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Patient Safety Tip of the Week

November 12, 2019

Patient Photographs Again Help Radiologists

We've long been advocates of including patient photographs as a patient safety tool. But there has been a relative dearth of studies demonstrating their utiliy in this regard.

In our December 2008 What's New in the Patient Safety World column "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.

Since that time, work out of Emory University has shown how else patient photographs can be very useful to radiologists. First, a small study (Tridandapani 2013) looked at whether facial and chest photographs obtained simultaneously with radiographs might increase radiologists' detection rate of labeling errors. The researchers obtained simultaneous portable radiographs and photographs of 34 patients. They created multiple pairs of radiographs, some of which had a true match and some of which were mismatched.). They were then given a second set of 20 pairs containing mismatches but photographs of the patients obtained at the time of imaging were attached to the radiographs. They then asked radiologists to read these blindly (they were also not told the purpose of the photographs). The error detection rates with photographs was 64%, compared to only 12.5% without photographs. Moreover, the average interpretation times without and with photographs were 35.73 and 26.51 minutes, respectively.

Then, another study (Sadigh 2015) estimated the prevalence of reported near-miss wrong-patient events in radiology at two large academic hospitals. They searched their databases for reports containing the phrases "incorrect patient" or "wrong patient." These imaging reports were categorized into either mislabeled or misidentified patient or wrong dictation or report events. The mislabeling-misidentification events involved patients whose images were incorrectly placed in another patient's folder. In wrong dictation or report events, a patient's images were placed in the correct imaging folder, but another patient's images were used in error for dictation of the report. The estimated event rate was 4 per

100,000 examinations (mislabeling-misidentification, 52%; wrong dictation, 48%), with monthly averages of 0.7 mislabeling-misidentification events and 0.6 wrong dictation events was 0.6. Wrong dictation reports were usually identified fairly rapidly but the median time for mislabeling-misidentification reports to be identified was 22 hours. and for wrong dictation reports was 0 hours. Portable chest X-rays were were the modality most often involved (69% of reported mislabeling-misidentification and 44% of wrong dictation events). Both types of events were more common on inpatients and more common when done during off hours.

So then, Emory researchers (Tridandapani 2019) set out to see whether inclusion of patient photographs might help reduce such errors during portable X-rays. They attached smart cameras to the portable radiology systems and took wide-angle photos of the patients simultaneously with the X-rays and the photos were included in the PACS system alongside the radiographic images. Their preliminary data detected 2 errors in the first 8000 cases. That would be a higher rate than the estimated event rate was 4 per 100,000 examinations in the study noted above. However, these numbers are still small so the statistical significance is unknown at this time.

But, the wide-angle photographs added clinical context as well. For example, the radiologists can see external portions of lines or tubes on the photographs and that helped them in determining placement of items like feeding tubes. That saved considerable time in reading and reporting results. They also noted that the simultaneous patient photographs helped avoid confusion about laterality when individual limbs were X-rayed. The authors conclude that their initial use such point-of-care photographs in cases ranging from cardiothoracic and abdominal imaging to musculoskeletal imaging was clinically beneficial.

While our initial interest in patient photographs was largely to help avoid wrong patient events, these studies out of Emory show a much broader patient safety potential. Rather than using a single facial photo taken, for example, on admission, these photos are taken simultaneously with the radiographs and add considerable clinical context. Kudos to the Emory researchers for this valuable addition to the patient safety armamentarium!

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"

References:

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Sadigh G, Loehfelm T, Applegate KE, Tridandapani S. JOURNAL CLUB: Evaluation of Near-Miss Wrong-Patient Events in Radiology Reports. American Journal of Roentgenology 2015; 205(2): 337-343
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Tridandapani S, Bhatti P, Krupinski E, et al. Initial Experience With Patient Visible Light Images Obtained Simultaneously With Portable Radiographs. American Journal of Roentgenology 2019; 0 0:0, 1-4 Published online October 8, 2019
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