View as "PDF version"

Patient Safety Tip of the Week

March 24, 2020

Mayo Clinic: How to Get Photos in Your EMR

Patient misidentification has been a topic of many of our columns. We've long been advocates of including patient photographs in the EMR as a means of reducing patient identification errors. And there are many other benefits of having patient photographs in the EMR.

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 one 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.

But having the equipment and a protocol is the easy part. Actually, achieving a goal of getting photos in all patient EMR's is more complicated. A study from the Mayo Clinic (Aseem 2020) is informative in that regard. A survey of all physicians practicing in their executive medicine division showed overwhelming support of respondents (92.3%) for inclusion of a patient photograph in the upper left corner of the EMR to help them in responding to phone messages and other issues of patient care. But, before they began a quality improvement intervention, the mean weekly measurement of the rate of photograph inclusion in the EMR was only 49.5%. Their multidisciplinary quality improvement team set a goal of increasing the rate of photo inclusion in the EMR by 20%, with a target rate of 70% or greater within 6 months of intervention.

They describe 3 PDSA cycles, each lasting 6 to 9 weeks. In the first, they gave visual cue cards to patients. The cards reinforced the importance of having a picture in their medical record to aid in proper identification, while addressing potential privacy concerns. It also gave them options to get the photos into the EMR.

The second PDSA cycle involved face-to-face meetings between the clinical staff and front office staff. This resulted in changes to workflow that made it easier to capture a patient photograph at the time of check-in for their medical appointment.

The third PDSA cycle focused on feedback and encouragement. Weekly results were shared in clinical staff meetings, on a notice board, and in the form of a poster. Barriers to implementation were discussed and all encouraged ideas to streamline workflow. Encouragement was passed back on to staff to continue with their improved process.

After the first cycle, the photograph inclusion rate increased from 49.5% to 59.4%. After the second cycle, the rate increased to a peak of 74.7%, but then began to regress toward previous levels, After the third cycle, the rate remained relatively static at 76.0%. Overall, after 3 PDSA cycles, the mean weekly rate of patient photographs included in the EMR was 71.4%, meeting their original goal.

The article includes a nice graphic representation of the results on a weekly basis. It demonstrates 2 important elements: first, you will see some week-to-week variation in rates and, second, quality improvement projects need to be monitored for sustainability of results.

Some barriers were noted. These were patients in an executive medicine clinic, many of whom "seek to maintain a low profile" or were otherwise concerned with privacy issues.

Importantly, the researchers did look for unintended consequences. Fortunately, they did not find any. One bonus noted was that clinical assistants found that having a patient photograph allowed them to more easily identify the patient in the waiting area, improving the patient experience.

They also concluded that the intervention can be implemented inexpensively and without significant impact on workflow.

Note that the study did not measure the ultimate goal: reduction in patient misidentification errors. 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. The RAR methodology is also nicely described in the supplement to the Adelman study (Adelman 2019) that we referenced in our May 21, 2019 Patient Safety Tip of the Week "Mixed Message on Number of Open EMR Records". It is a tool we've recommended you use in tracking and monitoring patient misidentification issues as part of your quality improvement program (see our March 26, 2019 Patient Safety Tip of the Week "Patient Misidentification"). The RAR methodology, of course, measures near misses (by definition, it identifies instances where the user recognized the error and corrected it). But it is one of the only proxies we have for assessing the frequency of potential wrong-patient ordering errors.

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.

The Blanchfied study mentioned above (Blanchfield 2019) demonstrated that a passive display of patient photos in the EHR was associated with reduced rates of wrong patient orders and near misses in the Brigham and Women's Emergency Department. While the study looked at how having patient photos in the EHR helped physicians identify the correct patient when entering orders in the EHR, one can readily see how having the photo at the top of every screen (in the EHR or the radiology PACS system), along with their name and DOB and medical record number, would help whomever is searching for an image identify the correct patient.

What could go wrong? The biggest risk would be that the photo could be inadvertently be put into the EMR of the wrong patient. Staff inputting the photos obviously need to comply with 2-factor patient identification. A double check would not be practical for those offices with only a single receptionist and would likely be fraught with error in busy reception areas. But, for those EMR systems that provide patient access, you might ask the patient to confirm their photo is the correct one.

Some have questioned whether photos in the EMR might enable fraud. Actually, using photos in the EMR probably is a deterrent to fraud. Someone fraudulently using the ID of another patient would now likely be recognized as not being the intended patient.

People's appearances change as they age and their appearance may also change for other reasons. They change their hair color or hair length, they lose their hair, they get new glasses, they get facial surgery, etc. So that raises the issue of when and how patient photographs should be taken. Your organization should have a policy on how often or under what other circumstances you should require a new photo. Most DMV's require a new photo every 2 years or so when you renew your driver's license. Your front office staff might also play a role in spotting cases where a new photo should be taken. Many front office staff get popup screens when registering patients that ask useful questions like "Do you have a current advance directive?". You could easily add a question about whether there is an up-to-date photo.

There is also something to be said about **real-time photographs** in certain settings. Our November 12, 2019 Patient Safety Tip of the Week "Patient Photographs Again Help Radiologists" showed how real-time photographs, taken at the same time a radiology study was being done, were of great value not only in identifying the correct patient but also improving the clinical information available to the radiologist. And, in the Blanchfield study (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.

Could facial recognition software eventually play a role? One might anticipate someone calling in to an office might have their identity verified via facial recognition on a cell phone or computer, with matching occurring against the photo in the EMR. Just a thought… That might lead to more confusion given the current state of the art, but who knows in the future? And you'd have to figure out what would happen with identical twins.

