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The Health Record Review

by PETER WITONSKY

How to build a solid footing for patient data

Posted on Tue, Sep 13, 2011 - 03:05 pm

Guest commentary

The transition from paper records to electronic medical records (EMRs) promises to improve healthcare efficiency, clinical decision-making and patient outcomes. The U.S. government is even prepared to provide $19 billion in incentives for hospitals that can demonstrate "meaningful use" of EMRs.

But an EMR is only as good as the data it contains. If the data in the EMR is wrong -- or even if it's right but hours old -- then EMRs are nothing more than rapid-access gateways to inferior data. Analyses of EMR data quality show that the information is often faulty. However, the cause of these inaccuracies can be easily remedied, opening the door for major hospital-wide benefits.

Why data inaccuracies occur

Studies have shown that the actual quality of data in EMRs is not good. In 2006, one study documented 623 sets of vital signs recorded at a 20-bed cardiac step-down unit in Florida. Vital signs errors occurred in 14.9 percent of records.

Another study published in 2007 reviewed ventilator data for 678 patients at a Salt Lake City hospital. The data often took several hours to make its way into the EMR and, as a result, 3.9 percent of the ventilator protocol instructions were generated from data that was incorrect or out of date.

Why do EMRs contain so much faulty data? Consider the data chain. Today, a great deal of patient data is hand-keyed into the EMR; in effect, today's data channel is the nurse. But people serving as data channels are relatively error-prone; entry errors and association errors have to be expected. In addition, many nurses don't have time to enter data into the EMR until the end of their shift. When this occurs, patient data is essentially out of date before it is even entered.

To assess its efficiency in this regard, Texas-based Wise Regional Health System hired a third-party consulting firm and discovered that it took an average of 12 hours for device-generated patient data to make its way into the hospital's EMR. The health system recognized that when it comes to decision-making -- from diagnoses to prescriptions -- doctors and caregivers need real-time data, not data that is no longer relevant.

A fully automated (almost) alternative

How can hospitals improve the quality of the data in their EMRs? The ideal solution is to build a data chain that uses technology -- not just nurses -- for fast, accurate communication of data to the EMR.

This sort of data chain is commonly referred to as medical device integration (MDI), which directly connects a hospital's EMR system to all its medical devices -- from bedside patient monitors to ventilators to standalone devices. No doubt, this kind of automation greatly reduces nurses' documentation responsibilities and increases the time they can spend with patients.

In the absence of MDI, nurses spend incredible amounts of time documenting device data. A 36-hospital study found that nurses spent 81 minutes per shift on patient care. Documentation, on the other hand, demanded 148 minutes per shift -- nearly twice as much time.

MDI solutions address this problem by allowing nurses to review and authenticate automated data, rather than enter it by hand. This process is much less time-consuming than manual data entry. It also ensures data quality. Together, nurses and MDI technologies create a solid footing from which accurate, timely data can be delivered to the EMR.

Benefits of automation in data chains

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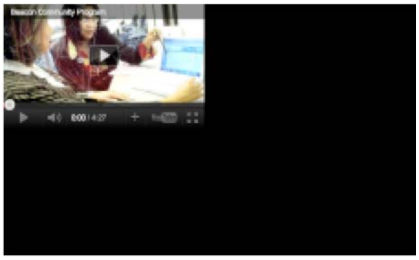

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When hospitals utilize automation and nurse authentication, the integrity of the data within the EMR is greatly enhanced. Issues like transcription errors become all but obsolete. With MDI, data not only becomes more reliable -- it also becomes timelier.

For example, when Wise Regional deployed an MDI solution in its intensive care and cardiac vascular units, data latency (the elapsed time from when patient data is generated to when it is validated and available in the EMR) went from 12 hours to two.

Likewise, at Jefferson Regional Medical Center in Pine Bluff, Ark., the validation of device data used to take an average of 90 minutes. Following the hospital's data-automation efforts, vitals became available nearly in real time.

In addition to these data-latency improvements, MDI solutions also enhance workflows. Because MDI lightens clinicians' documentation workloads, it enables them to spend more time doing what they do best: delivering direct care.

Clinicians at Jefferson Regional experienced this shift following the hospital's integration efforts. In fact, time spent delivering direct care increased by almost one minute per patient. Likewise, clinicians at Wise Regional reported that they spent an average of 30 minutes more per shift delivering direct patient care following the hospital's integration efforts.

Studies have found that increased hours spent on direct patient care have a dramatic impact on patients: They have decreased risk of hospital-related death, are less likely to develop pneumonia, and have shorter hospital stays.

Getting the most out of your data chain
For hospitals looking to the future, quality data in the EMR is a must. And as clinical decision support systems advance, robust and reliable EMRs will become even more critical. But the EMR can only be as good as the data chain from which it feeds.

No doubt, MDI leads to increases in direct care. When used in conjunction with clinician reviews and validation, it also improves the data chain. This, in turn, increases the accuracy and timeliness of EMR data.

Peter Witonsky is president of iSirona, a provider of medical device integration solutions. His 18 years of experience in business development and sales leadership span the healthcare payer, provider and vendor markets. He previously served as director of business development for the Americas at Metrologic and as vice president of business development at Falcon Capital Partners, where he participated in healthcare mergers, acquisitions and recapitalization projects totaling over $200 million.

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