

The Estimands Academy for Trial Teams

Webinar 8: Making Estimands Work

Practical Approaches with Implementation in Data Standards

29th September 2026 2-3:30 pm UK /3-4:30 pm CET/9-10:30 am EST



European Federation of Statisticians in the Pharmaceutical Industry
Representing Statistical Associations in Europe



European Federation of Pharmaceutical
Industries and Associations



The Estimands Academy for Trial Teams Webinar Series

Available at (<https://www.psiweb.org/vod/Index/> and @youtube/EFPIA)

Scan QR code for the EIWG training page with all links to date
[EFSPI/EFPIA EIWG - Estimand Trainings](#)



	Webinar Title
1	PIONEERING estimands in Clinical Research
2	Estimands in Oncology - How and Why
3	Estimands from trial planning to publication in medical journals: The ETHOS trial
4	Proposing Estimands from Different Perspectives
5	Estimands framework in action, the Alzheimer's disease case
6	Applying the Estimand Framework to Clinical Pharmacology Trials with a Case Study in Bioequivalence
7	Enhancing Clinical Study Reporting with the Estimand Framework
8	Making Estimands Work - Practical Approaches with Implementation in Data Standards

Making Estimands Work

Practical Implementation in Data Standards

A collaborative webinar from



Authors of the PHUSE white paper
'Implementation of ICH E9(R1) Estimands Framework using Data Standards'

and



EFPIA/EFSPI Estimand Implementation Working Group (EIWG) Training Team



European Federation of Statisticians in the Pharmaceutical Industry
Representing Statistical Associations in Europe



European Federation of Pharmaceutical
Industries and Associations



Introductions of Chairperson, Presenters and Q&A Panelists

	Name and job title	Company
	Sue McKendrick (Chairperson) Statistical Science Director	
	Elisa Gomez Valderas (Presenter & panelist) Director, Statistics	
	Shahida Tamboli (Presenter & panelist) Senior Manager, Biostatistics	
	Xiaohan Zou (Presenter & panelist) Director, Statistical Programming	

Please type your
questions as we go in the
Q&A tab
(not the chat)



Recording link
will be added to
EIWG training page



Disclaimer

The opinions expressed in this presentation are those of the authors of the white paper and should not be construed to represent the opinions of PHUSE members, respective companies or organizations. The content in this presentation should not be interpreted as a data standard and/or information required by regulatory authorities.

All illustrative examples should not be considered as examples of how to appropriately implement the estimands framework within an individual clinical study.

Agenda

- Introduction and Data Collection & Tabulation **Xiaohan**

- | | |
|--|----------------|
| <ul style="list-style-type: none">• Analysis Data (Intercurrent event data mapping from SDTM to ADaM for implementation of strategy)• Supporting Intercurrent Event Strategies Through Analysis Data and ADRG Updates | Shahida |
|--|----------------|

- Implementation of Data Standards using a Case Study **Elisa**

- | | |
|---|------------|
| <ul style="list-style-type: none">• Q & A | All |
|---|------------|

From Estimand Concept to Implementation

Practical Approaches with Implementation in Data Standards

ICH E9 (R1) Addendum

Establishes a standard framework to link the scientific question of interest and the analysis of collected data by introducing estimands.

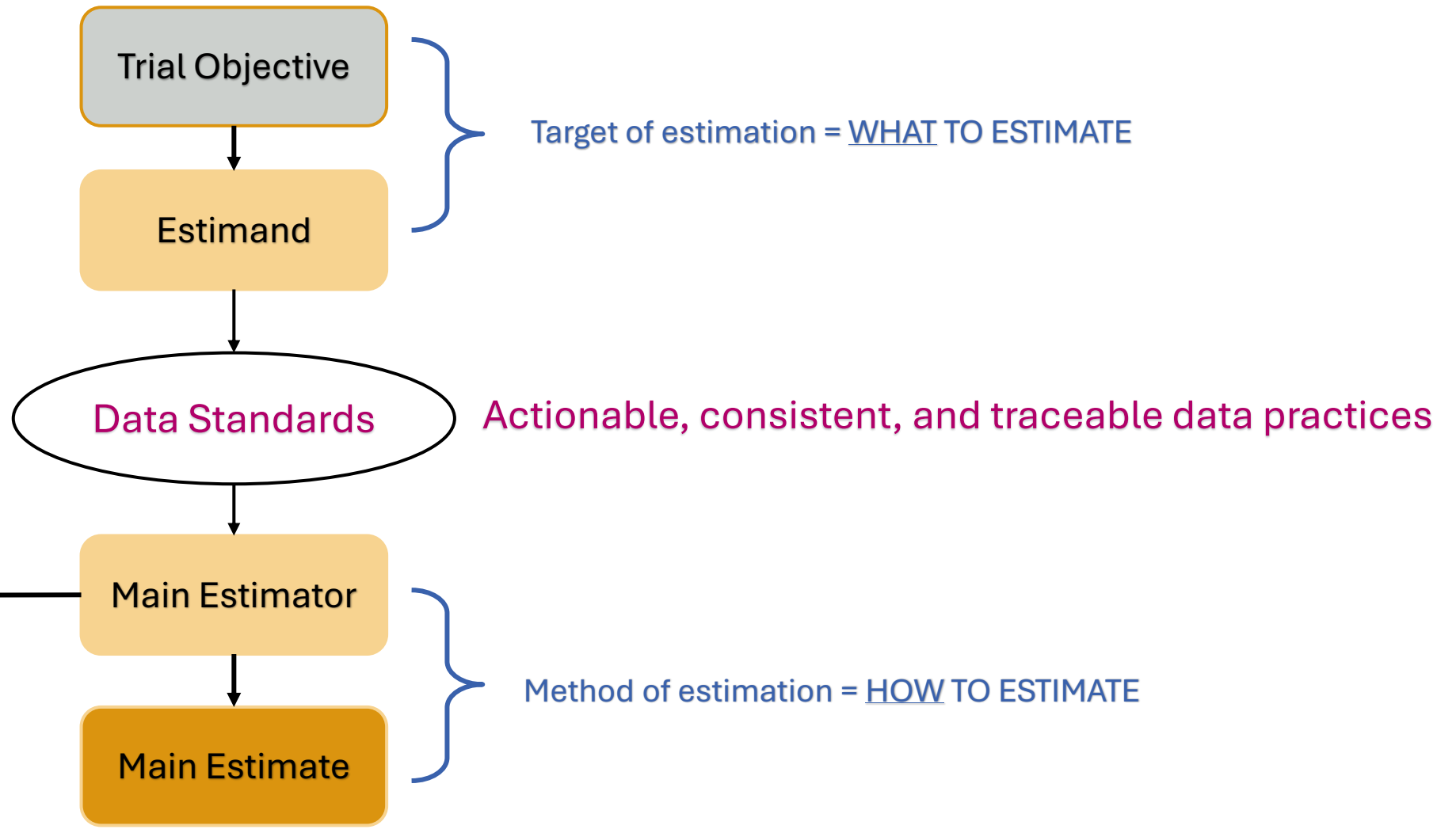
Implementation question

How do we translate the planned estimand and intercurrent event strategies into actionable, consistent, and traceable data practices?

