

# **Implementing a Diagnostic Error Trigger Tool in Pediatric Emergency Departments and Urgent Care Sites**

*Katherine Turner, Stephen Gradwohl, Irina Topoz, Joe Grubenhoff*

## **Background**

Diagnostic error (DE) is a significant source of morbidity and mortality. Identifying sources of DE and opportunities for healthcare improvement requires continuous case review. However, no systematic approach to screening large volumes of patients for DE has been described in the pediatric acute care setting. It's also unknown to what extent reviewers can agree on presence or absence of DE. This project sought to use the Safer Dx Instrument within interprofessional review teams to identify cases of DE and subsequently design and implement an efficient trigger tool for DE in the pediatric acute care setting based on common characteristics between cases of DE, with the goal of using the tool to identify cases that warrant further team-based review. We hypothesized that cases in which a patient was seen in the ED and returned to care within seven days resulting in a hospital admission would be more likely to contain a DE. Among these cases, we hypothesized that there would be identifiable common characteristics between them such that a profile of a potential DE could be established.

## **Methods**

Cases for review were identified from the medical records of EDs and UC centers across the Children's Hospital Colorado (CHCO) health system and included all patients who were seen at any CHCO ED/UC site between April 2018 and September 2018, discharged home, subsequently returned to care within seven days of initial visit, and were ultimately admitted to the hospital. Each case was reviewed by an interprofessional review team which included ED providers and registered nurses (RNs). Team members were presented with all the clinical data associated with each episode of care including provider notes, vital signs, laboratory results, and diagnostic imaging. They were advised to review all available data independently of other reviewers and to complete the Safer Dx Instrument without discussing their findings with other reviewers.

## **Results**

There were 165 cases reviewed by two interprofessional review teams. Of the cases reviewed, 21 (12.7%) had significant agreement among reviewers on presence of a DE. Cases determined to contain a DE were compared to those without a DE on the following characteristics: median patient age in years, location of initial visit, number of visits, time of arrival on each visit up to four visits, days between the initial visit and the final visit, and days between each visit. None of the characteristics reviewed revealed significant differences between the two groups.

## **Conclusions**

This study demonstrates that interprofessional case review is feasible utilizing a standardized review template. While a consistent set of characteristics was not discovered among the DEs identified in this study, the work summarized here lays the groundwork for future efforts in healthcare improvement. By continuing to iterate and increasing the efficiency of the case review process, we hope to maximize the rate at which we improve the safety of healthcare delivery to decrease the risk of morbidity and mortality to our future patients.