RESEARCH ARTICLE

Hospitalists' Perceptions of Pediatric Mental Health Boarding: Quality of Care and Moral Distress

Nicole Y. Penwill, MD, MPH,[a] Christopher T. Wong, MPH,[b] Delaney B. Taylor,[c] Seneca D. Freyleue, MS,[b] Amy L. Bordogna, MPH,[b] Ryan S. Bode, MD, MBOE,[d] JoAnna K. Leyenaar, MD, PhD, MPH[e]

A B S T R A C T

BACKGROUND: Acute care hospitals increasingly provide care for youth experiencing mental health crises while they await transfer for psychiatric hospitalization. To inform quality improvement efforts, we aimed to characterize hospitalists' perceptions of health care quality during pediatric mental health boarding and their experiences of moral distress in caring for this population.

METHODS: In March 2021, we conducted a web-based survey of hospitalists who participate in the Pediatric Research in Inpatient Settings (PRIS) network. Closed- and open-ended questions queried the quality of care provided to youth during boarding and clinician experience of moral distress in caring for these youth. We iteratively coded qualitative data for emergent themes. Moral distress was measured using 11 items from the Measure of Moral Distress for Health Care Professionals (MMD-HP), which categorizes sources of moral distress into system-, team-, and patient-level factors.

RESULTS: Eighty-eight of 111 PRIS site leaders (79%) and 76 of 383 other PRIS members (20%) responded, representing 12 community hospitals, 38 freestanding children's hospitals, and 35 children's hospitals in adult centers. Emergent themes related to health care quality included the following: access to psychiatric services; safety; standardized workflows; clinician training; compassion/patient engagement; and collaboration and disposition planning. Hospitals often lacked desired resources, resulting in poor perceived therapeutic value of care, limited patient engagement, and provider moral distress. Four of the 5 highest MMD-HP item scores were related to system-level factors.

CONCLUSION: Hospitalists identified several foci for quality improvement and described significant moral distress in caring for youth experiencing boarding, particularly related to health system factors.

[a]Department of Pediatrics, School of Medicine, University of California, San Francisco, San Francisco, California; [b]The Dartmouth Institute for Health Policy and Clinical Practice, Geisel School of Medicine at Dartmouth College, Hanover, New Hampshire; [c]Geisel School of Medicine at Dartmouth College, Hanover, New Hampshire; [d]Department of Pediatrics, Center for Clinical Excellence, Nationwide Children's Hospital, Columbus, Ohio; and [e]Department of Pediatrics, Geisel School of Medicine at Dartmouth College, Hanover, New Hampshire

One in 6 adolescents have a mental health condition,[1] and 1 in 12 high school students report attempting suicide in the previous 12 months.[2] Expansion of mental health resources has not matched growing need, and only half of affected youth receive mental health treatment.[3] As a result, youth are increasingly presenting to emergency departments with acute mental health crises,[4–8] and they are more likely to require hospitalization than children without psychiatric concerns.[5] Over the past decade, hospitalizations for children with psychiatric diagnoses have grown at 5 times the rate of hospitalizations for children without these diagnoses.[9]

Given an ongoing shortage of inpatient psychiatric beds, youth requiring hospitalization may experience boarding,[10] defined by the Joint Commission as "the practice of holding patients in the emergency department or in another temporary location after the decision to admit or transfer has been made."[11] The Joint Commission has recommended that boarding time not exceed 4 hours.[11] However, a recent systematic review found that up to half of youth requiring inpatient psychiatric admission boarded in the emergency department or inpatient setting, on average for 5 hours to 2 to 3 days.[10] Furthermore, of 88 surveyed US children's and community hospitals, all but 1 reported boarding children and adolescents, but few provided psychiatric services for these youth.[12]

Despite research characterizing the frequency and duration of mental health boarding, little is known about the quality of care provided during boarding. Hospitalists are increasingly required to care for these youth; constraints in providing high-quality care because of factors outside of one's control may contribute to their experience of moral distress.[13] Recognizing and addressing clinician moral distress is critical because moral distress is a major source of burnout and staff turnover, particularly in the context of a strained mental health care system and a national health care workforce shortage exacerbated by the COVID-19 pandemic.[14]

To identify areas for intervention, this study's objectives were to (1) describe hospitalists' perspectives regarding the quality of health care delivered to youth experiencing mental health boarding and (2) characterize their experience of moral distress in caring for this population.

METHODS
Study Participants and Recruitment

In March 2021, we conducted a web-based survey of members of Pediatric Research in Inpatient Settings (PRIS), a voluntary pediatric hospital medicine research network that represents children's and community hospitals in the United States and Canada.[15] The survey was distributed via REDCap[16,17] to both PRIS site leads (primary contact persons at each hospital) and the PRIS membership (PRIS participants who are not site leads). Surveys were sent to US-based hospitalists only because of differences in Canadian federal regulations and oversight of mental health care. Up to 3 reminder e-mails (through April 2021) were sent to encourage responses. No participation incentives were provided.