White paper contribution

Provides practical recommendations and examples to improve consistency and alignment across Data collection, Data Tabulation, Data Analysis, and Data Reviewer's Guides.

From ICH E9(R1) Estimands Framework into Data Standards



What is the Estimand?

Estimand A precise description of the treatment effect reflecting the clinical question posed by the trial objective. It summarises at a population-level what the outcomes would be in the same patients under different treatment conditions being compared.

Estimand definition, ICH E9(R1) addendum

Estimand Attributes



Population-level summary



Treatments



Variable/Endpoint



Target population



Intercurrent events (strategies)

Estimand Attributes



Population-level summary



Treatments



Variable/Endpoint



Target population



Intercurrent events (strategies)

Case Study Example Estimand 1

What will be the difference in means between Drug X and Placebo in change from baseline after 8 weeks in the 17-item Hamilton Depression Rating Scale (HDRS) total score in patients with major depressive disorder (MDD) regardless of starting other MDD medication and treatment discontinuation due to AE or lack of efficacy (treatment policy), and in the hypothetical scenario, as if treatment discontinuation due to geopolitical reasons never happened?

Estimand Attributes



Population-level summary

What will be the difference in means

between Drug X and Placebo

in change from baseline after 8 weeks in the 17-item Hamilton Depression Rating Scale (HDRS) total score

in patients with major depressive disorder (MDD)

regardless of starting other MDD medication and treatment discontinuation due to AE or lack of efficacy (treatment policy), and in the hypothetical scenario, as if treatment discontinuation due to geopolitical reasons never happened?



Treatments



Variable/Endpoint



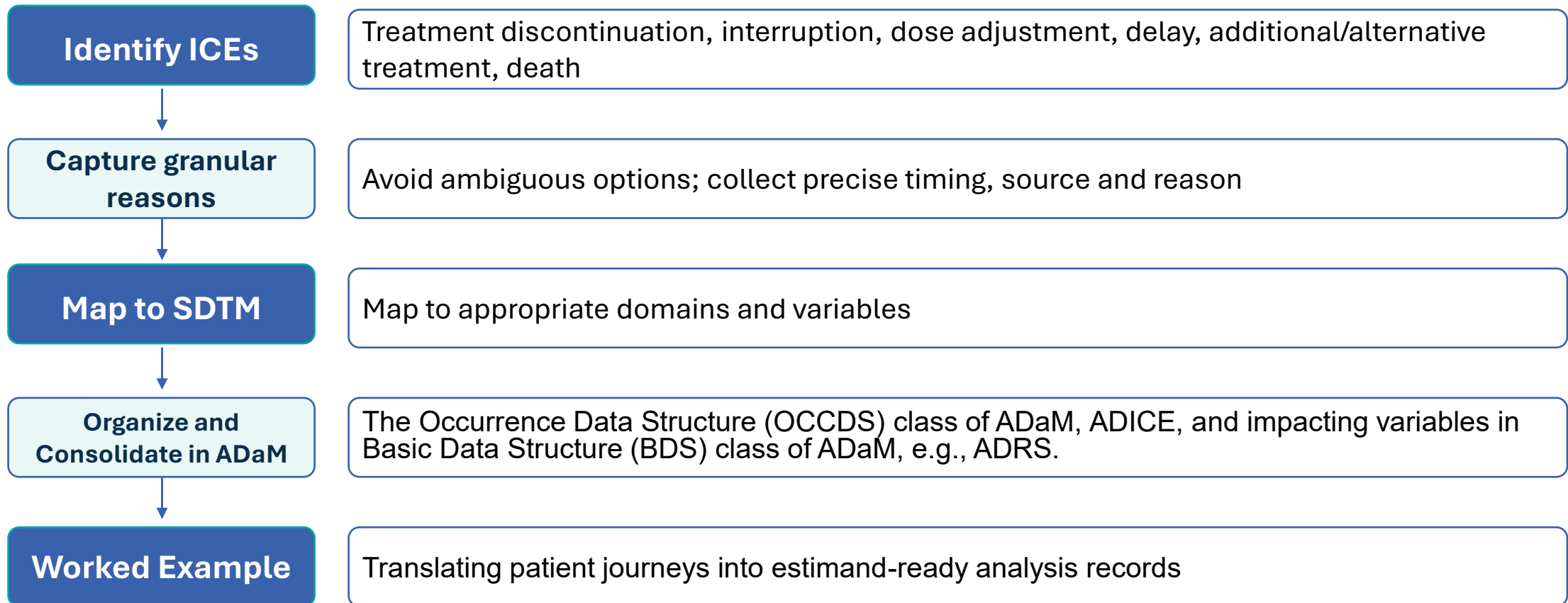
Target population



Intercurrent events (strategies)

Intercurrent Events: Identify, Capture, and Handle

Intercurrent events affect the interpretation or existence of measurements linked to the clinical question.



SDTM: Study Data Tabulation Model

ADaM: Analysis Data Model

Data Collection Enhancements

Case Report Form (CRF) should be designed to capture specific, underlying reasons for intercurrent events — replacing vague or catch-all options with granular, unambiguous categories to ensure accurate data collection for intercurrent events in support of the estimands framework.

Note: this is applied to overall data collection practices not limited to intercurrent events.

