11,000
**97%**
1,300

**Guide**

# Going Beyond Healthcare Data Quality

A Leading Approach to Ensuring Data Integrity

**QCentrix**

# Introduction

Clinical data are crucial in guiding hospital operations and patient care. These data influence patient outcomes, physician engagement, reimbursements, recognition, accreditation, and more. To truly drive success in these areas, healthcare facilities must be confident in the integrity of their data.

At Q-Centrix, data integrity encompasses much more than data quality alone. Instead, data integrity refers to ensuring the accuracy, completeness, and consistency of data holistically during the entire data lifecycle—not just at the end.[1] Data integrity drives continuous improvement across multiple, distinct quality touches, making certain that the information clinical and quality leaders use to drive decision-making is as accurate as possible. Moreover, Q-Centrix believes data integrity begins at the foundational level, starting with what data experts need to succeed. By committing to the four foundations of Q-Centrix's data integrity program—experience, knowledge, innovation, and investment—Q-Centrix provides its data experts with the resources and support systems that empower them to ensure data integrity most effectively.

Without a thorough, reliable data integrity process, healthcare organizations run the risk of making critical medical errors, breaching regulatory requirements, and compromising patient safety. Data integrity is also critical for training AI. However, the challenges many facilities face—which may include limited staff time and resources, a lack of consistent data standards, difficulties keeping up with changing regulations, and a lack of staff experienced in data quality assurance—can pose major roadblocks.

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This guide discusses Q-Centrix's data integrity process, detailing the intricate methods involved in ensuring high-fidelity data every step of the way. It also shares what hospital and health system partners can expect from a data integrity standpoint when they partner with Q-Centrix.

1 Q-Centrix. "Achieving data integrity in healthcare: What health care professionals need to know" (May 23, 2022). https://www.q-centrix.com/achieving-data-integrity-in-health-care-what-health-care-professionals-need-to-know/.

# The Four Foundations of Our Data Integrity Program

At Q-Centrix, data integrity revolves around four key components:

**Experience.** Q-Centrix's 1,300+ clinical data experts, who come from a range of nursing and allied health backgrounds, abstract millions of cases annually and help over 1,200 hospital partners tackle clinical data challenges.

**Innovation.** Our proprietary AI-driven technology is specifically trained to flag inconsistencies in data for our experts to review. This confirms that data are reviewed efficiently and thoroughly, going beyond incidence and prevalence rates to unlock real-time treatment insights.

**Knowledge.** Our clinical data experts never stop learning. Q-Centrix's comprehensive training and onboarding program, Q-Centrix Institute, offers new data experts training on a wide range of essential topics and key service lines. Further, all data experts complete ongoing continuing education through professional development programs to consistently provide hospital partners with up-to-date insights.

**Investment.** Q-Centrix spends over 11,000 hours per month conducting quality-related checks on data. This translates to the equivalent of 62 full-time employees scrubbing and analyzing data.

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# Q-Centrix's Data Integrity Approach

Rather than verify data accuracy only at the end of data management activities, Q-Centrix's experts perform a series of quality checks throughout the data lifecycle. In total, approximately five to eight percent of all cases are touched by these quality checks.

"The goal is to get things right the first time to inspire continuous improvement and a culture of rapid learning," explained Deanna Waldrop, vice president of client services and data integrity at Q-Centrix.

While many healthcare facilities manage their data at the project level, Q-Centrix's data integrity program takes a systemwide approach. Q-Centrix firmly believes data insights are best viewed from the enterprise level, enabling facilities to engage more deeply with their data.

## › A Continually Improving Process

Data are at the heart of what Q-Centrix does. To that end, Q-Centrix is always looking for ways to innovate and improve its data integrity process, which has evolved dramatically over the past several years. Most recently, Q-Centrix has shifted to a risk-based approach. While Q-Centrix's algorithm previously pulled cases at random for quality checks, Waldrop's team has created a new algorithm that triggers critical element reviews based on a variety of known risk criteria.

