A 'PEaRL' of Support and Cooperative Learning: A Pilot Study Shifting the Sands of the Dreaded Morbidity and Mortality Conference

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ABSTRACT

Background: When unanticipated and/or poor patient outcomes occur, clinicians frequently experience guilt, anger, psychological distress, and fear, which can be intensified by traditional morbidity and mortality conferences.

Methods: The Pediatric Event Review and Learning (PEaRL) curriculum was developed to discuss unanticipated and/or poor patient outcomes and foster support while highlighting foundational safety concepts. Pre- and post-implementation evaluations of quarterly cased-based sessions were completed.

Results: All respondents endorsed that unanticipated and/or poor patient outcomes affected their mood, well-being, and functioning. Post-implementation of the PEaRL curriculum, significantly more respondents endorsed existence of a safe environment and structured format to discuss these outcomes, as well as feeling more supported.

Discussion: The PEaRL curriculum provides a valuable opportunity for trainees and experienced clinicians alike to explore and discuss unanticipated and/or poor patient outcomes while addressing key patient safety principles

BACKGROUND

When unanticipated and/or poor patient outcomes (UPPO) occur, health care providers frequently experience guilt, anger, frustration, psychological distress, and fear.[1] For individual clinicians, distress can be intensified by morbidity and mortality reviews that are solely focused on the critique of care and may diminish learning opportunities these reviews could offer. Despite efforts to create an environment of "Just Culture" with shared accountability, a culture of blame remains prevalent, and its impact on clinicians and trainees may result in avoidance of conversations about UPPOs.[2] Knowing the negative impact these outcomes can have on well-being, psychological support for individuals involved is crucial.[3] One potential area of improvement is through integration of support into clinician educational conferences. Recent work has called for morbidity and mortality conferences to incorporate compassion, empathy, humanity, and respect.[4] Morbidity and mortality conferences cannot meet these goals unless they provide a high degree of psychological safety, which is the belief shared by all that they are in a safe space to take risks, express themselves, and share their true feelings without fear of ridicule, retribution, and embarrassment.[5,6]

Prior literature has focused on redesigned morbidity and mortality conferences at all levels of medical training, with the goal to promote enhancement of quality and patient safety.[7] The Accreditation Council for Graduate Medical Education (ACGME) has established competencies for patient safety, interprofessional collaboration, and quality improvement that must be addressed within training programs and identified patient safety as a required area for faculty professional development.[8] Additionally, the American Board of Pediatrics (ABP) also has incorporated principles of patient safety, quality improvement, and system-based improvement into the content specifications for certification and maintenance of certification in general pediatrics and subspecialties.[9] In order to properly address the foundational patient safety principles highlighted by the ACGME and ABP, it is imperative that trainees have opportunities to learn more from UPPOs in a psychologically safe environment. UPPOs can allow for the discussion of these

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important concepts, while also attending to individual and group well-being through case discussion in a supportive venue. We developed this pilot study to guide both pediatric hospital medicine fellow trainees and established clinicians involved in UPPOs to explore the events in a psychologically safe environment and acquire vital patient safety knowledge.

METHODS

The pediatric hospital medicine section at our institution consists of 32 physicians, 9 advanced practice providers (APP) and 4 fellows. It has over 5000 annual admissions across 4 resident services and 1 APP service. We created the Pediatric Event Review and Learning (PEaRL) curriculum as a pilot to integrate into the section's ongoing professional development efforts and fellowship curriculum with 2 main goals:

1) Review UPPOs in a case-based format to address specific ABP content specifications for pediatric hospital medicine related to patient safety.
2) Provide a supportive and psychologically safe venue for exploration of emotions that trainees and clinicians experience in response to UPPOs.

We developed core learning objectives (Box) based on the ABP pediatric hospital medicine content specifications, and each session addressed 2 to 3 of these defined learning objectives. Educational content related to cases was selected with the goal of addressing each objective at least once during the pilot study, with flexibility on the order of topics to allow for case-specific learning. Pediatric hospital medicine clinicians self-selected cases to present. The presenter then met with the PEaRL director for assistance in content preparation in a case-based fashion with inclusion of interactive content to facilitate engagement (eg, polling questions, breakout rooms for open-ended questions, or small group activities).