Example – The Treatment Discontinuation CRF

Document the participant's status for the treatment period. If the participant discontinued treatment prematurely, record the primary reason for discontinuation.	What was the participant's status? DS.DSDECOD DS.DSTERM	• COMPLETED • ADVERSE EVENT. LINK TO ADVERSE EVENT: _____ • APPROVED DRUG AVAILABLE FOR INDICATION • DEATH • LACK OF EFFICACY • LOGISTICAL PROBLEM ◦ CLINICAL TRIAL MATERIAL QUALITY ISSUE OR SHORTAGE ◦ DIFFICULTY TRAVELING TO SITE ◦ GEOPOLITICAL LOGISTICAL RESTRICTIONS ◦ OPERATIONAL ERROR ◦ PERSONAL/FAMILY REASONS NOT RELATED TO EFFICACY OR SAFETY OF THE STUDY INTERVENTION ◦ RELOCATION ◦ SCHEDULE CONFLICTS ◦ STUDY TERMINATION OR SITE CLOSURE ◦ UNSATISFIED WITH STUDY PROCEDURES • LOST TO FOLLOW-UP • PREGNANCY • PROGRESSIVE DISEASE • PROTOCOL DEVIATION ◦ DID NOT MEET STUDY ELIGIBILITY CRITERIA AT ENROLLMENT ◦ NONCOMPLIANCE TO STUDY INTERVENTION ◦ NONCOMPLIANCE TO STUDY PROCEDURES ◦ TOOK PROTOCOL-PROHIBITED CONCOMITANT MEDICATIONS • SUFFICIENT EFFICACY • TREATMENT EXPERIENCE CONCERNS ◦ FEAR OF NEW OR RECURRENT ADVERSE EVENTS ◦ UNSATISFIED WITH STUDY DRUG DELIVERY DEVICES/METHODS
--	--	--

- **Specificity/Granularity:** break broad categories into specific subcategories, e.g., “LOGISTICAL PROBLEM”
- **No ambiguity:** Vague options like “OTHER, Please Specify” is not recommended.
- **Reason-focused categories:** Record the actual, specific reason. Avoid categories that represent who made the decision, e.g., “SUBJECT WITHDRAWAL”, “PHYSICIAN DECISION”
- **Protocol placeholders:** Include <Protocol Specified> fields for study-specific reasons

Data Tabulation and Reviewer's Guide

- The estimands framework is not expected to change Study Data Tabulation Model (SDTM) mapping principles.
- Data collected from CRFs is mapped to the corresponding SDTM domains following the SDTM Implementation Guide (SDTMIG) and Conformance Rules.
- The details of how intercurrent events are collected and mapped to the SDTM domains and variables are explained in the Clinical Study Data Reviewer's Guide (cSDRG).
- There is no impact on the SDTM Define-XML file.

Intercurrent Events Documentation in Clinical Study Data Reviewer's Guide(cSDRG)

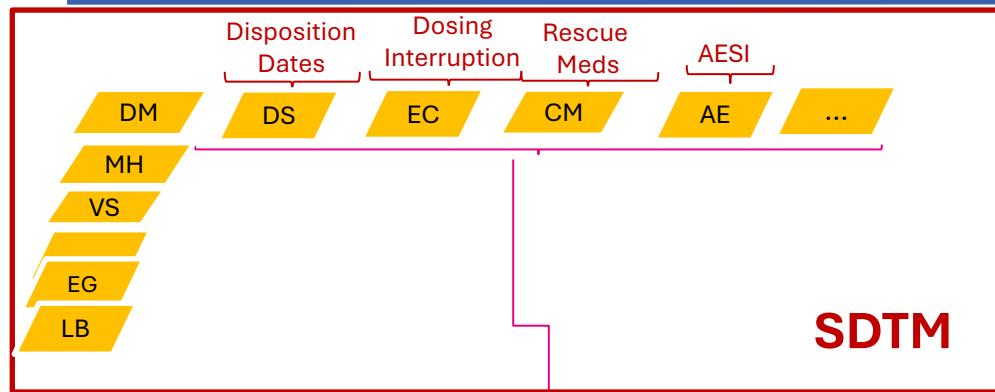
- Supports traceability and health authority review of intercurrent events in SDTM.
- Document intercurrent events in cSDRG Sections 3 and 3.1 [PHUSE cSDRG 2019].
- Describe intercurrent events and how they are collected.
- Explain how events map to SDTM domains and variables.

Were any intercurrent events collected?

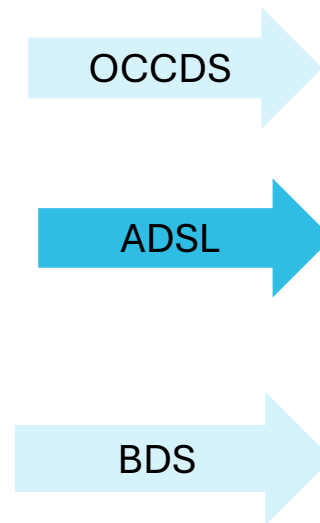
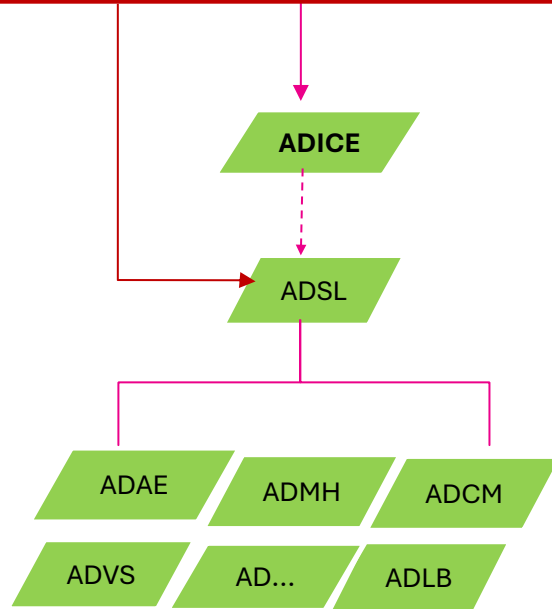
- Yes, intercurrent events were collected in this study.

Intercurrent Event collected in the study	In which CRF forms were details of intercurrent events collected?	In which SDTM domains (and variables) were intercurrent events mapped?
Treatment Discontinuation (Geopolitical Logistical Restrictions)	Trial Period Disposition (Treatment Discontinuation)	DS (DSTERM, DSDECOD, DSSTDTC)
Treatment Discontinuation (Adverse Event)	Trial Period Disposition (Treatment Discontinuation) Adverse Event	DS (DSTERM, DSDECOD, DSSTDTC) AE (AETERM, AEDECOD, AESTDTC, AEENDTC, AEENRF)
Treatment Discontinuation (Lack of Efficacy)	Trial Period Disposition (Treatment Discontinuation)	DS (DSTERM, DSDECOD, DSSTDTC)
Starting other pharmacological treatments for MDD	Concomitant Medication	CM (CMTRT, CMDECOD, CMSTDTC, CMENDTC, CMENRF) SUPPCM (QNAM, QVAL)

