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Patient Safety Tip of the Week

November 17, 2020

A Picture Is Worth a Thousand Words

Ever since our first electronic health record (EHR) implementation in 2007, we've been advocates of including patient photographs in the EHR as a means of avoiding wrong patient events. It's a common sense solution, but evidence confirming that it actually does reduce such wrong patient errors has been slow to demonstrate. Our March 24, 2020 Patient Safety Tip of the Week "Mayo Clinic: How to Get Photos in Your EMR" showed how the Mayo Clinic was able to get patient photographs in to the HER (Aseem 2020). But that study did not measure the ultimate goal: reduction in patient misidentification errors. In that column we suggested that, if you were to implement such a project in your organization, you might use the RAR (Retract-and-Reorder) methodology (see our July 17, 2012 Patient Safety Tip of the Week "More on Wrong-Patient CPOE") to identify instances where a user initially entered an order on the wrong patient. Now a new study does just that.

Salmasian and colleagues (Salmasian 2020) compared wrong-patient order entry (WPOE) errors between patients visiting the ED who had a photograph in their EHR with those who did not. They found that the risk of WPOE errors was significantly lower when the patient's photograph was displayed in the EHR (odds ratio 0.72). Moreover, this simple intervention was noninterruptive and had minimal risk of alert fatigue.

Many other clinical decision support tools to help avoid wrong patient orders rely on presentation of alerts that can interrupt clinician workflow and lead to alert fatigue. In the current study, inclusion of patient photographs was a passive intervention. Though the study was not a truly randomized controlled study (patients were encouraged to get their photographs taken and included in the EHR as a potential patient safety issue), retrospective comparison of the two cohorts was reasonable.

Wrong patient order errors were measured using the wrong-patient retract-and-reorder (RAR) measure, which is a validated measure endorsed by the National Quality Forum. We've discussed the RAR measure in numerous columns on patient misidentification listed below (see, for example, our July 17, 2012 Patient Safety Tip of the Week "More on Wrong-Patient CPOE").

The hospital instituted a multi-pronged quality improvement campaign to encourage capture of patient photographs into the EHR. Components included educating the ED registration staff of the importance of patient photographs for patient identification and patient safety and educating patients by using posters placed in the waiting area of the ED that explained the importance of patient photographs and inviting them to participate in the campaign. The registration team was provided with equipment to facilitate capture of those patient photographs. To facilitate photograph capture they switched from desktop computers equipped with webcams to mobile devices. Feedback to registration staff showed trends in photograph capture rates.

The researchers looked at over 2.5 million orders on 71,851 patients, of which 23.3% were placed on patients who had a photograph in their EHR. The unadjusted odds ratio (OR) of RAR events in the photograph group vs the no photograph group was 0.72. The odds ratio was even better after adjustment for covariates (OR, 0.57). The authors note that the effect size associated with this strategy was larger than in previously published interventions aimed at reducing WPOE errors, and this strategy has the advantage of being noninterruptive in nature.

The authors did acknowledge some of the barriers encountered in obtaining patient photographs. They note that this can be difficult in the ED setting because of time pressures and because severely ill patients may not be amenable to being asked for or consenting to capturing their photographs. But they note that photographs captured in other settings (at ambulatory clinics, at inpatient admitting offices, or by scanning the patient's identification card at the time of creating a record) are then available and displayed in the EHR when patients are in the ED as well. Many patient portals and mobile apps also allow patients to upload their own photographs. They also acknowledge, as we have often expressed, there is a need for organizations to have a policy of when photographs should be updated to ensure the photographs accurately reflect the patients.

Interestingly, they found that the sickest patients, who were less likely to end up in the photograph group, also had notably lower odds of wrong-patient errors. The authors felt that this could be attributable to the higher level of attention these patients receive from their practitioners, reducing the chances of a wrong-patient error. Or it might be the type of orders placed for critically ill patients being different from orders placed for other patients, such that practitioners are more likely to catch these errors before placing those orders for the wrong patient.

The authors attribute much of the success to high levels of engagement by the registration staff and the patients. They note that this whole process is relatively inexpensive to implement. The costs include the time used to train the staff on taking photographs, time spent by managers of the patient registration team to monitor photograph capture adherence and troubleshoot issues as they arose, and the cost of the equipment used for capturing photographs, and equipment costs. For the study, they only had to purchase 6 handheld devices and supporting accessories for a total of less than $1600, plus estimated annual operating costs for maintenance and replacement of equipment of approximately

$1000. They speculate that the expected savings from improved safety would far outweigh those costs.

