

## Do Facilities Need an EMPI?

While participating in an 'Ask Industry' session at the most recent Siim meeting, one of the audience members posed the question, "Can I consolidate to enterprise imaging/PACS without an EMPI?". There were various answers from my fellow panelists, but when I responded with "of course you can!" the audience seemed quite surprised. Yes, the ultimate goal of digital health records is to reach the nirvana of a complete longitudinal patient record. However, before investing the time, effort and resources into deploying an EMPI (enterprise master patient index), commonly known as an "E" number, one should ask the fundamental question, "do I need it?", for me the answer is a resounding, "well... it depends."



As health systems expand, acquiring providers and facilities in the process, this growth creates a complex web of systems. To track a patient across these systems, there needs to be a single patient ID or medical record number. The term for the application that assigns a patient ID is 'Issuer of Patient ID,' sometimes known as the assigning authority. This is typically the EMR, or less often, the HIS. If say, an imaging center uses the same patient ID for the patient as the hospital uses; then you are on one issuer. More common is that the various imaging centers, facilities and/or hospitals all have their own issuer. Therefore, patient Kyle Henson can be assigned ID number 123456 at one facility, and then number 654321 just down the street. The problem this creates is; how do you share records? Or, in the context of consolidation, put all the records in the same place?



Most of us have encountered problems from these patient ID conflicts; when studies from two different issuers are put into the same PACS, resulting in 2 different patients with the same ID. At best, this scenario creates confusion and QA issues. At worst, it creates a patient safety problem, where one patient's data could be mistaken for another.

To resolve this, there are three options. The first is to ensure uniqueness. Typically, this means when consolidating data that a site prefix is added to the patient ID. So, Kyle Henson's record at ABC Medical Center becomes AMC123456. As long as the prefix AMC is not repeated for a different site there is no way to have 2 patients with the same ID in the central system. The second technique is to logically separate the data. Each 'Issuer of Patient ID' is given a virtual bucket in the central system, and because only data from *that* issuer is in *that* bucket the data can't create conflicts. The problem with both scenarios is that each record for the patient is distinct and likely won't show up as a prior, or part of a consolidated patient record. (Yes, yes, I know that you can drop an "F" bomb and federate a query to all buckets, but this can create its own set of problems.) This leads us to the third option, and this is where the EMPI solution comes in. EMPs are usually a system-wide initiative and simply match patients based on a set of criteria, which looks to find the same patient with multiple patient IDs assigned. Most EMPs have a cascading set of matching criteria that carry with it a certainty score of how confident the system is in the patient match.

This takes us back to the original question posed; do you *need* an EMPI to consolidate data into a central system? As we have discussed, you can separate the data so that it does not create conflicts, so no, you don't *need* one. However, maybe you *should* have one... So, to really answer that question, we need to start with another question: how common is it that patients move between facilities that have different issuers of ID?



I live in Texas; it's kind of a big state. If a health system has hospitals in Houston, Austin, Dallas, and Ft Worth, what is the likelihood that a patient will travel from Houston to Austin to seek care? At 165 miles, I assert, not terribly often. Houston to Dallas at 240 miles, even less likely. However, Fort Worth to Dallas being less than 40 miles, not only possible but depending on the health system, likely. So, the first step in answering the real question would be to look at what percentage of patients regularly move between facilities. If the number of actual patient transfers/moves is low, then the first two methods are probably fine. In the case of a market-based health system, where patients can seek treatment from a number of providers within a large area, such as the Houston or Dallas market, there is a good argument to be made for having at least a market EMPI. In the case of a very large statewide-based health system, it could even make sense to have several market-centric EMPIs that roll into a central archive. In the end, there is no singularly correct answer save that; every system will need to look at the issue as a whole, and then make the cost/benefit decision regarding an EMPI.



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