Starting in July 2020, 45-minute case presentations occurred quarterly during standing group meeting times. These sessions were scheduled specifically within preexisting conference times to facilitate attendance for busy clinicians. Due to the COVID-19 pandemic, conferences initially were held virtually. Sessions were not recorded to preserve confidentiality and attend to psychological safety.

Both at introduction of the curriculum and then at individual sessions, specific guidance was provided about psychological safety. Clear expectations were provided both verbally and in written format about respectful communication, transparency, and using the conference as an opportunity to learn from one another. Although it was repeatedly emphasized that PEaRL was not meant to be punitive or judgmental, the session facilitator alone was not responsible to ensure this supportive environment was maintained. The PEaRL course director was present at each session to ensure there was no entry of "shame and blame" discussion and to redirect any conversation that was a threat to maintaining psychological safety. When any drift away from a psychologically safe environment was noted, the course director would interject during the discussion with a direct statement about removal of punitive or judgmental language.

Box. Pediatric Event Review and Learning (PEaRL) Objectives

At the end of this curriculum, participants will be able to:

1. Define terms such as patient safety, adverse event, near miss, root cause analysis and healthcare failure mode and effects analysis.
2. Identify the potential for error within the health care system.
3. Recognize and define key types of medical errors.
4. Describe the different types of cognitive errors and how these are intertwined with system errors.
5. Demonstrate the ability to use a diagnostic time-out.
6. Demonstrate effective teamwork skills involved in error analysis.
7. Draw and illustrate a written diagram of an Ichikawa fishbone.
8. Identify areas in their own practice and local system that can be changed to improve the processes and outcomes of care.
9. Develop an action plan for the prevention of error in the future.
10. Demonstrate collaborative teamwork skills using a shared learning model with peers.

Clinicians experienced the PEaRL curriculum as a 12-month pilot, and evaluation of the impact of this new experience was measured with both pre-implementation and follow-up surveys distributed electronically. A baseline survey of pediatric hospital medicine physicians, APPs, and fellows about opportunities for discussion and support after UPPOs was completed with follow-up surveys at 6 and 12 months. Responses were on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree). Mann-Whitney-Wilcoxon test was used to compare the baseline and 6-month and 12-month post-implementation survey responses.

RESULTS

Participants at all levels (fellows, APPs, faculty) responded to surveys in similar proportions throughout the study period, with fewer total responses at 6 months and 12 months post-intervention (Table 1A). At baseline, all respondents indicated that a new standardized process to discuss and review UPPOs was needed, that discussion of these outcomes helped with coping and wellness, and that reviewing UPPOs was an important aspect of their job—all of which were sustained at both the 6-month and 12-month marks. Throughout the study period, all respondents endorsed that UPPOs affected their mood, well-being, and functioning. Post-implementation, there was improvement in feeling supported after UPPOs and existence of a safe environment and structured format to discuss such outcomes. These improvements were sustained at 6 and 12 months (Table 1B). Most respondents (79%) reported quarterly sessions were optimal, while 21% desired more frequent sessions.

DISCUSSION

Our experience suggests that the PEaRL curriculum provides a valuable opportunity for pediatric hospital medicine fellowship

Table 1. Respondent Demographics and Attitudes Before and After Implementation of the Pediatric Event Review and Learning Curriculum