Our March 24, 2020 Patient Safety Tip of the Week "Mayo Clinic: How to Get Photos in Your EMR" showed how the Mayo Clinic was able to get patient photographs in to the EHR (Aseem 2020). They did encounter some barriers and it took several PDSA cycles to accomplish their goal but, ultimately, they also concluded that the intervention can be implemented inexpensively and without significant impact on workflow.

The ED is an area particularly prone to wrong-patient order entry errors because clinicians are often caring for multiple patients simultaneously, are multitasking, and often have more than one patient record open at a time. Having more than one record open simultaneously is a significant risk factor for WPOE errors (see our May 21, 2019 Patient Safety Tip of the Week "Mixed Message on Number of Open EMR Records").

The ability to reduce wrong patient orders in a nonobtrusive manner is important. Some interventions that have been successful use alerts that pop up during order entry requiring the clinician to verify the patient's identity. These could contribute to alert fatigue. Our June 26, 2012 Patient Safety Tip of the Week "Using Patient Photos to Reduce CPOE Errors" described how Children's Hospital of Colorado successfully implemented use of patient photographs to reduce CPOE errors (Hyman 2012). Beginning with a nice review of the literature on patient-note mismatches, they implemented tools to help avoid such mismatches during CPOE. First, they modified their CPOE workflow to include a verification screen asking the provider to verify that this is the patient on whom he/she intends to enter orders. They then began taking photographs of patients at admission or registration and including these on the above noted verification screen. They found a dramatic reduction in the number of events of actual ordering on the wrong patient or near-misses. And when such events or near-misses did occur, it was usually in charts that did not have a photograph of the patient. While they could not separate out the impact of the verification screen from that of the photograph, they felt that the photographs played a large role in reducing the number of orders placed in the records of wrong patients. They noted that, unlike other CPOE alerts that have a high likelihood of being ignored, the presence of the large centrally placed photograph is effective in capturing the attention of the CPOE user. They did note that photographs have limitations, particularly for newborns and when pictures are poorly exposed. And they note that photographs need to be updated at appropriate times.

Our December 17, 2019 Patient Safety Tip of the Week "Tale of Two Tylers" showed a glaring example of how patient photographs in the EMR might prevent a wrong patient error. It also described the mechanical steps another hospital uses to get patient photographs into the EMR. In a study by Blanchfield et al. (Blanchfield 2019) the patient photographs were taken when the patient presented to the ED. The ease with which we can today take a digital photograph today and upload it to the EHR enables the use of up-to-date patient photos. In the Blanchfield study, they created a new standard of care and implemented a new workflow for ED registration staff. Using iPod touch devices, ED

registration staff took photos of consenting patients either at the front desk when patients check-in, or at the end of the registration process.

We refer you back to our March 24, 2020 Patient Safety Tip of the Week "Mayo Clinic: How to Get Photos in Your EMR" for a discussion of several other benefits of patient photographs in the EHR. The time has clearly come for healthcare organizations to include patient photographs in their electronic health records.

Some of our prior columns on use of patient photographs in patient safety:

December 2008	"Patient Photographs Improve Radiologists' Performance"
January 12, 2010	"Patient Photos in Patient Safety"
June 26, 2012	"Using Patient Photos to Reduce CPOE Errors"
April 30, 2013	"Photographic Identification to Prevent Errors"
January 19, 2016	"Patient Identification in the Spotlight"
March 26, 2019	"Patient Misidentification"
November 12, 2019	"Patient Photographs Again Help Radiologists"
December 17, 2019	"Tale of Two Tylers"
March 24, 2020	"Mayo Clinic: How to Get Photos in Your EMR"

Some of our prior columns related to patient identification issues:

May 20, 2008	"CPOE Unintended Consequences – Are Wrong Patient Errors More Common?"
November 17, 2009	"Switched Babies"
July 17, 2012	"More on Wrong-Patient CPOE"
June 26, 2012	"Using Patient Photos to Reduce CPOE Errors"
April 30, 2013	"Photographic Identification to Prevent Errors"
August 2015	"Newborn Name Confusion"
January 12, 2016	"New Resources on Improving Safety of Healthcare IT"
January 19, 2016	"Patient Identification in the Spotlight"
August 1, 2017	"Progress on Wrong Patient Orders"
June 19, 2018	"More EHR-Related Problems"
November 2018	"More on Hearing Loss"
March 26, 2019	"Patient Misidentification"
May 21, 2019	"Mixed Message on Number of Open EMR Records"
September 10, 2019	"Joint Commission Naming Standard Leaves a Gap"
December 17, 2019	"Tale of Two Tylers"
March 24, 2020	"Mayo Clinic: How to Get Photos in Your EMR"
June 16, 2020	"Tracking Technologies"

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