

# Patient Safety Tip of the Week

## October 8, 2013

### EMR Problems in the ED

We've often noted that 2 key areas of the hospital are often poorly integrated with the electronic medical record of most hospitals: the ER and the OR. In many hospitals, electronic medical records were first adopted on inpatient units and only later are emergency departments brought on board, often with modules that do not fit well with the workflow of the emergency department. In other cases, emergency departments have adopted their own electronic medical record programs specifically designed for the ED but not integrating well with the hospital-wide EMR.

Recently there have been several articles in the emergency medicine literature highlighting many of the problems resulting from these issues. In the first, Hill and colleagues ([Hill 2013](#)) looked at the impact of their emergency department electronic medical record on physician workflow. They found that emergency physicians at their hospital spend 44% of their time, on average, entering data into the EMR and only 28% of their time on direct patient care (remaining time was 12% reviewing test results and records, 13% in discussion with colleagues, and 3% on other activities). They estimate that during a typical 10-hour shift an emergency physician averages 4000 mouse clicks!

In another significant article ([Farley 2013](#)) members of the Quality Improvement and Patient Safety Section and Informatics Section of the American College of Emergency Physicians came together to focus on potential benefits and threats seen with emergency department information systems. They identified multiple areas of patient safety concern, including communication failures, wrong-patient/wrong-order entry, poor data display, and alert fatigue.

**Communication failures** are common relating to information systems in the emergency department. Examples given include instances where a verbal order may be given and then the order is duplicated when the physician gets around to inputting the orders in the CPOE system, resulting in the patient receiving a double dose of medication or duplication of a lab test. Also, unfortunately, the EMR often becomes the primary means of communication between healthcare professionals about a patient and often detracts from having face-to-face interactions. EMR's often use templates or providers do cut-and-paste notes and the subsequent notes often make it difficult to summarize the patient's course.

**Poor data display** and **scrolling issues** are common. They provide examples of how critical values may not be flagged in a manner to catch the attention of the emergency physician and cases where a physician might quickly click an “accept all” button and miss an important result.

And, of course, **alert fatigue** is an issue with EMR’s in all settings, the emergency department included.

Their other major issue was **wrong-patient/wrong-orders**. They provided examples of how a busy ED physician, caring for multiple patients simultaneously, can easily be distracted during CPOE and come back and enter orders into the EMR of another patient. As far back as 2008 we speculated that wrong patient errors would be more frequent with electronic medical records than paper medical records (see our May 20, 2008 Patient Safety Tip of the Week [“CPOE Unintended Consequences – Are Wrong Patient Errors More Common?”](#)). In that column we discussed multiple factors that make such errors more likely. One of the key potential solutions is to ensure that appropriate patient identifiers appear on every screen. Our July 17, 2012 Patient Safety Tip of the Week [“More on Wrong-Patient CPOE”](#) highlighted some other interventions designed to reduce such wrong patient errors. Authors of one study ([Adelman 2012](#)) piloted two distinct interventions, an “ID-verify alert” and an “ID-reentry function” that reduced the occurrence of such errors.

One of the interventions we have long recommended is inclusion of patient photographs in the EMR. Several organizations have successfully used photographs to reduce wrong-patient/wrong-order incidents (see our June 26, 2012 Patient Safety Tip of the Week [“Using Patient Photos to Reduce CPOE Errors”](#)). But there may be limitations to patient photographs that impact the emergency department more so than the rest of the hospital. A major one is that often the patient coming to the ED may not look anything like a pre-existing photograph in the EMR (eg. a trauma patient). Also, a patient presenting to the ED may be new to the system and have no pre-existing photograph in the EMR. Therefore, each facility would need to have a policy and procedure in place for rapid capture and posting of the photographs upon the patient’s arrival in the ED.

But one other problem we’ve noted before continues to persist – the fact that a provider may have several applications open simultaneously and they may not be synchronized to show the same patient. For example, an ED physician might have the EMR of a patient open and also have open the PACS system or lab system where he is looking at results on multiple patients. In that scenario it is very easy to return to the EMR thinking you are looking at a different patient. The ideal system to synchronize patients in diverse IT applications is lacking to date.

Authors in the Farley article developed 7 important recommendations for improving problems with emergency department information systems. First is that a **local ED physician “champion”** should be appointed to lead the performance improvement activities for the emergency department information systems. Second, that a

**multidisciplinary IS performance improvement group meet regularly and communicate regularly with the ED leadership and hospital leadership.** Third, there should be a **regular process to review safety issues related to the emergency department information systems** and that prospective risk assessments be done. Fourth, when patient safety issues related to the emergency department information systems are identified, they must be **addressed promptly and in a transparent manner** with the ED personnel, hospital administration, and IT vendors. Related to the latter is a recommendation that **lessons learned be shared** publicly and with other ED's using the same information systems. Specifically, they call for **elimination of the "gag" clauses** common to many vendor agreements that preclude hospitals or hospital personnel from disseminating information about such issues and errors. They also recommend that **changes to information systems in response to patient safety issues be done in a timely fashion and distributed to all installation sites.** And, lastly, they recommend that **"hold harmless" clauses** (in which IT vendors are absolved of all liability) **be removed** from contracts.

**See some of our other Patient Safety Tip of the Week columns dealing with unintended consequences of technology and other healthcare IT issues:**

- June 19, 2007 "[Unintended Consequences of Technological Solutions](#)"
- May 20, 2008 "[CPOE Unintended Consequences – Are Wrong Patient Errors More Common?](#)"
- June 17, 2008 "[Technology Workarounds Defeat Safety Intent](#)"
- August 26, 2008 "[Pattern Recognition and CPOE](#)"
- September 9, 2008 "[Less is More...and Do You Really Need that Decimal?](#)"
- December 16, 2008 "[Joint Commission Sentinel Event Alert on Hazards of Healthcare IT](#)"
- February 2009 "[Healthcare IT The Good and The Bad](#)"
- October 2009 "[A Cautious View on CPOE](#)"
- November 24, 2009 "[Another Rough Month for Healthcare IT](#)"
- April 20, 2010 "[HIT's Limited Impact on Quality To Date](#)"
- June 26, 2012 "[Using Patient Photos to Reduce CPOE Errors](#)"
- June 2012 "[Leapfrog CPOE Simulation: Improvement But Still Shortfalls](#)"
- July 17, 2012 "[More on Wrong-Patient CPOE](#)"
- January 2013 "[More IT Unintended Consequences](#)"

**References:**

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