OMNITEK CONSULTING

Unified Oversight Dashboards

WHITE PAPER

Ending the Multiple-Versions-of-Truth Problem in Clinical Trial Reporting

Abstract

Sixty-eight percent of biotech leaders expect to spend more time on study oversight as trial data complexity grows, even as most organizations still rely on a patchwork of dashboards and spreadsheets rather than an integrated reporting layer, a combination that produces exactly what industry analysts call multiple versions of truth. Large sponsors managing five or more external data sources have seen the database-lock cycle time metric climb 32% since 2017, a trend that tracks closely with the growing number of disconnected systems a study team has to reconcile before leadership can trust a single number in a status report. The fix is not a mystery. IQVIA's own consolidation of clinical data from 250 separate vendor warehouses cut processing time from one to two months down to one to two days, a documented, order-of-magnitude improvement in how fast trial data becomes trustworthy, actionable information. This white paper applies established connected trial systems and data integration best practices to trial oversight reporting specifically, laying out how sponsors can move from a patchwork of dashboards nobody fully trusts to a unified oversight layer study leadership can actually act on.

More Data Sources, Less Confidence in the Numbers

A typical modern clinical trial pulls data from CTMS, EDC, IRT, eCOA, and a safety database at minimum, and often several more specialized sources beyond that. Industry research finds that more than two-thirds of sponsors now use at least four distinct clinical data sources, with a meaningful share managing six or more, and yet only about a third of organizations have an established, formal strategy for how that data gets integrated into a single reliable view.

The consequence shows up directly in trial timelines. Large sponsors managing five or more external data sources have seen the last-patient-last-visit-to-database-lock cycle time metric climb 32% since 2017, averaging roughly six additional days over a two-year window, a trend that correlates closely with the growing complexity of the data landscape each trial now generates.[i]

The Multiple-Versions-of-Truth Problem

The core failure mode is not a lack of data. It is a lack of a single trustworthy version of it. Sixty-eight percent of biotech leaders expect to spend more time on study oversight as data complexity grows, and most organizations still depend on a patchwork of separate dashboards and spreadsheets rather than an integrated analytics layer, a combination that reliably produces what industry commentary describes as multiple versions of truth: the enrollment number in the CTMS report does not quite match the one the clinical operations team quoted in last week's status meeting, and reconciling the difference consumes time nobody budgeted for it.[ii]

The scale of what unification can achieve is not theoretical. IQVIA's own consolidation of clinical data drawn from 250 separate vendor warehouses cut processing time from one to two months down to one to two days, a roughly 92% reduction in turnaround, while eliminating over a million dollars in annual overhead tied to maintaining the fragmented approach it replaced. That is not a modest efficiency gain. It is the difference between a monthly status report and a report leadership can trust in near real time.

Applying Best Practices: Building an Oversight Layer Leadership Actually Trusts

A foundational best practice in connected trial systems design, that a connected ecosystem only delivers value if data actually flows through it as intended, applies directly to trial oversight reporting. A dashboard is only as trustworthy as the data pipeline feeding it, and a pipeline built from manual exports and periodic reconciliation cannot deliver the single source of truth study leadership actually needs.

1. **One Defined System of Record Per Metric.** Assign every core oversight metric, enrollment, screen failure rate, query aging, protocol deviations, a single authoritative source system, eliminating the ambiguity that produces conflicting numbers across different reports.
2. **Automated Data Pipelines in Place of Manual Reconciliation.** Replace manual export-and-reconcile workflows with automated data pipelines feeding the unified dashboard directly, removing both the time cost and the error risk manual reconciliation introduces.
3. **A Single Dashboard Layer Serving Every Oversight Audience.** Build one unified reporting layer that serves clinical operations, data management, and study leadership from the same underlying data, rather than maintaining separate reports for each audience that can silently drift out of sync with each other.

4. **Data Freshness Displayed Alongside Every Metric.** Show when each figure in the dashboard was last updated directly alongside the number itself, so leadership can distinguish a genuinely current metric from one still catching up to recent site activity.

None of this requires replacing every underlying clinical system. It requires building the connective layer between them deliberately, rather than leaving each report's author to reconcile the same underlying discrepancies independently, week after week.

What a Unified Oversight Layer Buys, and Where It Gets Hard

Advantages

- **A single number leadership can actually trust:** one defined system of record per metric eliminates the reconciliation debates that consume study team time before a status update can even begin.
- **Meaningfully faster access to actionable trial data:** automated pipelines can compress data availability from weeks to days, closing the gap between an event occurring at a site and its visibility to study leadership.
- **Reduced manual reconciliation burden on clinical operations and data management staff:** time no longer spent reconciling conflicting reports is time available for the analysis and judgment those roles actually add value through.
- **Earlier detection of trends requiring leadership attention:** a genuinely current, unified view surfaces an emerging enrollment or data quality issue while there is still time to respond to it.