When developing the risk-based approach, Waldrop shared that she and her team drew from their years of experience working with clinical data for hospital partners. "We have a lot of knowledge and expertise based on doing our work for so many different partners, registries, and EMRs," she said. "We have a tremendous base of knowledge—and we know where quality can go wrong. What are those things that happen in the life cycle of a project or in the life of an abstractor that can cause there to be some concern about quality risk? We wanted to target some of our checks to those places where we know there's risk."

Waldrop's team identified a variety of risk factors related to clinical data experts, hospital partners, or data elements themselves. For example, cases from newly hired data experts, as well as data elements that are newly added, especially complex, or considered especially important (e.g., elements tied to reimbursements or certifications, elements used to measure patient outcomes, etc.), would be included in the critical element review. Additionally, if Q-Centrix's typical review processes for a hospital partner fall short of the target data element match rate, an algorithm selects the hospital partner's cases for critical element review.

## › Ensuring Quality Throughout the Data Lifecycle

The critical element review joins Q-Centrix's portfolio of reviews and techniques for ensuring data integrity, some of which are detailed in the list below. Not all the reviews shown apply to every product category or service line, however. Q-Centrix employs a combination of techniques best suited for the area in question. In oncology, for instance, whose cases can be especially complex, Q-Centrix applies a series of additional checks to look for issues that can be specific to that registry.

## Some techniques Q-Centrix uses to ensure data integrity throughout the data lifecycle include:

**Initial Inter-Rater Reliability (IRR):** After clinical data experts complete an orientation program, they are paired with a more tenured clinical data specialist, who conducts a secondary full case review to validate each case the data expert abstracts until a 97 percent or higher data element match (the degree of accuracy between two sets of data) is consistently achieved. In oncology, which has a complex range of cases, the data element match must be 95 percent or higher—which is higher than the oncology industry standard.

**In-Process Reviews:** Hospital partners using Q-Centrix's proprietary software have access to real-time, in-application mistake-proofing features for added quality assurance, along with additional data capture, reporting, and analytics features to draw meaning from their data.

**Event-Based Case Reviews:** These reviews take a targeted approach to ensuring data integrity. Reviews in this category include focused reviews by project leadership to confirm accuracy, specific element reviews allowing team members to flag cases for secondary review, critical element reviews that prioritize crucial metrics based on risk criteria, and fallout reviews triggered by case elements outside accepted ranges.

**Group Case Reviews:** Prior to submission, data experts use tools such as the Data Quality Report or other bulk reporting systems to analyze cases in aggregate. For cancer registries—an area in which incomplete data is known to be an issue—data experts employ a series of logic-based checks to look for incomplete data and ensure accuracy.[2]

**Ongoing IRR:** Four to eight weeks after the original data abstraction, a sophisticated algorithm takes a random sampling of cases across all partners and clinical data experts, aiming for a target threshold of data element match.

2 Q-Centrix. "Ushering in the new age of cancer data utilization: untapped potential." https://www.q-centrix.com/insights/detail/ushering-in-the-new-age-of-cancer-data-analysis/.

## › The Math Behind a Strong Data Integrity Program

The difference between Q-Centrix's 97 percent data element match threshold and the 93 percent industry standard may not seem significant—but a real-world comparison reveals just how large the discrepancy can be. The example below compares the two data element match thresholds for a typical STS-ACS full case review, finding that a 93 percent standard results in an additional 14 errors compared to a 97 percent standard.

This same example also highlights the importance of Q-Centrix's critical element review. Of the 338 total average data elements in an STS-ACS case, Q-Centrix defines 45 as highly critical. By implementing a critical element review for these items, Q-Centrix raises the bar even higher, yielding just one error at the 97 percent standard—a marked improvement from the scenarios lacking the critical element review, in which 10 errors occurred at the 97 percent standard and 24 errors occurred at the 93 percent standard. As this example shows, maintaining a high data integrity threshold, in addition to implementing focused initiatives such as the critical element review, significantly reduces errors and helps uphold exceptional data integrity.

