



White Paper

Ongoing Outsourced MPI Management The Need for Vigilance

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The Problem

Effective management of a master patient index is a critical element in maintaining data quality and integrity. Health care organizations continue to struggle with the problem of duplicate, overlay, and overlap records. Human error at registration in hospitals, emergency rooms, and physician offices frequently creates transposed birthdates or social security numbers, nicknames used instead of given names, misspellings, and a host of other actions that generate duplicate records. Industry average rates of known duplicated medical records continue to run at 8-12%, and many experience far higher.

Incorrect, incomplete or duplicate records create a variety of significant problems, including:

- Contribution to serious medical errors such as missed medications, adverse reactions to drug interactions, incorrect blood type transfusions, and others that depend on accurate patient identity. With today's intense emphasis on patient safety, the healthcare industry has a high degree of interest in eliminating potential causal factors.
- Unnecessary or repeated tests or procedures.
- Delays in diagnosis and treatment - a costly if not potentially life threatening issue.
- Added costs and operational inefficiencies.
- Revenue cycle impact such as billing delays and increased Accounts Receivable days outstanding.

MPI Management: Often Still a Manual Process

For many organizations MPI management processes are largely manual, relying on rudimentary reports and spreadsheets as the primary tools for problem identification and tracking. Unable to invest in advanced technology solutions, these organizations struggle with labor-intensive, time-consuming, and inefficient approaches. By its nature, the resolution of problem records needs dedicated, experienced resources that few hospitals have readily available. Despite best efforts by staff, backlogs of duplicate records can build.

Technology Solutions

Electronic Health Record (EHR) systems with embedded master patient index software and specialized Enterprise Master Patient Index (EMPI) systems offer automated ways to cope with the creation of problematic records. These systems deploy algorithms - with varying degrees of accuracy - that identify, analyze, and improve accurate patient matching to resolve potential duplicates or flag them for human review. As such, they provide significant improvement over the traditional manual process.

Implementation of an EHR, with its intention to create a centralized data repository, typically prompts an organization to address clean-up of its duplicate record backlog prior to go-live. Duplicate and other problematic records threaten the validity of these databases and therefore the viability of their myriad output and uses. Providers want to protect the huge expenditure of time and money devoted to implementing these major clinical and administrative systems.

The clean-up task can be enormous given large volumes of accumulated records, difficult data conversions from legacy systems, and the need to resolve multiple records residing in a variety of data "silos." Organizations often turn to outsourced specialists who can bring the scale, consistency of process, and expertise needed for such a crucial task. Good consultants also

recommend process and policy improvements as well as training of internal staff to promote prevention and mitigation of future errors.

Problem Solved? The Case for Vigilance

With a record clean-up project completed and an EHR or dedicated EMPI system implemented, are duplicate record worries over? No doubt these actions should produce a substantial reduction in rates of duplicate creation going forward.

Yet even as the industry has widely adopted electronic health record systems (EHR) over the past five years, we have witnessed persistent challenges in patient data integrity. It is important to understand that technology is vital but is not a panacea. The quality of record-matching algorithms in systems varies widely. Of course, none offer 100% accuracy, but despite frequent vendor claims of near-perfect results, some MPIs are less robust than others. Moreover, all systems need adjustments to out-of-the-box algorithm settings as well as periodic updates to reflect unique organizational requirements and changes over time.

The upshot is that ongoing vigilance in MPI management is a must. Beyond technology limitations, today's increasingly complex healthcare environments create many avenues for creation of problem records. There are a number of factors contributing to ongoing potential duplicates and to elevated concern over their negative consequences, including:

- **Organizational Consolidation.** The past several years have witnessed acceleration of hospital M&A. Healthcare organizations are rapidly pursuing horizontal integration through hospital mergers and vertical integration by acquiring physician practices, opening ambulatory facilities, and creating a range of other affiliations to control cost and influence care coordination.

Duplicate record rates have been rising as a result. Consolidation generates an immense challenge of integrating existing systems and merging patient data files, often involving millions of records with much duplication. And as additional hospitals or clinics are subsequently brought on board, the record management cycle begins anew. Existing E/MPI system algorithms often struggle to keep pace on their own, while internal staff is frequently overwhelmed given its many other priorities.

- **Complexity of Patient Data Entry.** Today's complex healthcare workflow involves multiple people, points of data entry/documentation, and information systems. Patient data capture occurs at scheduling of future visits, registration in the hospital, clinics and outpatient facilities, emergency room encounters, through online patient portals, and more. Different times, locations, and people involved in each scenario increase the chances of duplication and error.

The multiplicity of data entry points is mirrored by many different information systems with unique technological interfaces and underlying data structures. Even a central EHR is flanked by an array of departmental and external systems that create and maintain patient records. For example, one recent article described a hospital network that sought to integrate its affiliated independent physicians, who were found to be utilizing

24 different electronic record systems.¹ In such a landscape, the identification and resolution of duplicate records becomes an ongoing challenge.

- **Heightened Demands on Data to Promote Value-Based Healthcare.** Central to the transformation from volume to value as the foundation for reimbursement will be success in managing health across entire populations of people and coordinating care among a variety of inpatient, outpatient, and home settings. These initiatives require substantial data analytics, and clean, accurate patient data is paramount to deriving the insights needed.