	Pre-implementation		6-Month Post-intervention			12-month Post-intervention		
A. Demographics								
Role	**n (%)**		**n (%)**			**n (%)**		
Hospitalist faculty	23 (74.2)		14 (73.7)			15 (79.0)		
Hospitalist fellow	2 (6.5)		2 (10.5)			2 (10.5)		
Hospitalist advanced practice provider	5 (16.1)		2 (10.5)			2 (10.5)		
Other (research coordinator)	1 (3.2)		1 (5.3)			0		
B. Responses								
Survey prompt	**Mean**	**SD**	**Mean**	**SD**	***P* value**	**Mean**	**SD**	***P* value**
Reviewing patient cases with unanticipated and/or poor outcomes should be an important aspect of my job in pediatric hospital medicine	3.94	0.25	3.89	0.32	0.61	3.94	0.24	0.901
Patient cases with an unanticipated and/or poor patient outcome affect my mood, functioning and/or well-being	3.84	0.374	3.74	0.45	0.387	3.84	0.38	0.975
Discussing patient cases with unanticipated and/or poor outcomes helps with my coping and wellness	3.64	0.488	3.72	0.58	0.415	3.72	0.46	0.579
I feel supported after an unanticipated and/or poor patient outcome	2.89	0.641	3.28	0.46	**0.036**	3.47	0.51	**0.004**
Discussing unanticipated and/or poor patient outcomes helps our section to learn about important patient safety principles	3.87	0.341	3.95	0.23	0.387	3.79	0.42	0.450
Discussing other section members' unanticipated and/or poor patient cases is valuable for my learning	3.87	0.341	3.89	0.32	0.804	3.84	0.38	0.777
The section of hospital medicine currently provides a safe environment to discuss patient cases with unanticipated and/or poor outcomes	2.96	0.824	3.74	0.45	**<0.001**	3.67	0.49	**0.003**
The Section of Hospital Medicine currently has a structured format to discuss patient cases with unanticipated and/or poor patient outcomes	2.00	0.834	3.63	0.60	**<0.001**	3.61	0.50	**<0.001**

Baseline demographics (A) and mean participant survey responses (B) on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree) were compared to those at 6 and 12 months post-implementation. n denotes number of respondents for each item (total N = 45). *P* values < 0.05 were considered statistically significant. Statistically significant values are denoted in bold.

trainees and experienced clinicians alike to explore and discuss UPPOs while addressing key patient safety principles. This integration of both "education" and "wellness" led to an increase in perception of interpersonal support after UPPOs. Clinicians were able to participate in error analysis and learn to apply patient safety tools, all while using a shared learning model with peers. During implementation, it was noted that clear communication and repeated reenforcement of ground rules and goals related to psychological safety was needed. We communicated frequently to participants that this conference structure was put in place to create a safe learning environment and NOT to create an ad hoc interrogation about errors. Success of this approach is reflected in the survey responses related to psychological safety. Having the PEaRL course director (in addition to the presenter) in attendance and active in the conversation was crucial to reframe the conversation in real time to ensure discussions were viewed through the lens of learning opportunities rather than one of shame and blame.

To have focused, valuable, and thought-provoking sessions, preparing the presenter in advance emerged as highly important. By having the presenters prepared to share their own responses and emotions experienced both during and after UPPOs, an opportunity was provided for others to share emotions in similar situations.

Limitations of this work include small sample size of pediatric hospital medicine clinicians, self-reported reaction data, lack of validated survey tools, and lack of practice-based patient safety education outcomes. Further study is needed to determine patient-focused safety outcomes as well as applicability across disciplines.

For clinician groups looking to address patient safety and clinician resilience, the format and focused objectives of PEaRL may be helpful. This curriculum may benefit future patients as this fostering of psychological safety may open the doors for further discussion that can lead to downstream changes that positively affect patient care. While this curriculum was built for pediatric hospital medicine fellows and clinicians, future directions could include dissemination to additional trainee levels, such as resident trainees and medical students. This could help learners recognize early in their training that addressing UPPOs with their peers in a supportive environment and learning from others is a crucial aspect of practicing medicine. Additional future directions could include dissemination of this curriculum to other specialties and creation of a multidisciplinary PEaRL-style conference that could foster collaboration and further cooperative learning, as well as incorporation of validated tools to measure broader aspects of psychological safety

Funding/Support: None declared.

Financial Disclosures: None declared.

Prior Presentations: An oral presentation of this pilot study was presented at the 2023 Pediatric Academic Society Meeting, April 27-May 1, 2023, Washington, DC.

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