

What's New in the Patient Safety World

August 2018

Pediatric Adverse Events

Trigger tools have provided a good way to identify adverse events in hospitalized patients and in other healthcare settings (see our prior columns on trigger tools listed below). Most of the early work on trigger tools was done in adult patients but Stockwell et al. ([Stockwell 2015](#)) developed and tested a trigger tool that would identify the most common causes of harm in pediatric inpatient environments. Expanding upon that, the safety surveillance tool GAPPS (Global Assessment of Pediatric Patient Safety) has been validated and now studied in multiple children's hospitals.

A new study shows that adverse event (AE) rates remain high in hospitalized pediatric patients and have not substantially improved over time ([Stockwell 2018](#)). Researchers used the GAPPS tool to measure temporal trends in AE rates among hospitalized children from 2007 to 2012. They randomly selected pediatric inpatient records from 16 teaching and nonteaching hospitals.

Among 3790 records reviewed, they found 414 AEs (19.1 AEs per 1000 patient days) and 210 preventable AEs (9.5 AEs per 1000 patient days). On average, teaching hospitals had higher AE rates than nonteaching hospitals (26.2 vs 5.1 AEs per 1000 patient days). The most frequently identified AE's were hospital-acquired infections, intravenous line complications, gastrointestinal events, respiratory-related events, and "other". As we'd expect, chronically ill children had higher AE rates than patients without chronic conditions (33.9 vs 14.0 AEs per 1000 patient days). They found that neither teaching nor nonteaching hospitals experienced significant variations in AE rate over the time of the study.

In terms of severity, 1.2% of AEs resulted in permanent harm, 10.1% were potentially life-threatening, 0.7% were fatal or contributed to a patient's death. Perhaps most striking is that 50.7% were considered potentially preventable.

In the accompanying editorial, Quinonez and Schroeder ([Quinonez 2018](#)) noted some prior studies had suggested AE rates were decreasing but that the GAPPS tool is better at identifying AE's. But they also note that GAPPS may miss some harms, such as those related to the "diagnostic cascade" that results from overtesting.

Though the analysis did not look at trends after 2012, the findings suggest that adverse events in pediatric patients remain at high levels and that many are potentially preventable. Use of trigger tools like GAPPS can help with identification of such adverse events and help hospitals and health systems identify areas in need of improvement.

Some of our prior columns on trigger tool methodology:

- October 30, 2007 [“Using IHI's Global Trigger Tool”](#)
- April 15, 2008 [“Computerizing Trigger Tools”](#)
- January 2011 [“No Improvement in Patient Safety: Why Not?”](#)
- May 2011 [“Just How Frequent Are Hospital Medical Errors?”](#)
- March 2013 [“Diagnostic Error in Primary Care”](#)
- January 2014 [“Trigger Tools to Prevent Diagnostic Delays”](#)

References:

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