

Success of a Resident-Led Safety Council: A Model for Satisfying CLER Pathways to Excellence Patient Safety Goals

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ABSTRACT

Background The Accreditation Council for Graduate Medical Education (ACGME) Clinical Learning Environment Review (CLER) program focuses on aspects of the graduate medical education learning environment, such as patient safety. Data from CLER site visits reveal that many resident physicians do not receive adequate training on patient safety.

Objective We evaluated a pediatric resident-led safety council as a method to meet CLER Pathways to Excellence patient safety objectives.

Methods The Duke Pediatric Residency Safety Council (PRSC) created an infrastructure for residents to participate in department safety efforts, review safety events, and act as leaders for safety initiatives. Annual surveys were distributed to graduate medical education trainees through the institution's patient safety center and the PRSC. Survey results of safety attitudes were compared over time within the pediatrics program and between pediatrics and nonpediatrics trainees at the institution. Resident-submitted safety reports were tracked through an institutional safety event repository.

Results From 2013 to 2017, the percentage of residents who strongly agreed that they could submit a safety report doubled (from 35% [6 of 17] to 73% [22 of 30], $P = .011$). The average number of safety reports submitted by a pediatrics resident per year did not significantly change during this period (from 3.0 to 3.8, $P = .11$). In 2017, 90% of pediatrics residents (27 of 30) agreed or strongly agreed that their concerns would be addressed if they entered a safety report.

Conclusions The council addressed 5 of the 7 CLER Pathways to Excellence in patient safety.

Introduction

The Accreditation Council for Graduate Medical Education (ACGME) implemented the Clinical Learning Environment Review (CLER) program to provide feedback designed to improve how institutions teach residents and fellows to provide quality patient care.¹ The CLER Pathways to Excellence program has 6 focus areas, 1 of which is patient safety. Within the category of patient safety, CLER describes 7 different pathways: (1) reporting of adverse events, close calls (near misses), and unsafe conditions; (2) education on patient safety; (3) culture of safety; (4) resident/fellow experience in patient safety investigations and follow-up; (5) clinical site monitoring of resident/fellow engagement in patient safety; (6) clinical site monitoring of faculty member engagement in patient safety; and (7) resident/fellow education and experience in disclosure of events.¹ Engaging residents in patient safety is challenging, and programs struggle to meet these goals.^{2,3}

The 2016 CLER National Report of Findings⁴ revealed that few trainees were actively involved in developing strategies to improve patient safety. Less than half of trainees had submitted a patient safety report or participated in an interprofessional patient safety investigation. Across various institutions, residents routinely described the system for responding to patient safety reports as a “black box.”⁴ Therefore, some institutions have developed resident patient safety and quality councils. These councils are typically institution-wide, and while partially led by residents, they usually involve significant faculty commitment and financial support.^{2,5,6}

This article assesses the ability of a resident-led council to engage residents in patient safety and satisfy the CLER patient safety pathways by using data from annual surveys, safety reports, and completed action items.

Methods

The Duke Pediatric Residency Safety Council (PRSC) was established in 2013 as a resident-led organization in the Department of Pediatrics at Duke University Hospital. Details on the council's elements and structure have been previously described.⁷

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Editor's Note: The online version of this article contains a longer version of TABLE 2, with additional selected action items.

Approximately 20% of pediatrics residents participate in the PRSC every year. Each year, the PRSC comprises 2 to 3 senior resident leaders, 7 to 10 junior resident members, 1 chief resident, and 1 to 3 faculty volunteers. Resident and faculty council members on average contribute less than 5 hours per month, which includes a monthly evening meeting. Council leaders organize, lead, and record minutes of meetings. The council does not receive or require any financial or administrative support.

The PRSC interventions include providing resident education on the use of the institutional safety reporting system (SRS), reviewing hospital safety reports involving pediatrics trainees, organizing multidisciplinary morbidity and mortality (M&M) conferences, and completing action items to address identified systems-level safety concerns and disseminating the results to trainees. The M&M conferences are prepared and presented by residents with faculty supervision using a systems-based approach and are generated from residents' safety reports. During these regularly scheduled educational conferences, residents and other multidisciplinary participants use a modified Learn from Defects Tool⁸ template to identify factors contributing to medical errors.

