

The Risk of Duplicate Patient Records

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Published on www.lorman.com - November 2019

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The Risk of Duplicate Patient Records

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An issue of growing concern for hospitals and healthcare providers is duplicate patient records within their Master Patient Index (MPI), the healthcare provider's database that holds information on every patient.

A “duplicate patient record” occurs when a single patient is associated with more than one patient record. Duplicate patient records are often caused by patient names that have complex spellings and/or variations of a name, data entry input errors by hospital staff, identity sharing among patients, and

of the first name including first name such as Maria, Marie, Mary, Marcus and many others. This type of search often returns hundreds of potential records requiring the registrar to scroll through multiple screens in their attempt to locate the correct Maria Garcia.

The task of locating the right patient is also complicated by the fact that over time a person with that names presents, they may use variations of the name (i.e. Maria Garcia, Maria de Lopez Garcia, Maria L. Garcia, Maria Garcia Williams, etc.) potentially

Testing was conducted on over 700,000 patient records and it was established that the physician group's records had a duplicate rate of approximately 5%.

unenforced admissions quality standards across different locations of a given provider. Just one mistyped digit in a social security number, birth date, or address can lead to a duplicate record. Patient intake staff contends with identity sharing, non-English speaking patients and foreign nationals, all which further complicate the admissions process and increases the potential for creating duplicates.

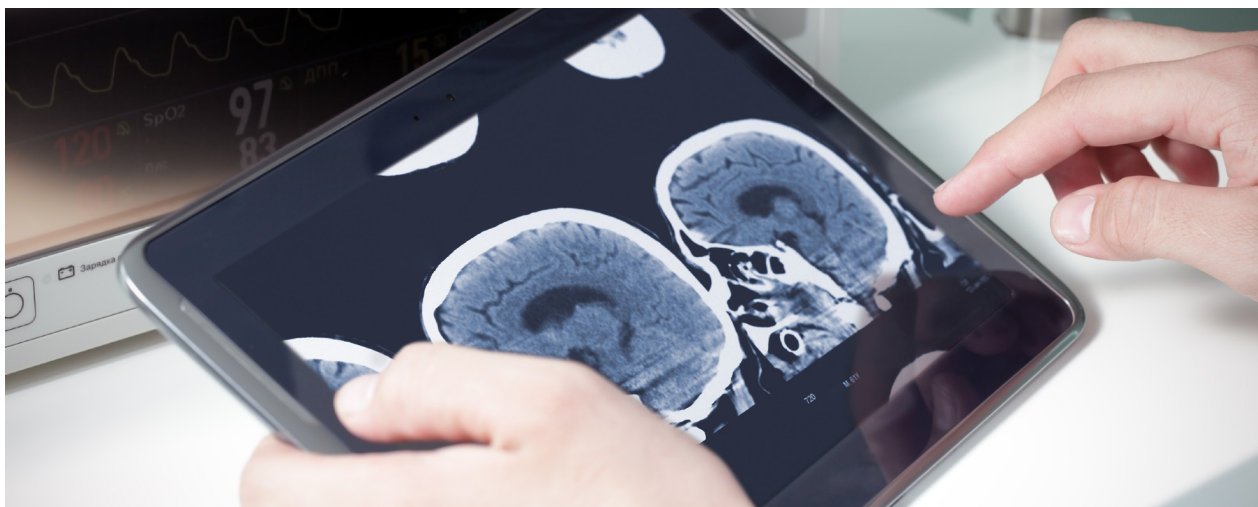
According to the “Building an Enterprise Master Person Index” American Health Information Management Association (AHIMA) Practice Brief, U.S. hospitals have a duplicate patient record rate of 10%. (Bassett)¹

Duplicate records occur frequently for patients with common names. For example, in states with large Hispanic populations, the name Maria Garcia is extremely common. A local hospital may have hundreds of patient records with the name Maria Garcia within their MPI. In order to locate the correct Maria Garcia the registration clerk must perform a search by entering the last name “Garcia” and at least the first three character of the first name “Mar*”. The system locates all records with Garcia as the last name and Mar as the first three characters

causing hospital staff to create multiple patient records for the same individual or to confuse the presenting patient with another patient of the same name. This problem also exists with other common names and names containing suffixes, such as John Smith, Jr.

The aggregation of healthcare providers from single facilities to complex integrated delivery systems and Accountable Care Organizations requires that patient records contained in multiple MPIs be aggregated into a single Enterprise Master Patient Index (EMPI) to provide a 360° view of the patient's record across all venues of care. Many healthcare organizations are unaware of the complex variations in how a person is demographically represented in multiple records in different systems. As a result, when rudimentary matching criteria is used on various combinations of a person's name, date of birth, gender, and social security number, if present, the end result is patient records with multiple typographical errors, or different representations of a person's name as un-matched duplicates in the resulting EMPI.