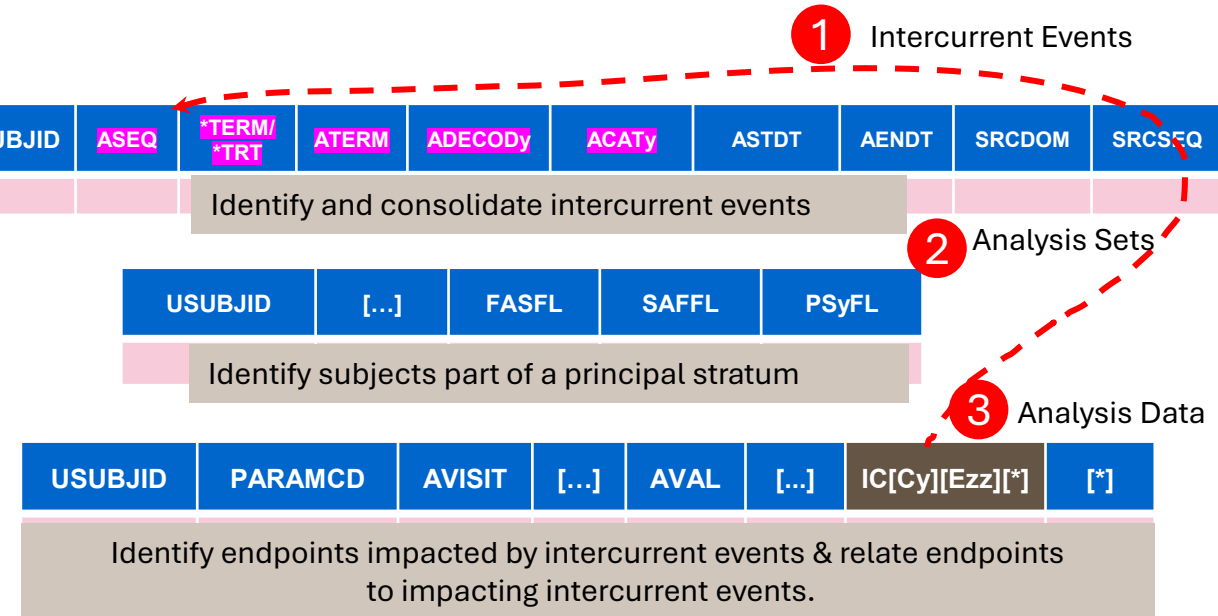
ADICE (Intercurrent Events Analysis Dataset)



ADaM



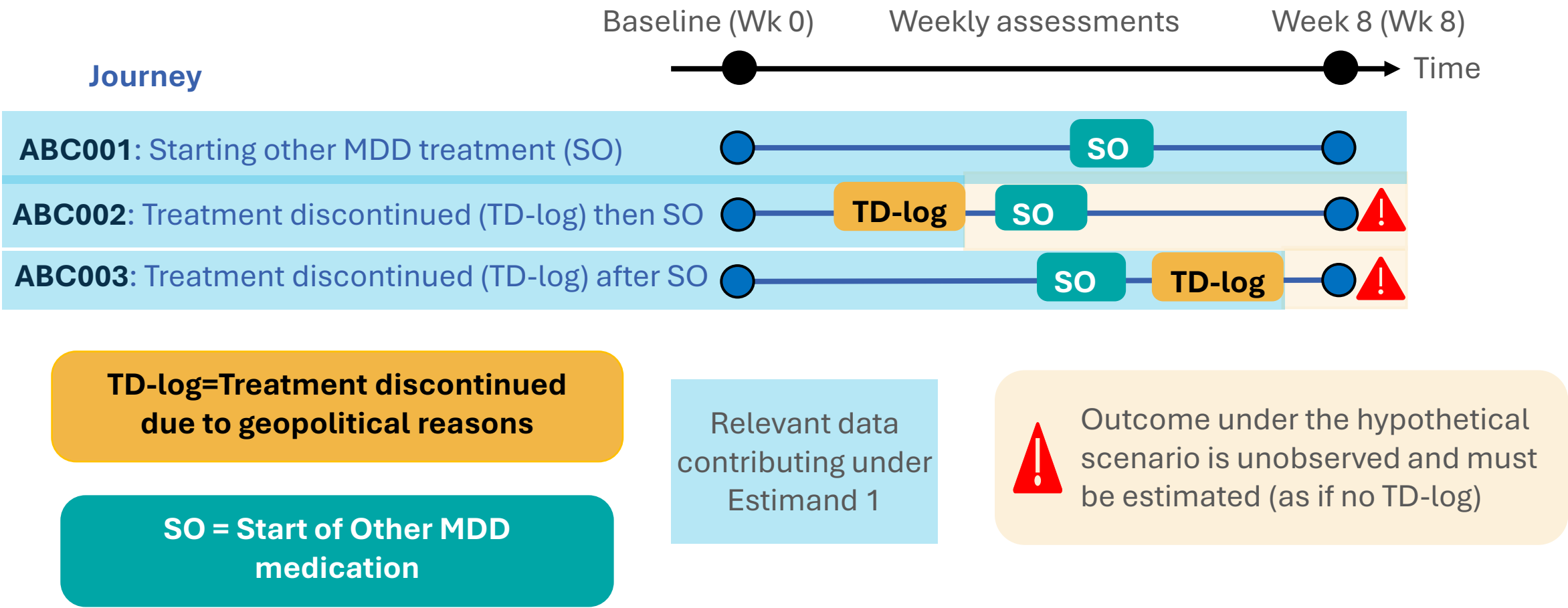
ADICE dataset is enabling Consistent Estimand Implementation Through Event-Level Traceability and Documentation (Not Estimation)