The Duke Patient Safety Center, part of the Duke University Health System, anonymously surveys trainees of all graduate medical education (GME) programs every other year to assess the current culture of safety using a modified version of the Safety Attitudes Questionnaire (SAQ). The SAQ has validity evidence in measuring attitudes and perceptions relevant to the safety climate and has been used with health care workers including residents.⁹ Aggregate data of SAQ results for GME trainees were shared with the PRSC for analysis. Additionally, the PRSC assesses pediatrics and medicine-pediatrics residents annually using a survey created by the council and designed to evaluate resident perception and knowledge of patient safety concepts.⁷

The Duke University Medical Center Institutional Review Board reviewed and declared this study exempt.

Duke University Hospital tracks and reports safety events on a computerized system (RL6, RL Solutions, Cambridge, MA). Automated reports showing the number of SRS reports per month, grouped by type of resident, were generated from July 2014 to June 2015 and from July 2016 to June 2017. Categorical and continuous survey outcomes were analyzed by chi-square and Student's *t* tests, respectively.

Results

Twenty-six of 46 (57%) pediatrics residents completed the 2016 SAQ compared with 450 of 955 (47%) of

the other trainees. Thirty of 70 (43%) of the categorical and combined pediatrics residents completed the 2017 PRSC annual survey.

TABLE 1 shows how the PRSC actions correspond to CLER safety pathways.¹ The number of safety reports submitted by pediatrics residents did not significantly change after the initiation of the PRSC (from 3.0 reports per resident per year in 2014–2015 to 3.8 in 2016–2017, $P = .11$). During that same period, the number of reports entered by nonpediatrics trainees was unchanged (1.1 reports per trainee per year in 2014–2015 and 2016–2017, $P = .95$). Additionally, the annual PRSC survey revealed the percentage of residents who strongly agreed that they could submit an SRS report doubled from 35% (6 of 17) in 2013 to 73% (22 of 30) in 2017 ($P = .011$).

To date, the PRSC has led 38 M&M conferences over 5 years. These conferences generated more than 50 action items completed by the PRSC (TABLE 2, with additional selected action items provided as online supplemental material).

Ninety percent of pediatrics residents (27 of 30) agreed or strongly agreed that their concerns would be addressed if they entered a safety report when they were surveyed by the PRSC in 2017. In the 2016 SAQ, 92% of pediatrics residents felt that medical errors were handled appropriately compared with 76% of nonpediatrics residents and fellows (24 of 26 versus 238 of 315, $P = .052$). No significant differences were found between pediatrics residents and other residents and fellows for the following items: feeling safe to be treated (in this institution) as a patient, feeling encouraged by others to report safety concerns, and feeling as though the culture in their work setting made it easy to learn from others' mistakes.

Discussion

A resident-led safety council addressed 5 of 7 CLER Pathways to Excellence in patient safety. The PRSC promotes resident safety event reporting, provides education on patient safety, fosters a culture of safety, develops experience in follow-up after a safety event, and institutes resident-focused clinical site monitoring.

To our knowledge, this is the first report to demonstrate positive outcomes from a resident-led safety council. Other residency safety councils have been described, but evidence of their success in engaging residents in patient safety has not been documented.^{5,6} In this intervention, the high confidence that residents place in safety reports to address concerns could be attributed to the visibility of M&M conferences and resulting action items. While there

TABLE 1

Actions Taken by Duke Pediatric Residency Safety Council (PRSC) to Meet Clinical Learning Environment Review (CLER) Patient Safety Pathways

