Tufts Center for the Study of Drug Development
TUFTS UNIVERSITY

IMPACT REPORT
ANALYSIS & INSIGHT INTO CRITICAL DRUG DEVELOPMENT ISSUES

Approximately half of clinical trials use risk-based quality management components

Lack of internal awareness is the top challenge to adoption

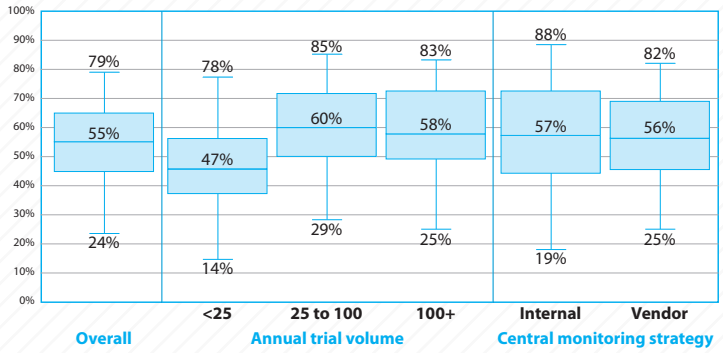
- Overall, sponsors and contract research organizations (CROs) report using risk-based quality management (RBQM) components in 55% of their clinical trials, on average.
- Individual RBQM components that support planning and design are used in 56% of clinical trials, on average, with risk assessment and risk control planning the most frequently used component, in 80% of trials.
- Individual components that support clinical trial execution are used least often, in only 52% of trials, on average.
- More than half of clinical trials rely on individual RBQM components that support documentation, verification, and the resolution of study risks and deviations.
- Some 78% of survey respondents trust that RBQM will improve clinical trial quality, while 64% trust it will increase efficiency and cost savings, and 53% trust it will reduce timelines.
- A majority of respondents, 69%, say a lack of cross-functional awareness is the top challenge to adoption of RBQM.

For nearly a decade, risk-based monitoring (RBM)—and its more expansive successor, risk-based quality management (RBQM)—have offered a compelling approach to drive efficiency, speed, and quality of clinical trials by focusing on clinical study risks most associated with essential safety and efficacy data. Despite regulatory guidance (ICH E6 R2) encouraging its use and the growing engagement of remote and virtual data collection technologies, adoption of RBQM as of 2020 remains limited.

This *Tufts CSDD Impact Report* presents the results of research conducted by the Tufts Center for the Study of Drug Development (CSDD) to measure the adoption of, and implementation challenges associated with, RBQM within a global community of small, medium, and large pharmaceutical and biotechnology companies and contract research organizations (CROs). The ongoing shift to new clinical trial executional models first embraced during the COVID-19 pandemic and the recent introduction of draft ICH E6 (R3) guidance make these new Tufts CSDD metrics particularly timely.

Companies with larger annual clinical trial volume report the highest adoption of RBQM components

Mean, minimum, and maximum reported proportion of clinical trials using RBQM overall and by subgroup

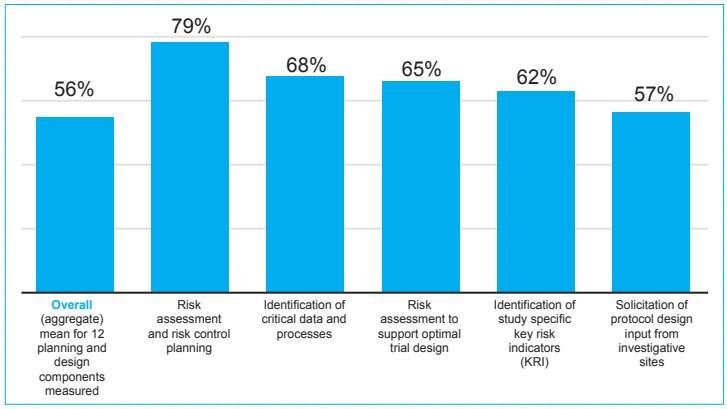


Source: Tufts Center for the Study of Drug Development

- On average, sponsors and CROs used RBQM components in 55% of clinical trials in their portfolio each year.
- Companies conducting a larger number of clinical trials each year had significantly higher levels of RBQM adoption (58%-60%) than companies with lower annual clinical trial volume (47%).
- Little difference was observed in the reported mean proportion of clinical trials using RBQM between sponsors primarily outsourcing versus those using internal staff and systems, though the latter group showed wider variation in adoption levels reported.

