WHITE PAPER

Is the future of Data Management finally here? Indeed it is.

Table of Contents

Introduction	3
Modernizing Clinical Data Capture and Management with Medidata Clinical Cloud	4
Organizational Impact of RBQM	5
Process Change	5
Example: Process Change Related to Timing of Study Risk Management	6
Cultural Change	6
Example: Cultural Change Related to Targeted Source Document Verification (TSDV) Implementation	7

This white paper is the first in a series that will help the audience understand the current data management landscape, where their organization currently sits within this landscape, and finally how to implement the necessary changes to optimize and rebrand their Data Management (DM)Risk and cleaning strategies.

Introduction

For roughly 10 years, we have heard about the changing role of the Clinical Data Manager. Whether this was discussed at conferences, via webinars, or white papers, the message was everywhere: Clinical Data Management (CDM) needs to change and needs to change fast. Due to the increased complexity of electronic health records, data wearables, sensor data, and the advent of risk-based quality management, it was these capabilities that would ultimately disrupt the old school, heads-down data cleaning methods data managers were enabling and executing. In this series of white papers, we will dig down into the whys and hows of this transformation, but to start we will focus on what exactly is meant by the “future of data management”.

Modernizing Clinical Data Capture and Management with Medidata Clinical Cloud

Traditional methods for data acquisition and management in clinical trials have been disrupted in ways never before seen. This disruption has forced both regulators and the industry to think progressively about how to enable and execute new methods for delivering care to patients. Innovative thinking and modernized data governance platforms have allowed for the implementation of continuity solutions to accommodate the ongoing conduct of clinical trials while maintaining subject safety and data integrity. However, CDM processes and technology have not progressed at the same pace as the industry's accelerated clinical trials - giving rise to mounting pressure on data managers and data analytic groups.

Organizational Impact of RBQM

The clinical data management industry is known to be risk-averse, with well-entrenched processes following sometimes decades-old regulations. Institutionalizing signi□cant changes included in ICH E6 (R3) in this highly regulated atmosphere requires a thoughtful strategy, change management plan, and implementation. In ongoing COVID-19 trials, we have seen the signi□cance of the rapid change in organizations and the impact of identifying who is affected, what changes are needed, and how change is communicated. Moreover, it has brought to the forefront that traditional methods do not scale in all cases and would not have been able to support the real-time review and analysis required. Here are some of the key features enabling this optimization of ICH E6 (R3) through a focused implementation team that will identify affected people, processes, culture, and a strategic long-term approach:

- Agility - study designs must be more data acquisition focused
- Common data model - governance model must support a wide variety of data to ingest from a diverse group of sources
- Patient-centric - a study designed with the patient □rst to enable changes in data capture to meet the patient, site, and study needs
- Scalable - data capture must allow for all types and volumes, ranging from lab to devices
- Security - data security is the custodian of patient trust

Process Change

“The life science industry has seen accelerating interest and adoption of decentralized trial technology in the wake of the COVID-19 pandemic,” said Anthony Costello, president, patient cloud at Medidata. “Sponsors and CROs are increasingly turning to decentralized trial models in an effort to bring increased ef□ciency, security, and accessibility to the clinical research process.”

> With this shift, new or updated technology may likely be the best solution to address aspects of ICH E6 (R3), decentralized trials, patient diversity, data abundance, and clinical complexity. data analytics tool to give us early visibility into missing data.

Any gaps due to data re-entry, multiple systems, and resulting data latency or data errors create unacceptable risk. The velocity of decentralized clinical trial data capture requires monitoring tools that put sponsors and CROs as temporally close to the data entry as possible.

Sponsors and CROs have extensive access to process experts who can analyze existing states, design future state processes that maximize value from the technologies chosen, and create robust implementation plans to ensure organizational alignment.

Example: Cultural Change Related to Targeted Source Document Verification (TSDV) Implementation

One sponsor implemented Medidata Rave TSDV and rolled out a targeted approach to verifying only critical data points de□ned by the study team. This sponsor tracked value metrics to look at time and cost savings derived from clinical research associates (CRAs). While they veri□ed only a subset of source data in the targeted, risk-based approach, they were surprised to see virtually no change in SDV levels across their studies.

Providing options that are adaptive with □exible "site" work□ows and the ability to ingest data from various media (i.e., telehealth, sensors, wearable devices) will require analysis and restructuring of many clinical operations. We will explore how the increase of data from multiple sources data management will need to reformulate their approach from onsite data cleaning and monitoring to using analytics to monitor, analyze and clean the data.

The major shift required post-ICH E6 (R3) was related to the call to conduct oversight activities and produce artifacts of documentation to show that the oversight was done. After two decades of static guidelines for ICH GCP, new terminology was introduced for risk identi□cation and mitigation. Although it was clear that a risk-monitoring strategy would need to be adaptive, the ambiguity around how to operationalize this guidance led to industry working groups and toolkits for identifying Critical to Quality (CtQ)" data and processes.

Sponsors are informed in the revision to identify risks to critical trial processes and data. Additionally, sponsors are informed in the revision to identify risks to critical trial processes and data. Additionally, the revision calls for evaluation of the identi□ed risks against existing risk controls considering the likelihood of the errors occurring. This evaluation is coupled with an assessment of both the extent to which errors will be detectable and the impact of such errors on human subject protection and the reliability of trial results. From there, clinical trial sponsors and CROs struggled to de□ne meaningful risk indicators and prospectively identify quality tolerance limits.

RBQM adoption is a process versus a technology solution.

Core to the process is the tenets that early access is needed for trial risks. This paves the way for mitigations and other interventions contemporaneously as issues arise. Quite possibly the biggest barrier to industry adoption of ICH E6 (R2) is a demonstrable reluctance to operate with reduced SDV. The COVID-19 pandemic necessitated more centralized statistical monitoring and less reliance on traditional SDV. Importantly, nearly every global regulatory body which released COVID-19 speci□c guidance noted the importance of performing risk assessment activities.

ICH E6 (R3) is signi□cant because it will address the reality of many disparate data sources in modern clinical trials and expand guidance to include the use of technology to ensure the quality of the trials. Notably, the updated guidance includes an emphasis on the design of oversight indicating that a one-size-□ts-all methodology will be inadequate. The draft version includes Annex 1 (addressing interventional clinical trials), and Annex 2 (providing any needed additional considerations for non-traditional interventional clinical trials). The overarching principles document and Annex 1 are intended to replace the current ICH E6(R2), and ICH E6 (R3) clari□es that clinical trial teams are to be designing quality into the study protocol and processes. These activities should be applied during the early planning stages and across trial operations. R3 is supportive of an improved and more ef□cient approach to trial design and conduct.