ADICE Variable list

Name	Label	Notes
USUBJID	Unique Participant Identifier	
Sequence numbers		
ASEQ		Unique number per participant, per intercurrent event
Record topic (event)		
*TERM	{Reported Term}	At least one original term variable required. (It will come from SDTM domains, like DSTERM)
*TRT	{Reported Name of Drug, Med, or Therapy}	(It will come from SDTM domains, like CMTRT, PRTRT, etc)
ATERM	Analysis Term	ATERM is specially useful when combining multiple source datasets/domains and/or having derived events.
Record start/end date and time		
ASTDT	Analysis Start Date	Start date of the intercurrent event.
ASTDTM	Analysis Start Datetime	Start datetime of the intercurrent event.
AENDT	Analysis End Date	End date of the intercurrent event
AENDTM	Analysis End Datetime	End datetime of the intercurrent event
Traceability		
--SEQ	Sequence Number	When a single domain is source of all intercurrent events.
SRCDOM	Source Data	Name of the parent dataset holding the intercurrent event (when source is a dataset or multiple domains, datasets) .
SRCSEQ	Source Sequence Number	Sequence number of the intercurrent event record in parent domain. Normally value of --SEQ or of ASEQ if the parent is another ADaM dataset.
Coding and classifications		
*DECOD	Dictionary-Derived Term	Coded term/name of the intercurrent event from the SDTM source dataset.
ADECODy	Analysis Dictionary Derived Term {y}	Coded version of the intercurrent event , at the more granular level: per protocol/SAP. Useful for reporting, summaries. Normally one variable; unless intercurrent events are named differently per estimand.
ACATy	Analysis Category {y}	Categorisation of the intercurrent events . Useful when there are different levels of granularity of intercurrent event across estimands.
Intercurrent event handling strategy		
ESTzz*STP ¹	Estimand zz* planned handling strategy	Planned strategies for handling the intercurrent events related to estimand zz*. Blank if the intercurrent event is not related to estimand zz*.
ESTzz*STA	Estimand zz* actual handling strategy	Actual strategies for handling the intercurrent events related to estimand zz*. Blank if the intercurrent event is not related to estimand zz* or if the intercurrent event handling strategy is masked by the strategy of another intercurrent event that has a higher precedence.

Participant Journey with Intercurrent events (ICEs) for Case Study Estimand 1



ADICE: Identify and consolidate intercurrent events

Standardised name of the intercurrent event, per protocol/SAP wording

Traceability to SDTM multiple domains from which intercurrent event mapped to ADICE

USUBJID	ASEQ	TRTP	ATERM	ADECOD1	ACAT1	ASTDT	AENDT	SRCDOM	SRCSEQ	EST01STP	EST01STA
ABC001	1	Drug X	DULOXETINE	Starting other pharmacological treatments	Starting other pharmacological treatments	20-04-2022		CM	1	TREATMENT POLICY	TREATMENT POLICY
ABC002	1	Placebo	LOGISTICAL PROBLEM	Treatment discontinuation due to a geopolitical logistical restriction	Treatment discontinuation due to a geopolitical logistical restriction	30-03-2022		DS	3	HYPOTHETICAL	HYPOTHETICAL
ABC002	2	Placebo	FLUOXETINE	Starting other pharmacological treatments	Starting other pharmacological treatments	03-04-2022		CM	1	TREATMENT POLICY	
ABC003	1	Drug X	LORAZEPAM	Starting other pharmacological treatments	Starting other pharmacological treatments	06-04-2022		CM	1	TREATMENT POLICY	TREATMENT POLICY
ABC003	2	Drug X	LOGISTICAL PROBLEM	Treatment discontinuation due to a geopolitical logistical restriction	Treatment discontinuation due to a geopolitical logistical restriction	27-04-2022		DS	3	HYPOTHETICAL	HYPOTHETICAL

Unique sequence number of the event within a subject

Categorisation of intercurrent event (grouping), considering data preparation/analysis needs

Records the final estimand handling strategy after applying sponsor-defined priority rules.

Identifying Endpoint Records Impacted by intercurrent events

A practical framework for identifying endpoint records impacted by intercurrent events

Approach	Identification Basis	Multiple ICEs per Endpoint	Granularity	Estimand Specific?	Key Advantage / Use Case
1. Per ICE category	Selected ADICE categorization variable	Yes (one ICE per category)	Determined by the selected ADICE categorization variable	No	Provides a consistent ICE categorization framework across all estimands
2. Per ICE category, per Estimand	Estimand-specific categorization and impact rule	Yes (one ICE per category within each estimand)	Determined by the estimand-specific categorization variable	Yes	Supports different ICE categorizations and impact rules for different estimands
3. Per Estimand	Direct estimand-level identification	No (maximum one ICE per estimand)	Determined at the estimand level	Yes	Simplest implementation; appropriate when a single ICE can be assigned per estimand

Selection principle: Choose the method according to whether the impact rule is shared across estimands, varies by estimand, or requires one prioritized event.

Impact Variables for Different Approaches used in analysis datasets

Approach	Primary Variables	Purpose
Approach 1 Per ICE Categorization Level	ICCyS ICCyF	Identifies and flags endpoint impacts for each ICE categorization value.
Approach 2 Per ICE Categorization Level, per Estimand	ICCyEzzS ICCyEzzF	Identifies and flags endpoint impacts by ICE categorization value within each estimand.
Approach 3 Per Estimand	ICEzzS ICEzzF	Identifies and flags the single prioritized ICE impacting an endpoint for an estimand.

- Index y represent the yth modality of the naming / categorisation variable in the intercurrent event dataset (ADICE).
- One **ICCyS**, **ICCyF**, or **ICCyN** variable may be created for each categorization value.
- For example, if **ADICE.ADECOD1** contains *Treatment Discontinuation*, *Rescue Medication*, and *Death*, the corresponding variables could be **ICC1S**, **ICC2S**, and **ICC3S**.

[\[PDF\]](#)

Analysis datasets – Impact Variables Example details *per intercurrent event categorisation*

ADICE

USUBJID	ASEQ	ATERM	ADECOD1	ACAT1	ASTDT
ABC003	1	ANTIDEPRESSANTS	Starting other pharmacological treatments	Starting other pharmacological treatments 	2022-04-06
ABC003	2	LACK OF EFFICACY	Treatment discontinuation due to lack of efficacy	Treatment discontinuation 	2022-04-27

ADRS

USUBJID	PARAMCD	ADT	AVISIT	AVAL	BASE	CHG	ICC1S	ICC2S	ICCDOM	ICCVAR	ICC1F	ICC2F	ICC1N	ICC2N
ABC003	HAMD118	2022-03-16	BASELINE	26	26				ADICE	ASEQ				
ABC003	HAMD118	2022-03-23	WEEK 1	21	26	-5			ADICE	ASEQ				
ABC003	HAMD118	2022-03-30	WEEK 2	19	26	-7			ADICE	ASEQ				
ABC003	HAMD118	2022-04-06	WEEK 3	16	26	-10			ADICE	ASEQ				
ABC003	HAMD118	2022-04-13	WEEK 4	19	26	-7	1		ADICE	ASEQ	Y		1	
ABC003	HAMD118	2022-04-20	WEEK 5	15	26	-11	1		ADICE	ASEQ	Y		1	
ABC003	HAMD118	2022-04-27	WEEK 6	21	26	-5	1		ADICE	ASEQ	Y		1	
ABC003	HAMD118	2022-05-04	WEEK 7	18	26	-8	1	2	ADICE	ASEQ	Y	Y	1	1
ABC003	HAMD118	2022-05-25	WEEK 8	16	26	-10	1	2	ADICE	ASEQ	Y	Y	1	1

Source Domain &
Source variable

Document potential impact on data point of all intercurrent events, based on ACAT1 categorization
ICC1*=Start Other Medication for MDD (SO),
ICC2* = Treatment Discontinuation (TD-LoE)

Only flag if the datapoint is impacted.

