Improving Patient Record Matching

Accurate and complete patient personal and health information is required to meet industry requirements for improved patient safety, better outcomes, more effective patient engagement, and reduced healthcare costs. In addition, the Office of the National Coordinator for Health Information Technology (ONC) has identified accurate patient record matching as a core building block for achieving true interoperability.¹

Healthcare organizations have invested in implementing Master Patient Index (MPI) solutions to bring together patient records from disparate systems so that both practitioners and downstream systems, such as billing, have a complete view of the patient’s current medical services and history. In spite of the widespread deployment of MPIs, the industry duplicate medical record rate remains at an unacceptably high average of 8% and is significantly greater for larger organizations and health information exchanges according to the American Health Information Management Association (AHIMA).²

MPI solutions rely on patient demographic information captured at the time the patient was seen to match records. However, patient information is often missing, incorrect or has changed over time, resulting in fragmented and incomplete duplicate medical records or overlays that can comingle medical information about two or more different people. According to the US Postal Service (USPS), 45 million people move each year³ and data collected by the National Vital Statistics System of the Centers for Disease Control and Prevention (CDC) shows that there were nearly 3 million marriages and divorces in 2011⁴ — which means nearly as many name changes. Accurate and complete patient health information is imperative within an organization and when sharing across other healthcare organizations through health information exchange.

College of Health Information Executives (CHIME), AHIMA, and many other healthcare industry groups and governmental organizations, are advocating for drastic improvements in how patients are identified and patient records are matched. Using external source information about a patient is one solution under consideration.

---


² AHIMA, Ensuring Data Integrity in Health Information Exchange: 2


Patient Identity Management Solution

Equifax offers a comprehensive patient identity management solution which leverages our vast proprietary data sets of current and historical information to identify unique patient records and Equifax proprietary keying technology to facilitate linking medical records across different health systems nationwide. Equifax can also augment your patient data to ensure more current, accurate patient contact information to improve patient engagement and outreach. The Equifax solution for patient identity management helps healthcare organizations:

- Improve patient safety with more accurate linkage of a patient’s medical records across multiple settings for a more complete electronic health record for a patient
- Reduce costs for resolving inaccurate patient health records by helping minimize the creation of new duplicate medical records and medical record overlays
- Better comply with regulations by facilitating sharing of information through health information exchange

Our solution consists of three services: patient record matching, patient identity verification, and patient data enrichment. When used together, these services comprise a complete patient identity management solution.

Patient Record Matching

Provides both real-time and offline patient record matching services using the nation’s largest reference database of hundreds of millions of unique individuals, configurable algorithms and a learning matching engine. By evaluating a healthcare organization’s patient information using current and historical names and addresses for individuals, our patient record matching service identifies patient records belonging to the same patient that typically cannot be combined using traditional MPI matching algorithms. In addition to identifying potential duplicate patient records, the service assigns a unique patient key to each patient which can then be used to assist in preventing duplicate health records in the future.

Equifax does not advocate replacing the investment made in MPI systems, but instead, recommends using our patient record matching service to augment the MPI processes.

Patient Identity Verification

Helps prevent creation of inaccurate patient records by providing strong patient identity assurance at registration and enrollment. The identity verification service is a real-time service that uses our proprietary data on individuals and targeted analytics to verify the information provided by the patient and check for potential mis-use of the patient’s identity. Verifying the identity of the patient when the patient is registering to receive healthcare services ensures the patient is who they claim to be and minimizes the potential for an individual to receive healthcare services fraudulently. Furthermore, for those organizations committed to deploying biometrics for their patient populations, patient identity verification is a crucial pre-requisite to prevent linking a biometric to the wrong patient.
Patient Data Enrichment

Helps healthcare organizations use the most current and accurate patient demographic information in health transactions from registration to billing and patient contact for outreach and post-discharge follow-up. Equifax’s extensive database of name, address, and telephone number records provides a rich source of verified demographic information that can be used to augment the healthcare organization’s data.

How Patient Record Matching Works

The Equifax patient record matching service not only helps a healthcare organization identity additional patient health records that can be merged, but it also provides a mechanism to help prevent new duplicate or overlaid health records from being created and facilitates the exchange of patient health records across healthcare organizations.

The first step is to process all of the existing patient health records to identify the unique patients in the healthcare organization and assign a unique patient key to each patient. This step also helps identify which patients have multiple health records which have not been previously identified as belonging to the same patient so the healthcare organization can merge the health records. The next step is to implement a real-time service to get the unique patient key at registration, which can then be used to obtain any prior health records for the patient. At the same time, Equifax can look for any changes in patient contact information and make it available to the healthcare organization. The unique patient key is carried through the healthcare organization’s systems to prevent new duplicate records from being created.

Figure 1. Patient record matching in a patient interaction
One of the challenges in implementing Health Information Exchange (HIE) is that healthcare organizations may collect different patient demographic information and store the information in different formats. The patient record matching service helps with this challenge by deploying the service at each of the participating healthcare organizations. The service uses the patient demographic information from the specific organization to assign unique patient keys. A patient seen by any of the organizations receives the same key. The unique patient key allows the organizations to more readily share patient information regardless of how the patient demographic information is collected and stored at the respective healthcare organizations.