How to Improve Data Quality in Healthcare

The successful implementation of an Electronic Health Record (EHR) system is crucial to improving healthcare delivery. However, clinical data quality within the EHR plays a vital role in its long-term success. High-quality data enhances clinician satisfaction and streamlines efficiency, while poor data quality leads to frustration and can hinder the effectiveness of healthcare operations. With EHR data increasingly informing AI and digital automation in healthcare, data quality is more important than ever. Data professionals should take four key steps to ensure a successful EHR implementation with an emphasis on high-quality clinical data.

1. Using Lean Strategies Before Project Implementation

One of the most effective ways to ensure a smooth EHR implementation is to use Lean strategies before project kick-off. Lean techniques help break down complex projects into manageable tasks, allowing for a structured approach to data migration and quality management. This is particularly important because once the project begins, the pressure to stay on schedule may lead to deprioritising data quality.

Lean best practices include mapping out the current state of data and systems, defining future state goals, identifying potential gaps, and establishing metrics to measure success. For example, an organisation should determine the acceptable level of duplicates in their master person index (MPI). It's common for vendors to set a low threshold for data quality, but adopting a more stringent duplicate threshold ensures higher data integrity. Additionally, organisations must balance the depth of data validation efforts against the risks of error, such as incorrect mapping of clinical information.

By following these structured steps, healthcare providers create a detailed action plan for data migration that integrates seamlessly with the overall EHR implementation timeline, ensuring higher-quality clinical data.

2. Assessing Legacy Systems and Data Management

Establishing a roadmap for legacy system data is a critical step often overlooked. During new EHR implementations, decisions about which legacy systems to retain and maintain become essential. Failure to do so can lead to missed financial expectations and unexpected costs.

Healthcare organisations should address four considerations when planning for legacy data management. First, map out the roles of legacy systems to identify which data will be retained or replaced. Next, assess whether any archive platforms are already in use or need to be added as part of the future state solution. It's also essential to evaluate and budget for the ongoing maintenance of legacy systems and, finally, determine if data can be extracted in a way that maintains quality during migration.

Without proper planning, organisations may pay unnecessary fees for maintaining outdated systems. Taking a proactive approach to legacy data management ensures that the transition to the new EHR is both cost-effective and conducive to high-quality data.

3. Establishing Governance and Resource Planning

Data governance and resource allocation are essential for successful data migration and quality management but are often underemphasised. Proper governance involves transparent collaboration with stakeholders early on, ensuring that all parties understand the data migration plans and the guidelines for data quality. Establishing this early prevents friction, delays, and budget overruns arising from last-minute data decisions.

Effective governance means answering key questions, such as the organisation's tolerance for balancing data quality with resource limitations, determining which data is critical on day one of the new EHR system, and understanding the resource costs associated with validating data quality. Though EHR vendors may provide detailed guidelines for system implementation, they are not responsible for the quality of migrated legacy data. Therefore, budgeting and planning for data migration must be led by the healthcare organisation to ensure the efforts and costs are accurate.

4. Adopting ETLV for Data Migration

The standard data migration process (Extract, Transform, and Load (ETL)) is insufficient to ensure the highest data quality. Data validation is a crucial addition to this process, leading to a more comprehensive Extract, Transform, Load, and Validate (ETLV) approach. This enhanced process helps maintain the integrity and accuracy of clinical data throughout the migration.

In the ETLV process, data validation is crucial to ensure technical processes are correct and that the data presents accurately in the new EHR system. Validation not only confirms the data's accuracy but also checks the transformed data against expected standards. Healthcare organisations must take ownership of the ETLV process rather than expecting the EHR vendor to manage all aspects. While the vendor may support certain steps, the overall data quality remains the healthcare provider's responsibility.

By planning for ETLV, organisations can ensure the highest levels of data quality, essential for patient safety, effective clinical decision-making, and overall user satisfaction.

Today, ensuring high-quality clinical data during EHR transitions is more critical than ever. The success of any EHR system depends on the quality of its data, making proactive planning and strategic execution a necessity. By adopting Lean strategies, effectively managing legacy systems, establishing strong data governance, and enhancing data migration with the ETLV approach, healthcare organisations can improve clinician satisfaction, reduce inefficiencies, and ensure better patient outcomes. The responsibility for data quality rests with the healthcare organisation, and proper planning before EHR vendor kick-off activities is critical to achieving long-term success.

Source: HealthData Management

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