



Healthcare Financial Management

Duplicate Records Compromise EHR Investment

August 2009

Katherine Lusk, MHSM, RHIA

Installing an expensive electronic health record (EHR) system posed some unexpected challenges for Children's Medical Center in Dallas, when it undertook this project in 2001. Children's Dallas found the new system was only as good as the data that run through it. That lesson came when data from the medical center's old master patient index (MPI)—an index riddled with duplicate records—were loaded into the new system. Suddenly, physicians were screaming that they couldn't find their patients in the system.

Because the new system's search routine was programmed only for exact match searching, 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, critical information such as previous medical histories, X-rays, and 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. Among physicians responding to a survey, 45 percent said they encountered duplicate records, 25 percent said the duplicate rate was affecting the quality of care their patients received, and 30 percent said they reordered tests because of lack of access to previous records.

An analysis of the medical center's data showed that a duplicate medical record cost the organization more than \$96 on average, not counting the time and cost to correct the record. In 4 percent of cases involving confirmed duplicate records, clinical care was affected—for example, emergency department treatment and surgeries were delayed and duplicate tests ordered. Moreover, repeated tests or treatment delays resulting from the duplicate records resulted in about \$1,100 per record, on average, in added costs to the organization, with bad debt being associated with nearly 11 percent of the duplicates.

To deal with the brewing disaster, the medical center instituted an emergency cleanup, assigning the equivalent of five FTEs to reconcile duplicate records and activating a hot line to receive reports of duplicate records in the system. Despite working around the clock, seven days a week, however, the clean-up staff were not solving the real problem. They were fixing past mistakes, but the facility continued generating more duplicate records every day.

When Children's Dallas began a comprehensive clean-up initiative, the medical center found it was buried under 250,000 duplicate records. The problem took 10 months of cleanup, consulting, and training to resolve. The cleanup itself involved an external data analysis using sophisticated person-matching algorithms to identify possible duplicates. 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.

Several other steps were taken, including an evaluation of interface feeds into and out of the EHR for accuracy, an analysis of user creation rate patterns to identify staff who required more training, completion of a comprehensive process review of all registration and scheduling areas, and development of policies and implementing procedures, such as standard naming conventions.

Solving both the current and future problems around duplicate records helped Children's Dallas improve the quality of patient care and increase physician acceptance of the new EHR. The duplicate record rate initially was cut from 22.0 percent to 0.2 percent, and five years out remains an exceptionally low 0.14 percent. The five FTEs initially tasked with resolving duplicate records have been reduced to less than one FTE. The hotline has stopped ringing and staff satisfaction has increased, while physician confidence in the EHR has improved.

Katherine Lusk, MHSM, RHIA, is director, EHR implementation, and the former director, health information management, Children's Medical Center Dallas (katherine.lusk@childrens.com).

August 2009 Healthcare Financial Management