



Duplicate records compromise EHR investment

Identifying and resolving causes yields long term benefits

Challenge: After installing an expensive electronic health record (EHR) system in 2001, **Children's Medical Center Dallas** realized the system was only as good as the data running through it. The problem was the system had many duplicate records. Physicians were yelling: "We can't find our patients!"

Solution: Engaging Just Associates to properly clean up the dirty data and perform a patient access assessment to identify the root causes of duplicates and help Children's prevent the creation of future duplicate records.

Result: Solving both the current and future problems around duplicate records helped Children's improve the quality of patient care and increase physician acceptance of the new EHR. The duplicate record rate was initially reduced from 22.0% to two tenths of 1% (0.2%) and five years later it remains an exceptionally low 0.14%. The 5 FTEs initially tasked with resolving duplicate records have been reduced to less than 1 FTE.

Children's Medical Center in Dallas made a major financial commitment to an EHR in 2001, but when the data from the old master patient index (MPI) was loaded into the new system, big problems arose. Because the new system's search routine was programmed to deal only with exact matches, something as minor as a misspelled name, or even the lack of a space or a comma between a first and last name, yielded a separate medical record. And when physicians or the medical staff searched those records, previous medical histories, x-rays, laboratory and test results might or might not be available, depending on how the data had been entered.

Essentially, vulnerable young patients were "lost" in the system. A survey of doctors showed 45 percent encountered duplicate records, 25 percent said the duplicate rate was affecting the quality of care their patients received, and 30 percent said they re-ordered tests because of lack of access to previous records.

To deal with the brewing disaster, the hospital instituted an emergency clean-up, assigning the equivalent of five full-time staffers to the task of reconciling duplicate records and activating a "Hot Line" to receive reports of duplicate records in the system. But despite working around the clock, seven days a week, the clean-up staff was not solving the real problem. They were fixing past mistakes, but the Center continued generating more duplicate records every day.

When Just Associates, Inc. arrived on the scene, the hospital was buried under 250,000 duplicate records that took 10 months of clean-up, consulting and training to resolve. The clean-up included an external data analysis using sophisticated person Matching algorithms to identify possible duplicates. Just Associates' staff of fully trained, experienced Patient Identity Experts reviewed the possible duplicates and validated and merged those confirmed to be the same person. Data integrity issues were thoroughly analyzed, quantifying the causes of each and generating action plans to address every cause.

The **Patient Access Consulting** project focused on further determining the causes of the duplicate records and included several actions which contributed to drastically reducing the number of duplicate records created:

- evaluating interface feeds into and out of the EHR for accuracy,
- analyzing user creation rate patterns to identify those staff that required more training,
- completing a comprehensive process review of all registration and scheduling areas including review of policies, procedures and training manuals,
- developing policies and implementing procedures such as standard naming conventions and
- training registration staff to better collect accurate patient data

While the immediate results were impressive, the long term impact on duplicate records is even more noteworthy. The 22.0% duplicate rate was reduced to 0.2% at the end of the project and five years later it remains an exceptionally low 0.14%. The five FTEs initially assigned to managing duplicate records have been reduced to less than 1 FTE. The hot line stopped ringing and staff satisfaction increased. Physician confidence in the EHR improved.

The experience at Children's Medical Center in Dallas shows the benefit of making sure the Master Patient Index is clean of duplicates before merging or upgrading to a new Electronic Health Records system. Additionally, if extra effort is taken to identify and resolve the root causes of duplicate records, the efforts will pay dividends for years.

Duplicate Records Are Costly

For the Children's Medical Center, the results were heartening, not only from a care delivery standpoint but also because of the significant cost-savings that can be realized. 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 clinical care. The most common issue was delay in initiating treatment in the emergency room. Other quality issues included duplicate tests ordered due to lack of access to previous test results, and a delay in surgery due to lack of patient history and physical results. Those records associated with repeat tests or treatment delays averaged about \$1,100 each. Additionally, nearly 11% of the duplicates were associated with bad debt.

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