ADICE Documentation in Analysis Data Reviewers Guide (ADRG)

Section: 3.1 Estimands and Estimators : synthetic view of estimands and estimators implementation in one place

Estimand / Estimator ID	Descriptor	Description
1.1: Main estimator	Reference	Protocol Reference: see section 9.3.2.2 SAP reference: see section 1.1, 4.2.2.
	Analysis dataset	Analysis records: ICE01F <> "Y" and ANL01FL = "Y"
	Analysis description	Analysis method: Mixed Effects Repeated Measures Model (MMRM): CHG ~ BASE TRT01PN AVISIT TRT01PN*AVISIT, with measure repeated on USUBJID over AVISIT. Treatment effect estimated through Least Square Mean difference on TRT01PN*AVISIT Analysis details: Please refer SAP Table 8.x.x.x
	Results	Table: Please refer CSR Table 8.x.x.x

Updated Section: 5.1 Overview: summary question on estimands

- Were there any analysis datasets created to support ICH (E9) R1 estimands framework? <Yes/No>
(if Yes, answer the following questions)
 - What dataset(s) is/are used for storing the intercurrent events?
 - <insert additional text here>
 - What datasets and variables are used to support estimands analyses?
 - <insert additional text here>

ADRG/Define .xml

Updated Section 5.2 Analysis Datasets: describe intercurrent dataset(s) ADICE structure and any datasets with datapoints affected by intercurrent events as necessary. (e.g. records selection/replacements per handling strategies).

	Class	Efficacy	Safety	Baseline or other subject characteristics	PK/PD	Primary Objective	Structure
ADSL Subject Level Analysis Dataset	ADSL			X			One observation per subject
ADICE Intercurrent Events Analysis Dataset	OCCDS	X					One observation per subject per intercurrent event
ADHDRS Hamilton Depression Scale Analysis dataset	BDS	X				X	One observation per subject per subject, per parameter, per analysis visit
.....							

Worked Example: Applying Estimand Strategies to Trial Data

A step-by-step walkthrough adapted from the PHUSE WP illustrative example, translating patient journeys into estimand-ready analysis records.

THE SCENARIO

A placebo-controlled trial of drug X in major depressive disorder (MDD). The outcome is change from baseline to Week 8 in the 17-item Hamilton Depression Rating Scale (HDRS) total score.

TWO ESTIMANDS

Two clinical questions are asked in the trial— each needs its own set of intercurrent-event strategies, later captured as ADICE’s EST01 and EST02 variables.

THREE ICES

Starting other MDD treatment (SO), treatment discontinuation due to AE/lack of efficacy (TD-AE/LoE), and treatment discontinuation due to a geopolitical logistical restriction (TD-log).

FIVE PARTICIPANTS

ABC001–ABC005 each experience a different mix of these events — five small case studies in how strategy choice shapes the analysis dataset.



Case Study has Two Estimands – Same data; Two Questions.

We Need to Support Both

Example Estimand 1

In patients with major depressive disorder (MDD), what is the difference in means between Drug X and Placebo in

change from baseline after 8 weeks in the 17-item Hamilton Depression Rating Scale (HDRS) total score,

regardless of starting other MDD medication (SO) and treatment discontinuation due to AE or lack of efficacy, and

as if treatment discontinuation due to logistics reasons never happened?

SO and TD-AE/LoE → treatment policy;
TD-log → hypothetical

Example Estimand 2

In patients with major depressive disorder (MDD), what is the difference in success rates between Drug X and Placebo

where success is defined as 1) having a change from baseline of at least x in HDRS after 8 weeks of treatment,

2) with no initiation of other MDD medication, and
3) no treatment discontinuation due to AE/lack of efficacy, and

as if treatment discontinuation due to logistic reasons never happened?

SO and TD-AE/LoE → composite (treatment failure); TD-log → hypothetical

Five Participants, Five Journeys

Data as collected — before any estimand strategy is applied. Adapted from the trial’s five illustrative participant journeys.

Participant	Wk 0	Wk 1	Wk 2	Unsch 2.1	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8
ABC001	R/TI						SO			
ABC002	R/TI		TD-log	SO						
ABC003	R/TI				SO			TD-log		
ABC004	R/TI						TD-AE		SO	
ABC005	R/TI					TD-LoE				

All outcomes are collected through Week 8 for every participant in this simplified illustration — no missing data, no study withdrawals.

R/TI: Randomization/
Treatment Initiation

SO = Start of Other MDD medication

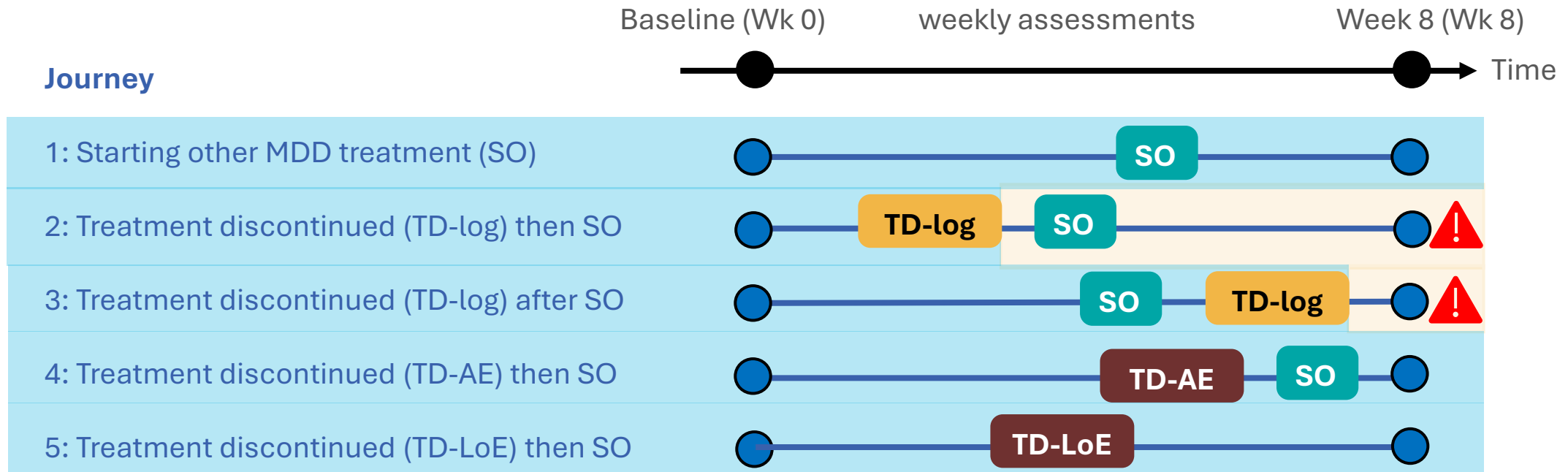
TD-log=Treatment discontinued due to
geopolitical logistic reasons