The effort to improve the value of healthcare delivery is driving creation of structures such as Accountable Care Organizations and Medical Homes. At the state and regional levels, providers are coming together to participate in Health Information Organizations (HIOs) that share and transfer patient information within their network through a Health Information Exchange (HIE). HIEs face two challenges in creating a reliable database to support population health and other goals: matching incoming patient records from diverse sources and making corrections when errors are discovered. These tasks are complex given lack of standards for required patient demographics and the frequently deficient patient matching algorithms embedded in HIE central systems. All parties will be under pressure to rectify duplicates and other problems that inhibit creation of a comprehensive record for a specific patient. The EHR Association framed the problem this way: “Patient identification that ensures accurate patient record matching across provider sites is a primary concern when aggregating patient information from multiple organizations. Error rates in existing technologies that manage patient identification are sufficiently high to cause concern about medical errors, redundant testing, and inefficiency.”²

Finally, there is a growing requirement by many public and private sources for reporting patient information for compliance, quality tracking, registries, and many other uses. This proliferation places an additional premium on proper patient identification, record matching, and data quality.

- **Meaningful Use.** Demonstrating “meaningful use” of certified electronic medical records continues to be a high priority. In 2015, incentives for compliance with meaningful use standards will disappear and penalties will begin to be assessed. Demonstration involves meeting a range of functional objectives using an EHR, measured as a percentage of “unique patients” derived from an organization’s EMPI. Duplicates inflate the actual number of patients, thereby raising the denominator and making it harder to achieve compliant rates.

Also, as the Office of the National Coordinator continues to set requirements for certification of electronic health record systems, duplicate records are squarely in sight. A study commissioned by ONC recommended that “criteria should be introduced that require certified EHR technology that performs patient matching to demonstrate the

¹ John Morrissey, “Finding a Path to Clinical Integration, *Hospitals and Health Networks*, January 13, 2015 online.

² Quoted in “HIE Requires Nationwide Patient Data Matching Strategy,” *Health Data Management*, August 2014.

ability to generate and provide to end users reports that detail potential duplicate patient records.”³

- **Human Error.** Even in an automated environment, there are still people in the data equation. Time constraints can cause staff data entry errors. Patients themselves contribute to the problem by giving wrong or confusing information. Special situations create extra challenges in accurate patient identification. Take the case of pediatric facilities where the patients do not always speak for themselves and are often brought in by non-parent family members who lack complete or accurate patient data.

Maintain a Steady Defense

The bottom line for MPI management is that the stakes are high and the process complex. Maintenance of patient data integrity is not a one-time affair; rather it requires steady, persistent, and organized effort. Ideally, the program would augment its core monitoring function with regular quality assurance reviews, analysis to identify new data quality issues as they arise, and recommendations and training on procedure changes that help prevent errors.

The challenge is that the time and people needed to manage, review, validate, and correct duplicates as well as recommend process changes are in short supply in most institutions.

Fortunately, there is a strong and viable option. As MPI management takes on new prominence providers are turning to outsourced help to maintain a strong line of defense. Outsourcing has become an accepted and important tool to manage a range of critical needs in healthcare organizations. Health Information Management has long made effective use of outsourced services in transcription, coding, release of information, and other functions. Access to experts highly trained in analysis of duplicate records is available on a comfortable subscription basis, making this a preferred approach for many organizations.

Clear Benefits of Outsourcing

Ongoing MPI management through outsourcing carries many benefits:

- **Cost savings.** Various analyses suggest that resolving each duplicate record in house costs an organization on average anywhere from \$20 to nearly \$100. Outsource firms can bring tremendous efficiencies to the process through experience, technology and optimized workflow. Providers gain an opportunity for significant cost-control.
- **Access to specialized expertise.** Many organizations need to assign staff to duplicate record management who have other responsibilities or have limited experience. A successful outsource firm brings consultants who have considerable background in the subject and who focus daily on addressing MPI management issues. Some firms have refined an “assembly line” approach, wherein each step is undertaken by an individual with specific expertise.
- **Ongoing monitoring.** Outsourcing lets providers stay on top of duplicate record management. Frequency of record review can be scheduled based on an organization’s individual needs.

³ Audacious Inquiry LLC, “Patient Identification and Matching: Initial Findings,” *Report Prepared for ONC*, December 2013, p.5.

- **Identification of new data quality issues.** Specialized consultants know what to look for and are on the alert for new threats, which can be identified and eradicated before they affect data integrity.
- **Frees internal HIM staff.** Let in-house personnel attend to other priority areas of data management knowing the outsource firm is fully concentrated on duplicate management. At the same time, the need to train current staff on all aspects of MPI management can be eliminated.
- **Quality Assurance.** Good consultants incorporate a strong quality assurance process that helps improve accuracy and provide ongoing learning.
- **Reporting and Analytics.** Organizations should expect from consultants detailed, actionable data integrity reports that pinpoint weaknesses in the MPI system or individuals who require additional training. This information provides significant management visibility and creates an audit trail for future reference.
- **Revenue cycle improvements.** Maintaining clean and accurate patient data directly impacts the quality of an organization's billing and claims submission.

The Right Strategy

It makes sense that, given its many benefits, ongoing outsourced MPI management is emerging as a solid strategy for achieving the highest level of data integrity. Outsourcing offers a cost-effective and highly efficient way to ensure that all patient data is clean, accurate, and immediately available when needed.