The risk of duplicate records is not limited to hospitals. A recent beta test on a large metropolitan



physician group with **over 20 locations** confirmed that they too have duplicate patient records. Testing was conducted on over **700,000** patient records and it was established that the physician group's records had a **duplicate rate of approximately 5%**.

Duplicate patient records can pose serious risks for healthcare providers, with conflicting data leading to poor or delayed patient care, duplicate procedures, reimbursement issues, and potential medical malpractice claims. Duplicate patient records are costly for the healthcare provider and difficult to correct.

A published 2011 brief by Just Associates, Inc. shared results from a consulting project they had completed for Children's Medical Center of Dallas, Texas. Just Associates was engaged to help Children's remove approximately **250,000 duplicate records** in their system that represented **22%** of their Master Patient Index. "A study conducted on Children's data showed that on average, **a duplicate medical record costs the organization more than \$96**. The study also showed that in 4 percent of cases involving confirmed duplicate records, there was an impact on critical care." Additionally, the study pointed to increased costs resulting from duplicate tests and procedures stating "those records associated with **repeat tests or treatment delays averaged about \$1,100 each**". (Just Associates)²

Duplicate records may increase the risk for poor patient outcomes. In an American Medical Infor-

matics Association Proceedings (AMIA Proceedings) publication, a study of laboratory tests was done, where a duplicate patient record existed at the time of the laboratory test. It was stated that "the potential implications of duplicate records on the quality and safety of healthcare extends beyond missed laboratory results". Many of the secondary records contained other types of clinical data (clinical notes, reports of imaging studies, documentation of medication and allergies) in addition to laboratory results. Incomplete documentation of patient history may cause suboptimal care. A missed allergy could end in the prescription of a dangerous drug, and a missed prescription could result in contradictory therapy. (AMIA Proceedings)³

Duplicate patient records have also become a factor in medical malpractice litigation. While not the root cause of medical malpractice claims, the issue of duplicate records is a contributing factor in such litigation. Interviews we have conducted with hospital risk management professionals have confirmed that **duplicate patient records have caused negative outcomes** in the discovery phase of the litigation **process**. It is not uncommon for disgruntled patients to request copies of their medical records, and when the case escalates to litigation, for plaintiff's counsel to also request the records on behalf of their client. If more than one patient record is presented in discovery, it may have an impact on the litigation process for the healthcare provider. These negative perceptions may be greatest where there are

significant discrepancies within the duplicate records on issues such as prior diagnosis, medications and allergies. Plaintiff's counsel has become well-versed in the issue of duplicate records and has become proficient in using this information during the litigation process to discredit the healthcare provider. While the historical experience has been that duplicate records are merely a contributing factor in claims, the potential for poor patient outcomes makes this an issue of concern. This issue **could lead to future increases in medical malpractice claims** and deteriorating loss experience for healthcare providers.

Because we view duplicate patient records as a growing concern, Arthur J. Gallagher & Co. has exclusively partnered with ARGO Data Resource Corporation, a Dallas, Texas-based technology company that has developed a solution that employs **probabilistic analysis** coupled with **natural language processing** and other machine learning techniques to increase the accuracy when matching and identifying duplicate patient records. ARGO is one of a select few healthcare technology specialists that have created solutions to combat the duplicate record issue with a degree of **accuracy potentially exceeding 95 percent**. Existing healthcare information systems are generally not as effective at identifying and preventing duplicate records as one might expect. Steve Kotyk, an information technology expert and Healthcare Business Development Lead of ARGO commented "In a perfect world the patient's demographic information would be identical from one system to the next – but we don't live in a perfect world. Mistakes will be made, and patient demographic information will be different from one registration to the next and certainly between different healthcare organizations". This problem is magnified by the fact that **most healthcare information systems use matching technology that only identifies 30 to 40 percent of a patient's multiple records that contain demographic discrepancies**. Specialist technology companies, such as ARGO have developed solutions that work with existing



healthcare data systems to help prevent the future creation of duplicate records. Probabilistic Analysis is an effective tool for healthcare providers to use to identify existing duplicate records and mitigate future duplicate record creation.

As with so many issues, the contemporary healthcare risk manager must be aware of the risk potential arising from duplicate patient records and implement appropriate measures to reduce the risk. Failing to take steps to reduce the incidence of duplicate patient records may lead to increased operational and clinical costs, negative patient outcomes and increased litigation. The current matching technology will not suffice. New technologies, such as probabilistic analysis can quickly help to limit the risk to an organization posed by duplicate patient records.

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