Risk assessment and risk control planning is the top early-stage RBQM component used in nearly 80% of clinical trials

Overall and top five RBQM components adopted to support clinical trial planning and design

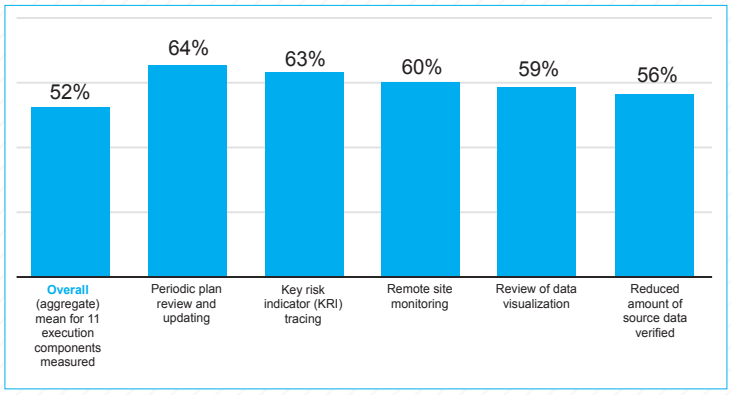


Source: Tufts Center for the Study of Drug Development

- On average, sponsors and CROs used RBQM components to support planning and design in 56% of clinical trials annually.
- Risk assessment and risk control planning was the most widely adopted component—in an average of 79% of clinical trials annually—most notably by companies managing higher trial volume and by those using an internal central monitoring approach.
- Identifying critical data and processes, conducting risk assessments to support optimal trial design, and identifying study specific key risk indicators (KRIs) were used by companies on an average of 68%, 65%, and 62% of clinical trials conducted annually.

Companies report the lowest levels of RBQM component adoption during clinical trial execution

Overall and top five RBQM components adopted to support clinical trial execution

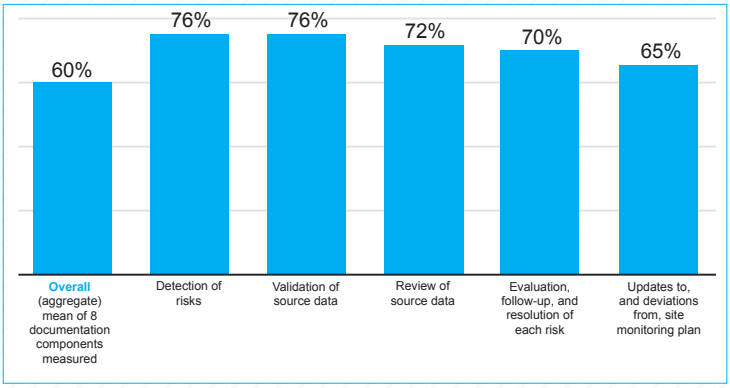


Source: Tufts Center for the Study of Drug Development

- RBQM adoption was lowest during clinical trial execution, with an overall mean of 52% of annual trials for all components supporting this stage.
- Periodic plan review and updating was the most widely used component in 64% of annual clinical trials during the study execution phase, with greater adoption observed among companies managing *higher* clinical trial volume and by those using an internal central monitoring approach.
- Tracking KRIs and conducting remote site monitoring were used on slightly lower proportions (63% and 60%) of clinical trials annually.

Most clinical trials rely on RBQM to document, verify, and resolve risks and deviations

Overall and top five RBQM components documenting and resolving risks identified

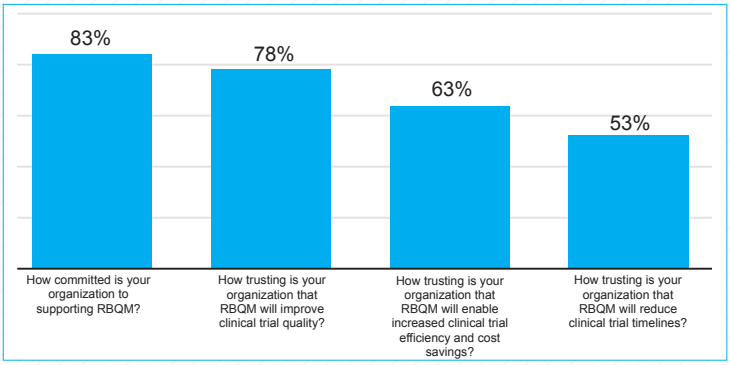


Source: Tufts Center for the Study of Drug Development

- On average, 60% of clinical trials each year used RBQM components to support the documentation and resolution of a variety of study-related risks and deviations.
- Some 76% of clinical trials conducted annually used RBQM for risk detection and verification of source data, with higher adoption rates observed among companies managing *lower* trial volume and those using an internal central monitoring approach.
- Compared to earlier stages in a clinical trial, higher relative levels of RBQM component use were observed during documentation and resolution, including review of source data, evaluation and follow-up of detected risk, and reporting of updates and deviations to study monitoring plans.