CLER Patient Safety (PS) Pathway	Properties	PRSC Actions to Address Property
PS pathway 1: reporting of adverse events, close calls (near misses), and unsafe conditions	Residents, fellows, faculty members, and other clinical staff members (nurses, pharmacists, etc) know how to report PS events at the clinical site.	The percentage of residents who "strongly agree" that they can enter a safety reporting system report has doubled during the time of PRSC.
PS pathway 1: reporting of adverse events, close calls (near misses), and unsafe conditions	Residents/fellows report PS events via the clinical site's preferred system.	Pediatrics trainees submitted more safety reports than nonpediatrics trainees in 2016–2017 (3.8 versus 1.1 reports per trainee per year, $P < .001$).
PS pathway 2: education on PS	Residents/fellows receive PS education that includes information specific to the clinical site.	Targeted resident education comprised 40% of action items completed in response to safety reports.
PS pathway 2: education on PS	Residents/fellows are engaged in PS educational activities where the clinical site's systems-based challenges are presented, and techniques for designing and implementing system changes are discussed.	PRSC is resident led. M&M conferences and action items are developed and implemented by residents with faculty guidance.
PS pathway 2: education on PS	The clinical site's PS education program is developed collaboratively by PS officers, residents/fellows, faculty members, nurses, and other staff members to reflect the clinical site's PS reporting processes, risk mitigation systems, experience, and goals.	M&M conferences are regularly attended by students, residents, fellows, faculty, nurses, pharmacy, hospital safety leadership, and applicable clinical support staff (eg, phlebotomy).
PS pathway 3: culture of safety	Residents/fellows and faculty members perceive that the clinical site provides a supportive culture for reporting PS events.	96% of pediatrics residents feel encouraged to report safety concerns.
PS pathway 3: culture of safety	The clinical site conducts culture of safety surveys with residents/fellows and faculty and staff members.	Both the PRSC and the graduate medical education office perform culture of safety surveys among trainees.
PS pathway 4: resident/fellow experience in PS investigations and follow-up	Residents/fellows participate as team members in real or simulated interprofessional clinical site–sponsored PS investigations (such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions).	The templated Learn from Defects Tool is utilized at M&M conferences led by PRSC. These conferences are open to all pediatrics residents and are well attended.
PS pathway 5: clinical site monitoring of resident/fellow engagement in PS	The clinical site monitors resident/fellow reporting of safety events.	The number of resident-submitted safety reports is measured, and reports are reviewed by the PRSC.
PS pathway 5: clinical site monitoring of resident/fellow engagement in PS	Data from the monitoring process are used to develop and implement actions that improve patient care.	PRSC has completed over 50 action items stemming from resident-submitted safety reports.
PS pathway 6: clinical site monitoring of faculty member engagement in PS	Not addressed by PRSC.	
PS pathway 7: resident/fellow education and experience in disclosure of events	Not addressed by PRSC.	

Abbreviation: M&M, morbidity and mortality.

TABLE 2

Example Action Items Completed By the Duke Pediatric Residency Safety Council

Action Item	Category
Added door signs to notify of “nothing by mouth” status and to highlight high-risk medications for patients receiving methotrexate.	Culture of safety
Updated abnormal vital sign limits and provider notification parameters in the electronic health record for pediatrics patients.	Electronic health record
Developed a handoff template for postcatheterization cardiology patients.	Interdepartmental communication
Held department-wide educational conference about cognitive errors.	Resident education
Standardized respiratory equipment in each patient’s room by age.	Supplies

was not a statistically significant increase in patient safety reports, increasing the number of safety reports submitted was not an explicit aim of the PRSC, and the resident reporting rate in pediatrics was already relatively high at baseline.

There were several limitations to this study. Other institutional initiatives to increase safety reporting by residents were implemented in 2014–2015, including a GME-wide safety council and a monetary incentive for trainee SRS reporting. The strong safety culture within pediatrics may have been further fostered by these initiatives and the many senior pediatrics faculty who have roles in the Duke Patient Safety Center. In addition, the SAQ has validity evidence, but the PRSC survey does not; therefore, respondents may have interpreted questions differently than intended. No adjustment for multiple comparisons was made, so there is a risk that some of the associations reported could be spurious. Finally, the PRSC model may not be generalizable to smaller residency programs or nonpediatrics programs.

The yearly turnover of resident leadership brings fresh enthusiasm and helps maintain council sustainability, allowing faculty mentors to assume a primarily supportive role. We expect that this model would be cost effective, given the minimal financial investment needed. Sustainability and cost effectiveness could be topics of future studies. We would also like to identify and study measurable behavior changes as a result of shifts in safety culture.

Conclusion

The creation of a resident-led council can improve the way that patient safety concerns of trainees are addressed, educate residents about safety processes,

and facilitate M&M conferences. Such a council could help training programs address patient safety pathways established by the CLER Pathways to Excellence program.

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