONE
● 10	JMPCOnco	AE	JMPCO11-002			N	NONE
* 11	JMPCOnco	AE	JMPCO11-003			N	NONE
● 12	JMPCOnco	AE	JMPCO11-003			N	NONE
* 13	JMPCOnco	AE	JMPCO11-003			N	NONE
* 14	JMPCOnco	AE	JMPCO11-003	6 ALT Increased	Investigations	Y	DRUG PERMANENTLY WITHDRAWN
* 15	JMPCOnco	AE	JMPCO11-003	7 AST increased	Investigations	Y	DRUG PERMANENTLY WITHDRAWN
● 16	JMPCOnco	AE	JMPCO11-003	8 Diarrhea	Gastrointestinal disorders	N	NONE

すべての行 446
 選択されている行 0
 除外されている行 0
 表示しない行 0
 ラベルのついた行 0

Oncology Sample

データを更新した場合、更新箇所がハイライトされる

まとめ

- JMP ClinicalはCDISC準拠の試験データの解析に強みを持つ
- 2020年4月1日から医薬品の承認申請に電子データ提出が必要となった
- JMP Clinicalは臨床試験の各段階で用いることができる

JAPAN 2020

DISCOVERY
SUMMIT

ONLINE

ご清聴ありがとうございました

jmp