INTEGRATING RISK-BASED QUALITY MANAGEMENT INTO CRF DESIGN: PRACTICAL OBSERVATIONS FROM GLOBAL TRIALS

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BACKGROUND & OBJECTIVES

Background

Late-stage Case Report Form (CRF) design and equally late Risk-Based Quality Management (RBQM) roll-out often leave critical data elements—needed for Key Risk Indicators (KRIs) and Acceptable Ranges (ARs)—missing or unclear. This gap limits patient-safety oversight and data-quality optimization, even as ICH E6(R3) and E8(R1) call for early, Quality-by-Design (QbD) collaboration across protocol, CRF and RBQM teams.

Research Question

Which points of friction between CRF data capture and RBQM analytics most frequently prevent timely KRI / AR generation, and how can early, joint CRF-RBQM design mitigate those gaps?

Objectives

Identify high-level mis-alignments between CRF development and RBQM analytical requirements and provide practical guidance for study teams to bridge these gaps.

METHODS

A qualitative, document-based assessment

1. CRF & Protocol Review

Examined 12 study CRFs alongside their protocols to pinpoint data elements linked to predefined study risks and critical-to-quality (CTQ) factors.

2. Data-Need Mapping

Manually matched each CTQ to its required data fields and basic attributes such as format, timing, audit-trail access.

3. Observation Capture

Flagged instances where data were missing, unclear, inconsistently formatted or not readily available for RBQM analytics.

4. Guidance Drafting

Converted recurring issues into actionable recommendations for future CRF and database design.

(No quantitative scoring was undertaken; findings are qualitative but consistent across the materials reviewed.)

RESULTS & CONCLUSIONS

High-Level Observation and Effect on RBQM Implementation

Data gaps, such as missing IP related information within the CRF, limits the ability to track and manage IP-related risks, e.g. storage.

Lack of access to the EDC audit trail complicates the calculation of data entry delays, limiting the potential for quality improvements and may hide sloppiness and fraud.

Late availability of critical data (e.g. lab, ECG, or biomarker data), prevents early interventions to ensure patient safety and may result in protocol deviations.

CRF format changes mid-study result in KRI and AR calculations not to work anymore

Change in data standards (AE / SAE, Drop Out, Main Efficacy data) amongst studies prevent cross-study analytics

Conclusions

- Up-front, joint CRF and RBQM planning substantially reduces avoidable data gaps.
- Early QbD collaboration across protocol, CRF and RBQM teams aligns data capture with analytic needs, lightens site and patient burden, and supports ICH E6(R3)/E8(R1) compliance.
- The authors will discuss specific mitigation tactics (e.g., mandatory audit-trail depth, CRF freeze timelines) at the poster session.

Regulatory alignment – Implementing these practices are expected to operationalize the QbD intent of ICH E6(R3) and E8(R1), reducing site and patient burden while safeguarding data integrity.

Scan for Supplementary Material

- Checklist: CRF-RBQM Alignment (PDF)
- Short explainer video
- Contact the authors

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Disclosure

The authors, **Johann Proeve, PhD** and **Anastasia Shapovalova, MEng**, are full-time employees of Cyntegrity GmbH. No external funding or competing financial interests influenced this work.

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