| | Data Elements Reviewed | Mismatches Allowed at 93% Data Element Match | Mismatches Allowed at 97% Data Element Match |
|---|---|---|---|
| **STS-ACS Full Case Review** | 338 | 24 errors (7.1%) | 10 errors (2.9%) |
| **STS-ACS with Critical Element Review** | 45 | 3 errors (6.6%) | 1 error (2.2%) |

This approach is especially valuable for registries with complex cases. Before partnering with Q-Centrix for clinical data management, many hospitals have faced challenges with substandard data element match rates (defined as match rates below 95 percent) for one or more registries. GWTG – Stroke, Intermacs, and Sepsis (CMS) are among the registries for which many hospitals have exhibited the lowest data element match rates prior to partnering with Q-Centrix. Facilities may struggle to achieve high data integrity for registries such as these due to the complexities involved, or they may be unaware of data integrity issues if their IRR processes are lacking. With Q-Centrix's high data integrity standards and targeted, risk-based approach, Q-Centrix is equipped to help hospital partners substantially improve and maintain their data integrity across a wide variety of registries.

## › What Our Partners Can Expect

| | |
|---|---|
| **A dedicated team of experts** | Q-Centrix dedicates a permanent team of skilled clinical data experts to every hospital partner. This team's top priority is ensuring the integrity of their facility's data. |
| **User-friendly software** | Every partner receives access to proprietary capture and submission tools that help them bring their quality experience to a new level. These tools offer features such as in-process mistake proofing, data interfacing, and pre-population and enhanced reporting to provide a whole new level of insight. |
| **Collaboration and transparency** | Partners also receive access to a reporting tool that shows metrics such as total quality touches and data element match scores, making it easy to assess the state of their clinical data at any point. Our team provides regular reporting to partners and seeks to collaborate on identifying best practices for improving data accuracy and staff efficiency. |
| **Continuous process improvement** | Q-Centrix utilizes a Lean Six Sigma approach to process improvement, using proven disciplines and tools to drive root cause analysis with a strong focus on preventing recurrence. |
| **Consistently high data integrity** | Q-Centrix's data element match rate far exceeds the industry standard. Its oncology match rate is over 95 percent, while its match rates for cardiology, surgery, and quality measures reporting are over 97 percent. |