Survey Instrument

Survey questions for this analysis (Appendix 1) focused on hospital and demographic characteristics, perceived mental health care quality, and moral distress pertaining to the care of boarding patients. A hospital-level analysis of boarding frequency, duration, and hospital resources has been previously published.[12] Boarding was defined using the Joint Commission definition provided previously,[11] and respondents were asked to consider boarding in children and adolescents aged <18 years following medical clearance.

Quality of care and moral distress survey items included closed- and open-ended questions. Open-ended questions included: (1) in what ways does your hospital provide excellent quality of care to youth experiencing mental health boarding? and (2) in what ways is the quality of care for youth experiencing mental health boarding at your hospital suboptimal? Respondents were also asked if they tracked patient safety and/or quality of care measures among youth boarding at their hospital, and, if yes, to list the measures tracked.

Moral distress questions were selected from the previously validated Measure of Moral Distress for Health Care Professionals (MMD-HP),[18] which asks respondents to rate both the frequency and intensity of 27 causes of moral distress, categorized as patient-, team-, and system-level factors. Recognizing the response burden incurred by asking participants to rate 27 items twice, we convened a 5-member stakeholder panel comprising a pediatric resident, chief resident, hospitalist, psychologist, and psychiatrist to select survey items most relevant to mental health boarding. Eleven items were prioritized for inclusion in our survey. Consistent with the original MMD-HP, participants were asked to rate, on a 5-point Likert scale (0 = never to 4 = very frequently), how frequently they had experienced each situation in caring for boarding youth. They were subsequently asked to rank how distressing the situations were for them (0 = never to 4 = very distressing). They were instructed to select the response of "0" (never) if they had never experienced a particular situation. Additionally, they were asked to describe, via free text response, other situations in which they felt moral distress caring for youth experiencing mental health boarding.

To optimize the survey before data collection, we conducted cognitive interviews with 9 hospitalists and chief residents at 3 geographically distinct hospitals (for diverse perspectives). This method involved administering draft survey questions and eliciting verbal feedback to ensure questions were interpreted as intended and produced comprehensive responses.[19,20] Cognitive interviews resulted in minor modifications to question wording and response options. Additionally, we asked 5 hospitalists to pilot test the survey in REDCap[16,17] to estimate the time required for survey

completion and to ensure appropriate question flow and item clarity.

Data Analysis

After ensuring deidentification of responses, open-ended survey data were analyzed in Dedoose 9.0.46 (Manhattan Beach, CA)[21] using conventional (inductive) content analysis.[22,23] Our senior author (J.K.L.), who has led several previous peer-reviewed qualitative studies,[24–32] trained all team members in this analytic method (except S.D.F., who conducted the quantitative analysis). Applying this inductive approach, all team members read the raw data in full and devised initial open codes (reflecting content within the text perceived as relevant to our research question). We then met to develop the codebook, collectively reviewing open codes to define subconcepts/concepts emerging from the data and their associated definitions. Three authors (C.T.W., A.L.B., D.B..T) then independently conducted line-by-line coding of free text responses with all data coded by at least 2 authors; disagreements were resolved through subsequent discussion. Given the survey study design, we analyzed responses from all participants after data collection and elected not to discontinue analysis when data saturation was attained. After coding completion, team members agreed that data saturation was achieved. Three researchers (C.T.W., D.B.T., N.Y.P.) subsequently developed memos (written reflections) on the coded data. The research team convened to define emerging themes, defined as "patterned response or meaning" observed in the coded data[33,34]; we used axial coding to group related concepts into themes. Additionally, the research team collectively summarized foci for quality improvement based on key concepts reflected within each theme.

Analysis of the MMD-HP data followed previously established procedures.[18] For each of the 11 items, composite moral distress scores were calculated by multiplying the moral distress frequency score by the intensity score, resulting in a score range of 0 to 16 for each item. All quantitative analysis was conducted using R Statistical Software (v4.1.3).[35]

This study was reviewed and deemed exempt by our institutional review board.

RESULTS

We received responses from 88 of 111 PRIS site leads or designates (79%) and 76 of 383 additional PRIS members (20%). Of these, 85 site leads (97%) and 65 PRIS members (86%) reported being familiar with their hospital's mental health boarding processes and were included in this analysis. Survey respondents represented 85 hospitals, including 12 community hospitals (14%), 35 children's hospitals nested within adult hospitals (41%), and 38 freestanding children's hospitals (45%). The majority of respondents were female (71%), with a median age of 41 years (interquartile range, 37-45 years) and a median of 11 years of experience (interquartile range, 6-14) (Table 1).

A total of 89 respondents provided free text responses to open-ended questions about quality of care and moral distress. Perceptions of health care quality during boarding centered on 6 themes: (1) access to psychiatric services, (2) safety, (3) standardized workflows, (4) clinician training, (5) compassion/patient engagement, and (6) collaboration and disposition planning. Illustrative quotes summarizing high and suboptimal quality of care, and associated foci for quality improvement, are provided in Table 2. In the context of suboptimal health care quality, respondents described experiencing moral distress, particularly related to inadequate psychiatric services, prolonged boarding, and activity restrictions imposed to maintain patient safety (Table 3).

