The Joint Commission Journal on Quality and Patient Safety®

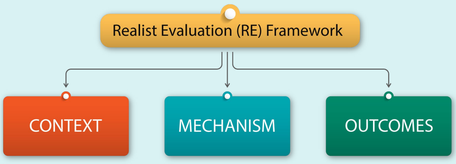
Realist Evaluation Framework Guides Improvement of Pediatric Rapid Response System

Rapid response (RR) systems are widely used to detect and manage clinically deteriorating patients and prevent out-of-ICU cardiopulmonary arrest (CPA) and mortality. Because evaluations of RR systems traditionally rely on CPA and mortality, rare in children, alternative pragmatic metrics for pediatric RR evaluation are needed.

A study from the April 2022 issue of *The Joint Commission Journal on Quality and Patient Safety (JQPS)* used critical deterioration (CD) as a proxy for CPA in reviewing clinical outcomes after RR events to appraise pediatric RR systems and identify improvement opportunities.

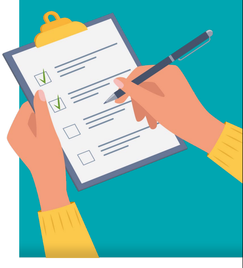
THE STUDY

The realist evaluation (RE) framework posits that systems are composed of social interactions affected by contextual, mechanistic, and outcome factors. The study used the RE framework to review significant pediatric RRs, defined as REACT (Rapid Escalation After Critical Transfer) events. REACT events were identified, debriefed, and revised to recognize and act on RR mechanistic and contextual deficiencies.



3 PDSA (PLAN, DO, STUDY, ACT) INTERVENTIONS:

- **PDSA 1 –** Planned and implemented a process to identify and review REACT events.
- **PDSA 2 –** Deployed an automated identification of REACT events using electronic medical records (EMRs), expanded review process to satellite campuses, and expanded REACT database to include categorization of gaps or deficiencies into specific crisis resource management (CRM) categories.
- **PDSA 3 –** Assessed burden caused by the REACT process through team survey and solicited suggestions for improvement.



STUDY RESULTS

2015-2019: 5,581 RR events across system

67% required transferred to ICU

25% identified as REACT events

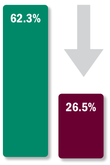
BY JANUARY 2016
identified **100%** of REACT events

BY JANUARY 2017
completed debrief and reviewed **90%** of REACT events

APRIL 2018 TO TODAY
maintained **100%** identification and review of all REACT events

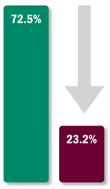
Using the RE framework, the study found that location, staffing, workload, patient characteristics (contextual) and nurse activation (mechanistic) were some of the factors impacting RR outcomes.

Proportion of REACTS with CRM deficiencies



decreased from **62.3%** to **26.5%**

Proportion of REACTS with multiple deficiencies



decreased from **72.5%** to **23.2%**

CPAs outside ICUs

decreased from **15** to **3** per year

IMPROVEMENT ACTIONS:

- Implemented quality improvement (QI) processes to improve activation and response elements of RR
- Addressed hospital resource allocation and policy clarification for specific issues and patient populations
- Disseminated information and education across system
- Shared positive feedback organizationwide to imbue culture of safety

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The RE framework facilitated holistic assessment of an RR system. Review of REACTS was feasible, sustainable, and yielded useful information to guide systemwide improvement.

To learn more about this study visit https://www.jointcommissionjournal.com/article/S1553-7250(22)00004-6/fulltext