MPI as a Service:

Why Patient Safety Relies on Quality Data

4medica®
One Patient...One Record

Introduction

As healthcare becomes more complex, accurate and connected patient data is essential to providing quality care. However, "dirty data," human error, and systems that are not synced together challenge the patient journey, increasing risk to patients and creating avoidable costs for healthcare institutions.

The solution? Quality data and accurate patient matching. A Master Patient Index (MPI) and Enterprise Master Patient Index (EMPI) can ensure clean data that enhances patient care and improves operational efficiency.

Challenges and Need

With an ever-expanding network of providers and organizations, patient matching (or connecting a single patient's records across providers and facilities) is difficult. A single patient may visit multiple providers, and each provider may have a different record-keeping system. Even if providers have similar record-keeping systems, inconsistent formatting of data, typos, and human error can cause records to become disconnected or unsearchable. Routine patient data changes, such as a new name or address, further exacerbate the challenge of patient-matching.

Today, more patient health data than ever is being captured by disparate medical equipment, digital devices, and apps. The impact of this broadening lack of quality data is being felt beyond the point of care, affecting health plans and accountable care organizations (ACOs) that rely on data to make crucial and timely insurance and medical decisions. Disconnects in records management both internally and across stakeholder organizations disrupt the continuum of care and can be costly for both patients and providers.

The Risk of Poor Health Data Quality (HDQ)

Health data quality (HDQ) is how, where, and when healthcare data evolves over time, and whether it's useful. Poor HDQ is a threat to current and future patient care.

In a hospital setting, for example, a physician needs a patient's ambulatory outpatient records to make evidence-based decisions about appropriate treatment. Too often, however, data that should inform clinicians at the point of care is trapped in siloes scattered across the healthcare landscape. Incorrect and incomplete information can result in patient safety issues, as well as loss of revenue due to inaccurate billing and rejected claims.

Incomplete information resulting from duplicate or partial records also can contribute to clinical errors. Providers without access to unified patient records may not be aware of all the medications their patients are taking. This can lead to duplicate medications being prescribed as well as potential adverse events resulting from dangerous drug-to-drug interactions, or drug allergies that may have been documented in one system but are missing from others.

When poor quality data and patient duplication exists within hospitals and health systems, operational costs and financial losses are inevitable. . One Texas hospital found that duplicates accounted for 22% of all patient records, with the resulting costs averaging $96 per duplicate.

Fortunately, technological solutions such as an MPI or EMPI reduce duplicate data and dramatically improve the accuracy and quality of patient information throughout the healthcare system. By making data richer and more useful, we can empower better care coordination, greater clinical insights, improved patient outcomes, and a healthier population.

What is an MPI?

Although often used interchangeably, MPI and EMPI actually refer to different functionalities.
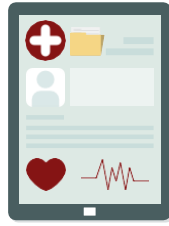
An MPI is a single-source electronic patient database used by healthcare organizations and health information exchanges to maintain accurate medical data for all patients across the system.

An EMPI system creates a centralized, cross-platform solution designed to link records in real-time from diverse systems and care settings. It may link several MPIs together across organizations, or aggregate data from separate systems within an organization.

By connecting patient data with multiple third-party sources of information to create one accurate master patient index, it's suddenly possible to analyze decades of information accurately, and make actionable insights that offer maximum benefit to patients and providers in a new value-based care environment.

How an MPI Works

1. The existing dataset is integrated. Patients are assigned a unique identifier to ensure they are represented only once across all systems.
2. Data is analyzed for error corrections and EMPI scoring weights. Patient data can include name; gender; date of birth; race and ethnicity; social security number; current address and contact information; insurance information; current diagnoses; and most recent date of hospital admission and discharge (if applicable).

3. Referential matching technology matches patient data to a reference database so that duplications can be removed.
4. The goal is to achieve one comprehensive record per patient that can be shared across system – "one patient, one record."

Who Can Benefit from an MPI?

As IHDE shows, clean data benefits patients and providers across the entire healthcare system. All participants in the system can benefit from an MPI. Without one, they may continue to face organizational and patient risks, such as:

- **Hospitals & IDNs -** As care moves further out into the community, hospitals and health systems must evolve their approach to clinical data management and reinvent capabilities to win loyalty with providers and patients. A proven way to drive revenue is to become known for reliability, accuracy, affordability, and patient safety, all of which depend on access to key systems, data integrity, and transparency to drive better patient outcomes. For hospitals and integrated delivery networks (IDNs), clinical data management services are essential to the financial success of hospitals and health systems and are the cornerstone of effective patient care management and billing. Simply put, effective data management helps to foster healthier patients and communities.

- **Health Plans & ACOs -** Health plans and ACOs need robust health data management systems that take full advantage of big data opportunities with powerful analysis resources and seamless clinical interoperability. Low-quality data, such as duplicate records, missing patient names, or obsolete information creates multiple barriers to care delivery and collections, while spawning inefficiencies across the healthcare system.

- **HIEs/HINs -** For Health Information Exchanges and Health Information Networks (HINs), the quality of incoming data is crucial because most revenue sources (health plans and provider organization memberships) rely on this data to be timely and accurate to enhance patient safety, reduce readmission rates, provide deeper insights into social determinants of health (SDOH), and improve operational efficiency.

- **Labs & Imaging Centers -** Across the industry, poor patient datasets not only lead to suboptimal outcomes and care coordination health discrepancies, they lead to costly lab and imaging operational inefficiencies. Labs and imaging centers that fail to protect their data against duplications and other quality issues are putting their reputations are on the line.

An accurate MPI solution from a qualified vendor reduces these risks and restores accuracy and efficiency to patient care.

What to Look for in an MPI

Due to the complexity of patient matching and the delivery of clean data, healthcare organizations must consider multiple factors when choosing an MPI solution. Look for a solution that can be scaled across your organization and that offers the following elements:

- Fit for purpose – the solution is the right fit for your business model
- Cloud-based for compliance and ease of ongoing maintenance
- An approach to product design that allows the organization to move toward full independence quickly
- Easy-to-configure matching rules that empower you to monitor the health of your system
- Less than 1% patient duplication rate

Once you've selected the best solution, work with your MPI partner to decide which data sources to bring into the new system, assess the quality of that data, and start matching patient records to identify duplicates and gaps in information. Once the data is in the MPI system, you will be able to focus on ongoing data stewardship and minimizing duplicates going forward.

Conclusion

Healthcare is becoming more complex as value-based care networks enable more data sharing and care moves into the community. Human error and lack of interoperability can introduce "dirty data" into EHRs, increasing the risk to patient safety and leading to higher healthcare costs. Employing an MPI and EMPI can ensure accurate patient matching and clean data that improves patient care and operational efficiency for provider organizations.

How 4medica Can Help

Today's healthcare organizations are under simultaneous pressures: to exchange and aggregate data, to bill and collect more efficiently, all while ensuring patient safety is never compromised even as patient records are being exchanged.

Success in these areas requires the best data quality possible, and 4medica's HDQ Consulting can help you achieve this with customized solutions to address your unique data quality needs. We are more than a software vendor; we are your HDQ partner ready to pursue this journey with you. Contact us today to learn more.