TD-AE/ TD-LoE =Treatment
discontinued due to adverse event/
loss of efficacy

Priority Rules for Competing Intercurrent Events

- ◆ When 2 or more intercurrent events occur for the same participant, it is crucial to pre-specify what intercurrent events has priority over the others
- ◆ Participant ABC002, ABC003 and ABC004 are in this scenario.
- ◆ In this example:
 - **For Estimand1: Treatment discontinuation due to logistic reasons (TD-log) takes priority once it occurs** – Hypothetical Strategy
 - **For Estimand2: The intercurrent event that occurs first takes priority** (i.e. if SO occurs first, treatment failure is concluded regardless of TD-log at a latter time) – Composite or Hypothetical Strategy – Depending on chronological order.

Which Data are Relevant for Estimating Estimand 1?

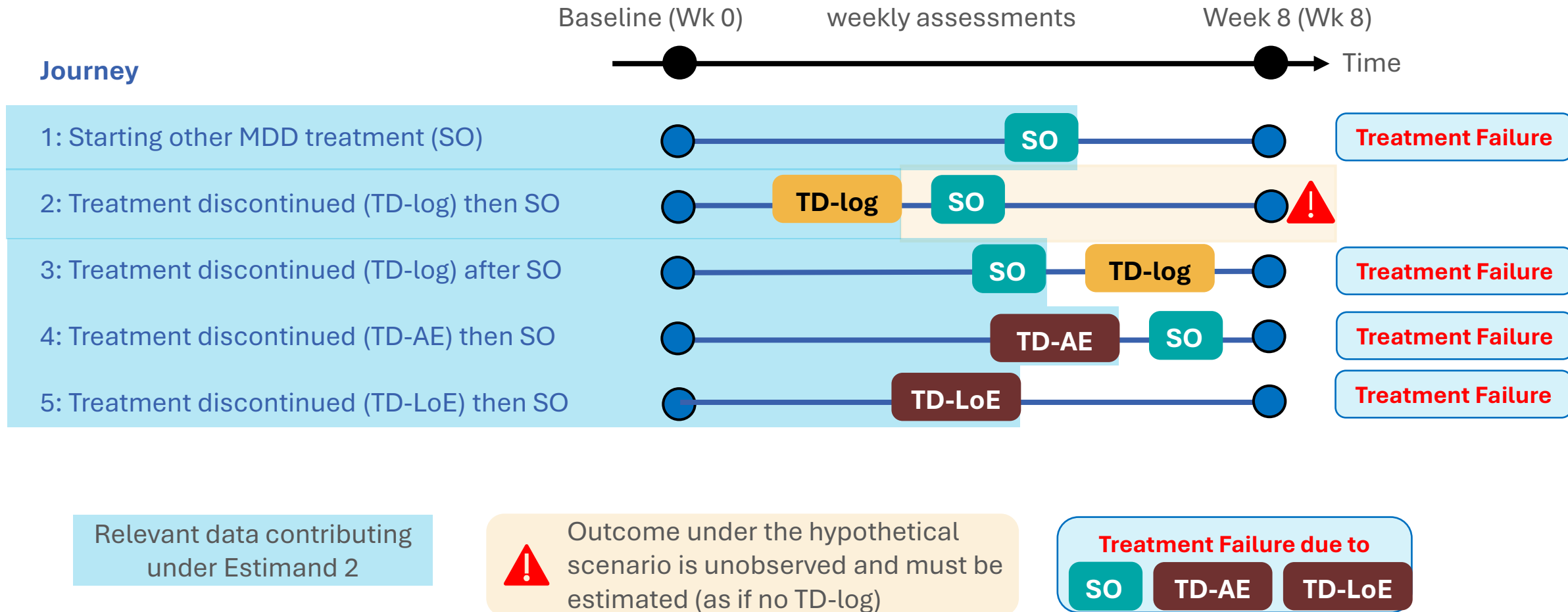


Relevant data contributing
under Estimand 1



Outcome under the hypothetical
scenario is unobserved and must be
estimated (as if no TD-log)

Which Data are Relevant for Estimating Estimand 2?



Applying Priority Rules to the Planned and Actual Strategies

When events compete, pre-specified priority rules decide which strategy actually applies.

Estimand 1 for
ABC003

Randomised at Week 0. Starts a second MDD treatment (SO) at Week 3.
Discontinues for a geopolitical logistical restriction (TD·log) at Week 6.



Hypothetical strategy, once triggered, takes priority for everything after it — that is the difference between planned and actual strategy.

PLANNED
(EST01STP)

SO → Treatment policy · TD·log → Hypothetical — assigned per protocol.

ACTUAL
(EST01STA)

SO → Treatment policy · TD·log → Hypothetical from Week 6 onward — the priority rule is now applied.

Reminder: For an ICE that is considered for a specific estimand,

planned strategy = the strategy that applies to the ICE prior to applying any priority rules (i.e. if no other ICEs occurred for that participant)

actual strategy = 'Blank' (if the planned strategy is masked by the strategy of another intercurrent event that has higher priority) or 'planned strategy' (if after applying priority rules, same strategy applies).

From Patient Journeys to ADICE Records

ABC001 and ABC003’s events, consolidated into the intercurrent-events dataset introduced earlier.

USUBJID	ASEQ	Event	Category	Estimand 1: planned → actual	Estimand 2: planned → actual
ABC001	1	SO · Wk 5	Starting other MDD treatment	Treatment policy → Treatment policy	Composite → Composite
ABC003	1	SO · Wk 3	Starting other MDD treatment	Treatment policy → Treatment policy	Composite → Composite
ABC003	2	TD·log · Wk 6	TD – logistic reasons	Hypothetical → Hypothetical	Hypothetical →

ASEQ, ATERM / ADECOD1 / ACAT1, EST0zSTP / EST0zSTA and SRCDOM are the ADICE variables introduced earlier — here populated for three real events from the worked example.