Majority of respondents believe RBQM will improve quality; far fewer believe it will improve efficiency or speed

Percent responding 'somewhat well' or 'very well'

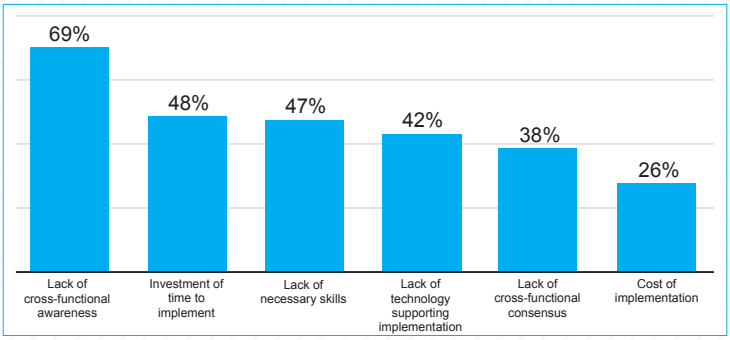


Source: Tufts Center for the Study of Drug Development

- A large majority of respondents (83%) reported that their organizations are 'somewhat' or 'very' committed to supporting RBQM, with higher levels of commitment observed among companies using an internal central monitoring approach.
- Nearly as many respondents (78%) trust that RBQM will improve the quality of clinical trials conducted by their organization.
- A barrier to adoption is apparent in the much lower proportion of respondents who trust that RBQM will deliver efficiency and cost savings (63%) and speed (53%) for their organization.

Lack of internal awareness about RBQM is regarded as the top challenge to adoption

Percent of respondents rating factor as a top three challenge



Source: Tufts Center for the Study of Drug Development

- The largest perceived challenges to RBQM adoption were associated with change management practices, including the lack of cross-functional awareness (69%), lack of necessary skills (47%), and lack of internal consensus (38%).
- Half of respondents (48%) viewed the expected investment of time a top challenge to implementing RBQM in their organization.
- The lowest percentage of respondents (26%) perceived cost as a top RBQM implementation challenge.

About this study

Tufts CSDD conducted an online global survey between November 2022 and February 2023 among sponsors and CROs to assess the adoption of 31 individual RBQM components. The CSDD team evaluated 12 components that support planning and design; 11 that support clinical trial execution; and eight that support documentation, verification, and resolution of study risks. A total of 206 respondents—typically director level or higher—completed the survey, representing 125 distinct companies: 58% based in North America, 31% in Europe, and the remainder in the rest of the world. Approximately one-third of companies were in each of three clinical trial volume segments: those with less than 25 clinical trials conducted annually, those with between 25 and 100 trials, and those with 100+ trials. Half of the respondents were in clinical and clinical operations functions, with the other half in data management, data science, or other functions. This study was supported by a grant from CluePoints and PwC.

This research was conducted by Abigail Dirks, MS, data scientist; Maria Florez, MA, research consultant; and Ken Getz, MBA, research professor and executive director — all of Tufts CSDD.

Definition of terms

Contract research organization (CRO) — An independent provider hired by a research sponsor to manage clinical trials and other support services on its behalf.

Critical data — Data that are critical to the reliability of study findings, specifically data supporting primary and key secondary endpoints, as well as data related to subject safety and rights.

Critical processes — Processes critical to the reliability of study findings and to ensuring subject safety and rights.

Key risk indicators (KRIs) — Metrics that typically trigger risk mitigation actions at the site and/or country level.

Quality by Design (QbD) —A systematic approach to ensure that clinical trial planning and design focuses on, and is performed, to mitigate errors that would have the greatest impact on subject safety and data quality.

Quality tolerance limits (QTLs) —Key thresholds of acceptable study risk and deviations.

Risk-based monitoring (RBM) — An adaptive approach to clinical trial monitoring that directs focus and activities to areas that have the most potential to impact subject safety and data quality.

Risk-based quality management (RBQM) — A systematic process to identify, prioritize, assess, control, communicate, and review risks associated with clinical trial planning, design, and execution through completion.

Source data verification (SDV) —Process by which data from the case report form (CRF) or other data collection tool is compared to the original source of information to verify that the data are transcribed and captured accurately.

Source data review (SDR) — The review of source documentation to assess quality, data integrity, and compliance.

About the Tufts Center for the Study of Drug Development

The Tufts Center for the Study of Drug Development at Tufts University School of Medicine is a multidisciplinary research center dedicated to optimizing drug development performance, efficiency, and economics through robust, data-driven assessments, analysis, and insight.

Tufts Center for the Study of Drug Development
Tufts University
145 Harrison Avenue | Boston, MA 02111 USA
Phone: (617) 636-2170 | Fax: (617) 636-2425
E-mail: csdd@tufts.edu | Website: csdd.tufts.edu

Visit Tufts CSDD on Social Media

Tufts CSDD Impact Reports are published by the Tufts Center for the Study of Drug Development six times a year; Kenneth I Kaitin, PhD, editor.