The Mayo system was thought to be especially helpful when clinicians were talking to patients on the phone (the photo reminding them about the patient). We think the most important value of the photo is when you search on a patient name in the EMR and the EMR truncates to the first result meeting the search criteria. You then have the opportunity of seeing a photo that may tell you it's the wrong patient.

There, of course, are other benefits to having patient photographs in the EMR. In our July 28, 2009 Patient Safety Tip of the Week "Wandering, Elopements, and Missing Patients" we briefly mentioned using photographs of patients when broadcasting an alert for a missing patient. We recommend that you include in your IT system a digital photograph of patients you identify as being at risk for wandering and elopement. Many communities, often in conjunction with their local chapter of the Alzheimer Association, have programs where families provide photos of their relatives with Alzheimer's Disease or other dementia to the local police department to facilitate searches when such individuals go missing.

Inclusion of patient photographs would be a logical tool to use in avoiding wrong patient surgeries or mix ups in medication administration. In fact, there are programs that have used patient photographs to reduce the risk of patient misidentification during medication administration (AHRQ Health Care Innovations Exchange). The JPS Health Network in Fort Worth, Texas implemented such a system on its psychiatry units. They first implemented it on adolescent psychiatry in 2000 then, based on success of that program, extended it to their adult psychiatry service in 2006. They noted that this additional method of correct patient identification is especially needed on psychiatry because patients frequently remove their wristband identifications and may be unable or unwilling to respond to questions at the time of medication administration. In the year after

implementation on the adult unit, there were no misidentification errors on either unit. Reappearance of misidentification errors a year later led to a reeducation effort and such errors again fell to almost zero.

Radiologists have also found patient photographs to be helpful. In our December 2008 What's New in the Patient Safety World "Patient Photographs Improve Radiologists' Performance" we noted a paper presented at the Radiological Society of North America's annual meeting showing that inclusion of photographs of patients improved accuracy of radiologists' reports. Putting a photograph of the patient aside their images on a PAC screen resulted not only in the radiologists feeling more empathy toward the patient but they also identified more incidental findings (the files were chosen because of incidental findings in this randomized study) without taking more time to review the images.

Another study (Ridley 2012) demonstrated that including patient photographs in PACS systems likely leads to fewer misidentification errors. Researchers at Emory University developed a low-cost system for obtaining patient photographs at the time an imaging procedure was being done and integrating them via wireless connection with the images going to their PACS system. They then gave radiologists imaging studies to read that purposefully including some instances of misidentification. Those reading without patient photographs picked up only 12.5% of the misidentified patients. Those reading with the patient photographs detected 64% of the errors.

Our November 12, 2019 Patient Safety Tip of the Week "Patient Photographs Again Help Radiologists" showed how real-time photographs, taken at the same time a radiology study was being done, were of great value not only in identifying the correct patient but also improving the clinical information available to the radiologist. Another article detailed how digital photographs can be integrated with medical imaging studies (Ramamurthy 2013).

So, it's pretty clear that use of patient photographs has an important role in multiple aspects of patient safety. The current Mayo Clinic study provides some useful guidance on how your organization can promote the use of patient photos in the EMR.

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"

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"

References:

Blanchfield BB, Salmaisian H, Landman A. Abstract #56. Adding Patient Photos to the Electronic Health Record to Improve Patient Identification and Reduce Wrong Patient Order Errors. Ann Emerg Med 2019; 74(4s): S22-23 October 2019
https://www.annemergmed.com/article/S0196-0644(19)30733-4/fulltext

Aseem S, Ratrout BM, Litin SC, et al. A Process of Acceptance of Patient Photographs in Electronic Medical Records to Confirm Patient Identification. Mayo Clinic Proceedings: Innovations, Quality & Outcomes 2020; 4(1): 99-104
https://mcpiqojournal.org/article/S2542-4548(19)30152-3/fulltext

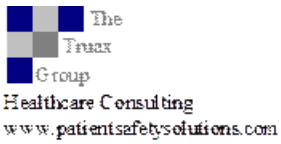
Adelman JS, Applebaum JR, Schechter CB, et al. Effect of Restriction of the Number of Concurrently Open Records in an Electronic Health Record on Wrong-Patient Order Errors. A Randomized Clinical Trial. JAMA 2019; 321(18): 1780-1787
https://jamanetwork.com/journals/jama/fullarticle/2733207

Hyman D, Laire M, Redmond D, Kaplan DW. The use of patient pictures and verification screens to reduce computerized provider order entry errors. Pediatrics 2012; 130(1): e211-e219
https://pediatrics.aappublications.org/content/130/1/e211?download=true

AHRQ Health Care. Innovations Exchange. Innovation Profile: Use of Photographs as Second Means of Identifying Patients on Psychiatry Units Virtually Eliminates Medication Errors Related to Misidentification. Last Updated: 10/09/2013 https://www.innovations.ahrq.gov/profiles/use-photographs-second-means-identifying-patients-psychiatry-units-virtually-eliminates

Ridley EL. Integrating digital photos within PACS may cut ID errors. AuntMinnie.com June 20, 2012 http://www.auntminnie.com/index.aspx?sec=sup&sub=pac&pag=dis&ItemID=99747

Ramamurthy S, Bhatti P, Arepalli CD, Salama M, Provenzale JM, Tridandapani S. Integrating patient digital photographs with medical imaging examinations. J Digit Imaging 2013; 26(5): 875-885 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3782605/pdf/10278_2013_Article_9579.pdf



http://www.patientsafetysolutions.com/

Home

Tip of the Week Archive

What's New in the Patient Safety World Archive