Design and Operational Considerations for Hybrid Retrospective-Prospective Studies

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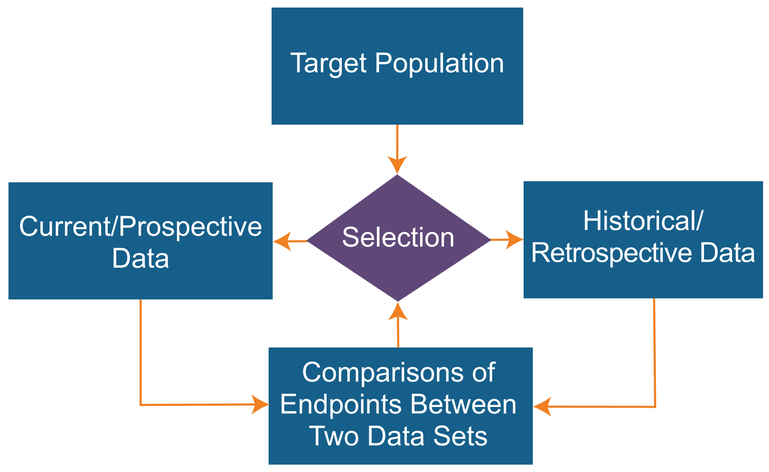
MOTIVATION

- Although randomized, controlled clinical trials remain the gold standard for assessing the efficacy of pharmaceuticals, biologics, and medical devices, they are inadequate for addressing questions about the long-term effectiveness and safety of these interventions.
- Today, as payers and other stakeholders expect interventions to be safe and effective as well as provide good value for money, the focus is increasingly on how these interventions perform in the "real world" and whether or not they add value to the healthcare system.
- Real World Evidence (RWE)-based approaches are increasingly becoming the "new normal"—practical and necessary for bringing a product to market, ensuring its relevance in clinical practice, and sustaining its value throughout the lifecycle of the product. However, RWE studies bring with them their own special considerations, including study design, analytical approaches, and sources and quality of data.
- A part of RWE that remains to be fully explored is the hybrid study, which merges retrospective and prospective data to save time and money in evaluation and assessment of investigational as well as marketed pharmaceuticals, biologics, and medical devices.

OVERVIEW



PROCESS

Data Selection and Capture
Efficacy/Effectiveness
Resource Utilization
Costs/Claims
PROs/Utilities
Safety?

Analysis
Individual Data Sets
Pooled Data Sets

Database Merging
Size
Format

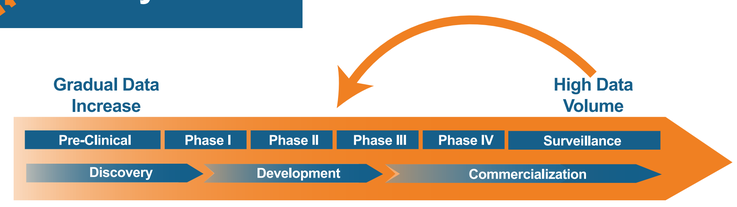
HYBRID STUDY DESIGN

Formulate Hybrid Study Design

Study Design
Every endpoint must be supported

Data Collection
Feasibility, avoiding superfluous data collection

Target Data Management and Analysis



DATA FEEDBACK LOOP IN HYBRID STUDY DESIGNS

CONSIDERATIONS

Logistics
Start-Up
Ongoing
Regulatory

Data Management
Single-use vs. multi-use datasets
One-time vs. multi-year analysis
Quality of data:
Availability
Consistency
Validity

Analytics
Type of analysis
Research objectives
Restrospective vs. Prospective data

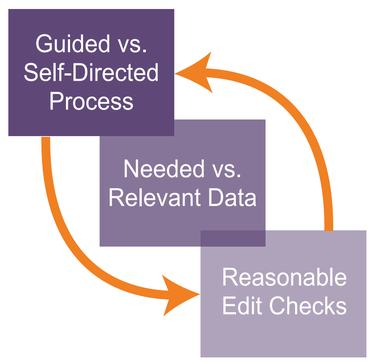
Merging Data From Multiple Sources

- Standardize coding, event definitions, and outcomes
- Common data model for harmonization across multiple sources
- Storage system to enhance accessibility of individual databases from common platform as anonymized data at appropriate level

Dedicated Processes for Data Management

- Key for eCRF design and development
- Provide guidance for online queries
- Design database to be flexible and user friendly
- Include all stakeholders in design and revision (e.g., sponsors, sites, analysts, submissions team)

Retrospective Chart Pull vs. Prospective Data Entry

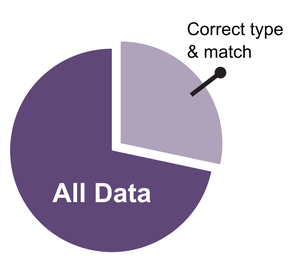


Merge retrospective (historical, e.g. EHR) and prospective data (current, e.g. EDC, PROs) from single or multiple data sets based on correct type and match so that relevant segments from large volume of retrospective data are comparable to limited-supply prospective data.

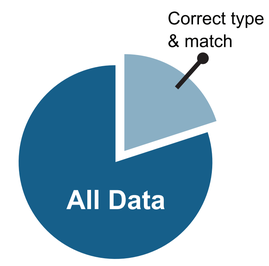
Type
- Data
- Patient
- Outcomes
- Risk factors

Match
- Treatment and control groups
- Inclusion/Exclusion Criteria
- Variable Measurement

Prospective Data

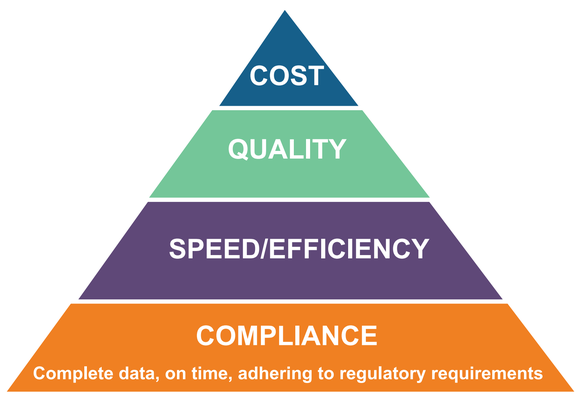


Retrospective Data



When type and match are correct, retrospective and prospective data are comparable.

Easily Navigated eCRF Increases Efficiency and Decreases Costs



FUTURE CONSIDERATIONS

- How can hybrid studies facilitate product development?
- How can combined retrospective/prospective data management systems be used to demonstrate and predict value?
- How can hybrid studies demonstrate market leadership while enhancing and maintaining flexibility in an ever-changing market?
- How can retrospective data from prospective patients drive understanding of market access and a product's life cycle?

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