ASEQ is unique within a participant. In this example, ASEQ is assigned chronologically

EST0zSTA starts as a copy of EST0zSTP and is blanked only when a preceding event of higher precedence masks it.

ADICE Records for the Remaining Three Participants

ABC002, ABC004 and ABC005's events, extending the consolidated intercurrent-events dataset shown earlier.

USUBJID	ASEQ	Event	Category	Estimand 1: planned → actual	Estimand 2: planned → actual
ABC002	1	TD- log · Wk 2	TD – logistic reasons	Hypothetical → Hypothetical	Hypothetical → Hypothetical
ABC002	2	FLUOXETINE (SO) · Wk 2.1	Starting other MDD treatment	Treatment policy →	Composite →
ABC004	1	TD-AE · Wk 5	Treatment discontinuation due to AE/LoE	Treatment policy → Treatment policy	Composite → Composite
ABC004	2	FLUOXETINE (SO) · Wk 7	Starting other MDD treatment	Treatment policy → Treatment policy	Composite → Composite
ABC005	1	TD-LoE · Wk 4	Treatment discontinuation due to AE/LoE	Treatment policy → Treatment policy	Composite → Composite

Unlike ABC001/ABC003, ABC002's second event is blank: its earlier TD·G event carries Hypothetical with priority, so EST01STA stays blank rather than Treatment Policy.

ADHDRS Impact Variables for ABC002 and ABC003

The same two events in opposite order. Estimand1 is illustrated

ABC002 — TD·log (Visit 2), then SO (Visit 2.1)

AVISIT	AVAL	SO_E01F	TD-log_E01F	ICE01F	SO_E01S	TD-log_E01S	ICE01S
Wk 0 (BL)	31						
Wk 2	30						
Unsch 2.1	16		Y	Y		1	1
Wk 3	30	Y	Y	Y	2	1	1
Wk 6	34	Y	Y	Y	2	1	1
Wk 8 (FU)	28	Y	Y	Y	2	1	1

- In this example:
 - ICC1E01 = SO_E01
 - ICC2E01 = TD-log_E01
- Each ICC1E01F / ICC2E01F flags “Y” once an event of that modality impacts the datapoint, independent of the handling strategy.
- Priority then resolves the single pointer: for ABC002 the hypothetical TD·log occurs first and it has priority once it happens: therefore ICE01S = 1 throughout.

ADHDRS Impact Variables for ABC002 and ABC003

The same two events in opposite order. Estimand1 is illustrated

ABC002 — TD·log (Visit 2), then SO (Visit 2.1)

AVISIT	AVAL	SO_E01F	TD-log _E01F	ICE01F	SO_E01S	TD-log _E01S	ICE01S
Wk 0 (BL)	31						
Wk 2	30						
Unsch 2.1	16		Y	Y		1	1
Wk 3	30	Y	Y	Y	2	1	1
Wk 6	34	Y	Y	Y	2	1	1
Wk 8 (FU)	28	Y	Y	Y	2	1	1

ABC003 — SO (Week 3), then TD-log (Week 6)

AVISIT	AVAL	SO_E01F	TD-log _E01F	ICE01F	SO_E01S	TD-log _E01S	ICE01S
Wk 0 (BL)	26						
Wk 2	16						
Wk 3	19						
Wk 6	21	Y		Y	1		1
Wk 7	18	Y	Y	Y	1	2	2
Wk 8 (FU)	16	Y	Y	Y	1	2	2

For ABC003 the SO event leads until Wk 7, when TD·log takes precedence and ICE01S moves to 2

When to Reach for Estimand-Specific ICE Strategies

A quick gut-check for when the full planned-vs-actual, per-estimand strategy machinery is worth the effort.

MULTIPLE ESTIMANDS

The same intercurrent events need different strategies depending on which clinical question is being answered (EST01 vs EST02).

COMPETING EVENTS

Two or more intercurrent events can occur on the same participant — pre-specified priority rules decide which strategy actually applies.

REVIEWER TRACEABILITY

A consolidated ICE dataset gives reviewers one place to see why a datapoint was used, replaced or excluded.

SIMPLE DESIGNS

One estimand, one ICE, one straightforward strategy? A single impact flag may be enough — save ADICE's full structure for when complexity earns it.

Common Pitfalls

Where estimand-specific ICE handling most often goes wrong in practice.

- 1 Confusing planned strategy (EST0zSTP) with actual strategy (EST0zSTA) once priority rules apply.
- 2 Leaving priority rules undocumented, so nobody can resolve two competing events on one participant.
- 3 Applying one strategy to every estimand — the same intercurrent event can rightly differ by estimand.
- 4 Losing the trace back to source DS/CM/AE records, so reviewers can't see why data was excluded.
- 5 Treating "data not used" as "data not worth collecting" — it may matter for another estimand.

**Pitfalls mostly come from skipping the plan → priority → trace chain
— not from the strategies themselves.**

Acknowledgements

Our sincere thanks to:

- AbbVie - Lauren Shinaberry
- Amgen - Matt Baldwin
- Bayer - Banoo Madhanagopal, Jonathan Siegel, Mindy Mo, Oliver Wirtz
- Biogen - Marian Mitroiu
- Bristol Myers Squibb - Xiaohan Zou
- Eli Lilly - Elisa Gomez, Yongming Qu, Zongjun Zhang, Robin White
- Gilead - Dong Xi
- Johnson & Johnson - Lori Van Meter, Alexandra Cochinaire, Nilani Liyanage, Rosanne Lane, Chris Price
- Merck Group - Cedric Davister
- Novartis - Elena Polverejan, Samson Ghebremariam
- Novo Nordisk - Sujitha Susan John

Q&A

Please use the Q&A feature in Zoom for your questions and comments

The Estimands Academy for Trial Teams

Next webinar: Aligning Estimation with the Clinical Question of Interest – 23 Nov 2026

Making Estimands Work Practical Approaches with Implementation in Data Standards

Chairperson: Sue McKendrick (PPD, part of Thermo Fisher Scientific)

Panel

- Elisa Gomez Valderas (Lilly)
- Shahida Tamboli (Fortrea)
- Xiaohan Zou (BMS)



Thank you

The Estimands Academy for Trial Teams

“Making Estimands Work: Practical Approaches with Implementation in Data Standards ”