

What's New in the Patient Safety World

September 2017

Clinical Decision Rule Success

Use of clinical decision rules can have multiple advantages for hospitals, emergency departments, payers, and patients. For example, use of any of the several clinical decision rules for CT scanning in cases of minor head trauma may reduce the number of unnecessary CT scans, reduce ED throughput times, reduce hospital costs, and even reduce costs of the “diagnostic cascade” that follow discovery of incidental findings.

In our March 2017 What's New in the Patient Safety World column “[Update on CT Scanning after Minor Head Trauma](#)” we pointed out that there’s no shortage of clinical decision rules guiding the ordering of CT scans in patients with minor head trauma. We have the Canadian CT Head Rule ([Stiell 2001](#)), the New Orleans Head CT Rule ([Haydel 2000](#)), and the NICE guideline ([NICE 2014](#)) in adults. And for children we have CHIP ([Smits 2007](#)), CATCH ([Osmond 2010](#)), and the NICE guideline ([NICE 2014](#)).

Perhaps the most frequently used clinical decision rule is the Canadian CT Head Rule (CCHR). In that previous column we noted a study which looked at the appropriateness of head CT scans for minor head trauma using the CCHR as the guideline ([Klang 2017](#)). The authors retrospective reviewed 955 head CT scans and found 10.9% were not indicated according to the CCHR. And, for patients under the age of 65, 37.3% of scans ordered were not indicated according to that rule. The authors suggested that interventions to reduce the frequency of non-indicated head CT scanning might include targeted education of staff members, protocol implementation, and implementation of computerized decision rules.

Well, clinicians at Kaiser Permanente did just that. First, clinicians and researchers did an electronic health record (EHR) database and chart review of adult ED trauma encounters receiving a head CT from 2008 to 2013 ([Sharp 2017a](#)). They found that about one-third of head CTs performed on adults with head injury might be avoidable by applying the CCHR and that avoidance of CT in such patients is unlikely to miss any important injuries. Then they implemented the CCHR protocol in 13 Southern California ED’s using a multicomponent intervention included clinical leadership endorsement, physician education, and integrated clinical decision support ([Sharp 2017b](#)). Overall, they noted a 5.3 percent reduction in CT use and an increase in CT-identified injuries. Twelve of the

13 emergency departments reduced head CT following the implementation of the intervention.

Though the reduction in CT scans was more modest than they would have predicted, it certainly is a start in the right direction. Keys to success were likely the buy-in of clinical leaders, pilot testing, physician education through an e-learning module, and integration of the protocol into the electronic medical record ([Kaiser Permanente 2017](#)).

Some of our previous columns on CT scans in minor head trauma:

April 16, 2007 “[Falls With Injury](#)”

July 17, 2007 “[Falls in Patients on Coumadin or Heparin or Other Anticoagulants](#)”

March 2010 “[CATCH: New Clinical Decision Rule for CT in Pediatric Head Trauma](#)”

November 23, 2010 “[Focus on Cumulative Radiation Exposure](#)”

June 5, 2012 “[Minor Head Trauma in the Anticoagulated Patient](#)”.

July 8, 2014 “[Update: Minor Head Trauma in the Anticoagulated Patient](#)”

January 2017 “[Still Too Many CT Scans for Pediatric Appendicitis](#)”

March 2017 “[Update on CT Scanning after Minor Head Trauma](#)”

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