PPD™ EVIDERA™ PATIENT-CENTERED RESEARCH

Estimands for COA Endpoints

The question we help teams answer

What treatment effect are we trying to estimate, and do our endpoint, data-collection, and analysis choices support it?

Practical training and study-specific workshops that turn ICH E9(R1) into clear decisions for study design, data collection, analysis, and interpretation.

What is an estimand?

A precise description of the treatment effect a clinical trial is designed to estimate.

For clinical outcome assessment/patient-reported outcome (COA/PRO) endpoints, estimand choices can determine what data are needed, how intercurrent events and missing data are handled, and whether the final analysis answers the intended clinical question.

The estimand framework–in one picture

Research question	Define the estimand	Design
	The five attributes	Data collection
	Population	Analysis
	Treatment	Interpretation
	Endpoint	
	Intercurrent events	
	Population level summary	

One endpoint. Different questions. Different intercurrent events. Different estimands.

Intercurrent events*	Treatment discontinuation	Rescue medication	Treatment switching	Disease progression	Death
Whether or not the event occurs	Had the event not occurred	Up to the event	Should the event be part of the endpoint	Effect in subgroup defined by potential event status	
Treatment policy Estimate the treatment effect regardless of the event, using post-event outcomes consistent with that objective.	**Hypothetical** Estimate the treatment effect in the absence of the intercurrent event.	**While on treatment** Focus on outcomes observed before the intercurrent event.	**Composite** Incorporate the intercurrent event into the endpoint definition.	**Principal stratum** Estimate the treatment effect in a subgroup defined by whether the intercurrent event would occur under one or more treatment conditions.	

*Intercurrent events are events occurring after treatment initiation that affect the interpretation or existence of measurements relevant to the clinical question.

After this session, your team will be able to:

1. **Understand ICH E9(R1) and define all five estimand attributes**
   Why ICH E9(R1) matters; how to connect the five estimand attributes to the research question
2. **Select and justify intercurrent-event strategies**
   Treatment policy, composite, hypothetical, while on treatment and principal stratum with practical COA/PRO examples.
3. **Determine which pre and postevent data are needed**
   How estimand choices influence what should be collected before and after discontinuation, progression, switching, or other events.
4. **Interpret and handle missing data**
   Distinguish meaningful missing data from data not required for the estimand and understand the implications for assumptions and analysis.
5. **Align estimator, sensitivity analyses, and supplementary analyses**
   Connect the estimand to the main estimator, sensitivity analyses, and supplementary analyses.
6. **Translate decisions into protocol and COA/PRO SAP language**
   See how estimands are operationalised in protocols and COA/PRO statistical analysis plans (SAPs), and work through realistic study decisions.

Start the conversation. Email **Shien.Guo@thermofisher.com.**

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Estimands for COA Endpoints

Flexible training and workshop formats

	Estimand essentials	Tailored training	Applied workshop
Focus	60–90-minute foundation in ICH E9(R1), estimand attributes, and COA/PRO implications.	Core content customised to your therapeutic area, endpoints, development stage, and likely intercurrent events.	Interactive working session using your study or program to explore estimands and downstream implications.
Best for	Cross-functional teams seeking a common language and practical foundation.	Teams preparing to apply the framework in a specific clinical context.	Programmes approaching protocol, endpoint-strategy, or SAP decisions.
Output	Shared understanding of the framework and its practical implications.	Programme-relevant examples, discussion, and areas requiring alignment.	A structured working session that surfaces decisions, risks, and follow-on needs.

Protocol planning	Complex ICEs	Team alignment	SAP development
before design decisions are locked	discontinuation, rescue, switching, progression, death	clinical, COA, statistics, and regulatory	when estimands must be operationalised

Why Evidera Patient-Centered Research?

Applied expertise at the intersection of estimands, COA/PRO strategy and quantitative analysis



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Published application—not just theory

In the Phase III PhALLCON trial, comparative PRO analyses were conducted according to ICH E9(R1), with four estimands evaluated. Evidera experts were coauthors on the peer-reviewed publication.

Ashaye A, Shi L, et al., Guo S. Leukemia. 2025;39:1342-1350.

Beyond training:

- Estimand development
- COA endpoint strategy
- Protocol review
- PRO SAP development
- Missing-data and sensitivity-analysis strategy
- Regulatory support

Peer-reviewed application | COA/PRO SAP Experience | Cross-functional training

From training to application

A practical entry point for aligning teams early, and identifying where deeper strategic or quantitative support is needed.

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