Risks and Barriers

- **Building automated pipelines across legacy systems is real integration work:** some source systems were never designed for automated data extraction and require genuine technical effort to connect.
- **System-of-record assignment requires cross-functional agreement:** settling which system is authoritative for a given metric means resolving disagreements between functions that may have relied on their own reporting for years.
- **A unified dashboard concentrates risk if its underlying data pipeline breaks:** a single reporting layer needs its own monitoring and validation, since a silent pipeline failure now affects every audience at once rather than just one report.
- **Adoption requires genuine change management:** study teams accustomed to their own familiar reports and spreadsheets need a real transition process, not just access to a new dashboard, to actually stop maintaining the old ones.

Case in Point: The Enrollment Number That Depended on Who You Asked

A mid-size sponsor running a multi-region Phase III trial had, for years, produced separate weekly status reports for clinical operations, data management, and executive leadership, each compiled independently from a different combination of CTMS exports, EDC queries, and manually maintained spreadsheets. During a leadership review ahead of a planned interim analysis, the enrollment figure quoted in the executive summary differed from the

number clinical operations had reported the same week by roughly four percent, enough to raise a genuine question about which figure was correct.

Tracing the discrepancy took the data management team the better part of a week. The executive report's figure included patients who had completed screening but not yet been formally randomized, counted by a spreadsheet formula that had drifted from the CTMS's own randomization-based definition sometime over the prior year, with no one specifically responsible for keeping the two aligned. Neither number was fabricated. They were simply built from different, quietly diverging definitions of the same word.

The sponsor's fix involved building a single automated dashboard fed directly from the CTMS as the sole system of record for enrollment, screen failure, and randomization metrics, replacing all three separate weekly reports with one shared view. The definitional drift that had caused the original discrepancy became structurally impossible once every audience was reading from the same live source rather than three independently maintained approximations of it.

Recommendations for Clinical Operations and Data Leaders

1. **Assign a single system of record to every core oversight metric.** before building or consolidating dashboards, so ambiguity about the authoritative source is resolved at the design stage rather than discovered during a discrepancy.
2. **Replace manual export-and-reconcile reporting workflows with automated pipelines.** wherever the underlying systems support it, prioritizing the reports that consume the most manual reconciliation time first.
3. **Consolidate separate audience-specific reports into one shared dashboard layer.** so every stakeholder is working from the same live data rather than independently maintained versions that can silently drift apart.
4. **Display data freshness alongside every reported metric.** so leadership can distinguish current figures from ones still catching up to recent site activity.
5. **Build monitoring and validation for the oversight pipeline itself.** treating the unified dashboard's own reliability as something to actively verify, not assume.
6. **Budget real change management time for retiring legacy reports.** since a new dashboard only ends the multiple-versions-of-truth problem once teams actually stop maintaining the spreadsheets it was built to replace.

Measuring Success: KPIs for Unified Trial Oversight

- **Time from site event to dashboard visibility:** tracked as the primary measure of how current the unified oversight layer actually is.
- **Manual reconciliation hours per reporting cycle:** tracked toward reduction as automated pipelines replace manual export-and-reconcile workflows.
- **Cross-report discrepancy incidents:** the number of instances where two reports on the same metric disagree, tracked toward zero as system-of-record assignment takes hold.

- **Legacy report retirement rate:** the percentage of previously separate, audience-specific reports formally replaced by the unified dashboard, tracked to confirm adoption is genuine rather than additive.

Conclusion

A four-percent gap between two enrollment figures is rarely a sign that someone made an error. It is usually a sign that two reports were quietly built from two different definitions of the same word, a problem no amount of individual diligence fixes because it lives in the structure of the reporting process itself.

Applying disciplined best practices to trial oversight reporting, a defined system of record per metric, automated pipelines in place of manual reconciliation, one dashboard layer serving every audience, closes that structural gap and gives study leadership the single, trustworthy view a modern trial's data complexity actually requires.

About OmniTek & Contact Information

OmniTek Consulting is a trusted partner for organizations seeking to enhance governance, operational agility, and decision-making. We specialize in modernizing business processes with a blend of human-centered design, technology expertise, and hands-on change management.

For clinical operations and data leaders consolidating trial oversight reporting, OmniTek applies proven best practices to build a practical unified dashboard practice: defined systems of record, automated data pipelines, and one reporting layer serving every stakeholder. Whether you are scoping your next trial's oversight architecture or diagnosing a discrepancy between two reports that should agree, OmniTek can help you build a dashboard leadership can actually trust.

Contact us today to explore how OmniTek can support your transformation journey and drive lasting results.

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Click here to book a 15-minute call to see how OmniTek can help your team put these insights into practice.

Endnotes

[i] Tufts Center for the Study of Drug Development and eClinical Solutions, "Data Strategies & Transformation" study, on clinical data source proliferation, data strategy maturity, and database-lock cycle time trends, available at https://www.eclinicalsol.com/newsroom/tufts-csdd-eclinical-solutions-clinical-data-study-shows-32-percent-increase-in-trial-cycle-time-metric/

[ii] Applied Clinical Trials Online, "The Future of Clinical Trials: Turning Data Chaos into Trial Intelligence," on biotech leader expectations for study oversight time and reliance on fragmented dashboards and spreadsheets, available at https://www.appliedclinicaltrialsonline.com/view/the-future-of-clinical-trials-turning-data-chaos-into-trial-intelligence