## Case Study: Improving Data Integrity at a Health System

A Texas-based health system lacked a proven way to verify the integrity of its sepsis data, leading to low sepsis compliance rates and a lack of physician trust in the facility's data. Additionally, the facility's compliance tools did not identify fallouts or exceptions, creating difficulties in identifying how and when fallouts occurred. After working with Q-Centrix's clinical data experts and using Q-Centrix's data analytics technology, the facility saw a significant reduction in fallouts for several sepsis measures, case compliance rates increased by 76 percent, and physicians had greater confidence in the quality of their clinical data.[3]
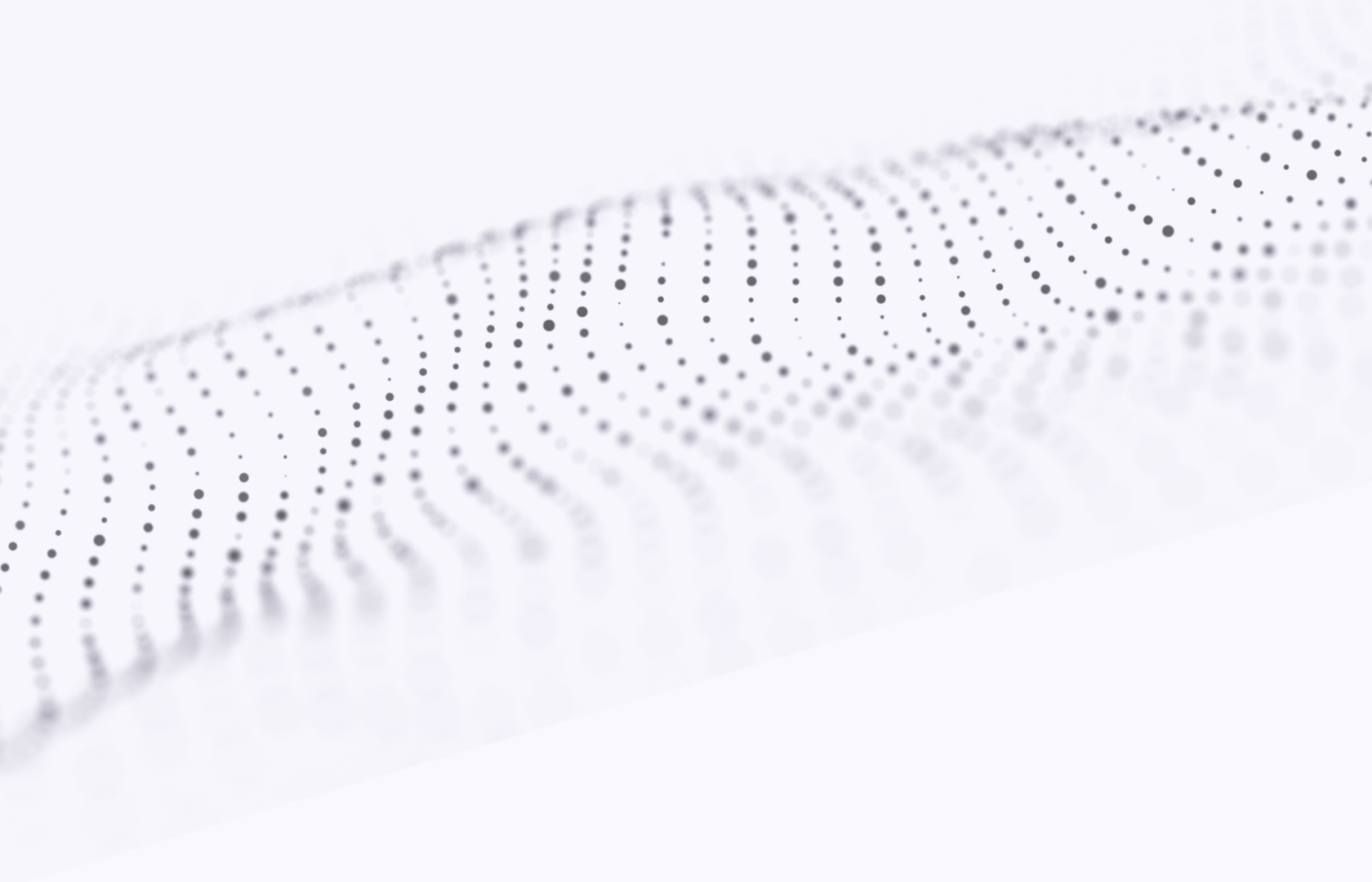
3 Q-Centrix. "Increasing sepsis compliance through real-time exception reporting."
https://www.q-centrix.com/insights/detail/real-time-exception-reporting-to-increase-sepsis-compliance/.

# Conclusion

Data integrity is paramount to achieving optimal patient care, regulatory compliance, and operational excellence. However, not all data integrity methods are created equal. One quality check at the end of the data lifecycle is not enough to provide the high level of accuracy healthcare facilities need.

Q-Centrix's comprehensive data integrity process, which includes a dedicated team of clinical data experts, quality checks at every stage, and AI-driven software, empowers clinical and quality leaders to have the utmost confidence in their clinical data. Partnering with experts who are wholeheartedly committed to data integrity allows clinical and quality leaders to spend less time performing quality checks and more time using their data to drive process improvements and improve patient care.

## About Q-Centrix

Q-Centrix sees clinical data differently—as custom data sets with infinite possibilities.

Providing the industry's first Enterprise Clinical Data Management (eCDM™) approach, Q-Centrix combines AI-enabled technology, the largest and broadest team of clinical data experts, and insights from its more than 1,200 partners to help improve patient outcomes and drive process and performance improvement, strategic growth, and operational efficiency.

Its solutions address a variety of clinical data needs, including quality measurement and improvement, cardiovascular, oncology, trauma, research, and more.

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