Psychiatric Services

Respondents described provision of psychiatric services as a primary determinant of care quality, including psychotherapy, psychotropic medication management, behavioral de-escalation support, and safety/risk assessment. One respondent described the hospital's positive experience, "We … have a psychiatrist who is solely dedicated to inpatient/[emergency department] consultation and has been a great point-person/champion for psychiatric care" (ID17001).

Unfortunately, respondents widely described inadequate, or no, availability of psychiatry/psychology services (including poor access/uptake of telepsychiatry), to provide boarding patients therapy or medication management. One respondent described, "We do not have psychiatrists or psychologists. We have overworked social workers who can barely see every new patient, not to mention boarding patient[s], daily" (ID28501). As a result, respondents described boarding hospitalizations as "wasted time" (ID14501) for patients presenting in "acute crisis" (ID10901), who ultimately "just sit in the hospital" (ID10205).

Several respondents expressed concern that boarding hospitalizations offered poor therapeutic benefit/value of care and invoked moral distress. They described sentiments of frustration and helplessness among inpatient clinicians, patients, and caregivers. For example, "It is difficult to have … [boarding patients] not receiving treatment for the reason they are admitted (i.e., suicidality, depression …). Parents are frustrated and patients are just waiting—not safe enough to go home but not receiving psychiatric care" (ID17503).

Safety

Pertaining to the theme of safety, respondents described "safe" patient rooms, 1:1 safety attendants, activity restrictions to prevent self-harm, and procedures to manage patient agitation.

Respondents described the value of patient rooms designed to minimize environmental safety hazards and facilitate monitoring; desired room capabilities included telemetry after ingestions and camera monitoring to give "some freedom yet continued safety" (ID19118). However, several respondents described their hospitals lacking appropriate rooms, such

TABLE 1 Respondent and Hospital Characteristics

Characteristics	
Respondent characteristics (N = 150)	Median (IQR) or n (%)
Age, y	41 (37–45)
Sex	
Female	107 (71)
Male	42 (28)
Other/prefer not to answer	1 (1)
Years of experience	11 (6–14)
Hospital characteristics (N = 85)	
Hospital type	
Freestanding children's hospital	38 (45)
Children's hospital within larger institution	35 (41)
General community hospital	12 (14)
Number of general pediatric beds[a]	
1–50	29 (34)
51–100	26 (31)
>100	27 (32)
Licensed pediatric psychiatric beds (yes)	31 (37)
Hospital location	
Urban	55 (65)
Suburban/rural	30 (35)
Geographic region	
Northeast	24 (28)
Midwest	21 (25)
West	19 (22)
South	21 (25)

IQR, interquartile range.
[a]3 sites did not report number of general pediatric beds.

that "[it is] difficult to control … ligature risk" (ID14401).

Respondents described these restrictive policies as a source of moral distress: "Extreme lockdown situations are … morally distressing—children restricted to their rooms for prolonged periods (weeks, months) with no visitors and multiple guards" (ID16701). Additional sources of moral distress related to safety included staff injury by aggressive patients and physical/chemical restraint use.

Workflow Standards

Within this theme, respondents described standardized policies, protocols, and pathways for management of youth experiencing boarding. Respondents variably reported having standardized procedures for room preparation, policies outlining patient privileges, procedures for conducting suicide risk assessments, and standardized workflows for behavioral de-escalation.

Respondents particularly valued standardized processes for managing acute agitation. One respondent described need for " … a clear process for ensuring rapid and efficient assistance in the case of behavioral emergencies to both create behavioral plans when aggressive behavior is anticipated and to rapidly respond to aggressive behavior when staff are at risk" (ID17707). Further, respondents associated having a behavioral de-escalation workflow/team with "cut[ting] down on the number of medical/physical restraints" (ID17804). However, others reported lacking standardized policies and workflows, resulting in inconsistent care. One

respondent described that "recommended treatments for behavioral escalation differ by psych provider and there is no routine pathway in place" (ID14301).

Just over one-quarter of PRIS site leaders (n = 21, 27%) reported tracking quality or safety measures related to mental health boarding. Reported measures are listed in Table 4.

Clinician Training

The theme of clinician training included concepts related to previous mental health care experience and behavioral health training opportunities.

A few respondents applauded safety attendant and other staff training/experience in mental health. One respondent described the hospital's "live 6-hour class for all behavioral health techs/1:1 staff/nurses on the care and management of the behavioral health patient in a non-psychiatric setting" (ID13001).

In contrast, respondents predominantly lamented a paucity of safety attendant and clinician behavioral health experience and/or [access to] training. One respondent stated, "The 1:1 sitters are patient care techs—they generally have not received any specific behavior/mental health training and can be generally supportive but don't really provide a therapeutic benefit" (ID14401).

Moral distress responses pertaining to clinician training centered on respondents feeling underequipped to care for particularly escalated, mental health patients ("not knowing the best ways to handle psychotic or agitated patients" (ID16601)).

Compassion and Patient and Family Engagement

Within this theme, respondents described staff's interactions with youth, efforts to provide wellness activities, caregiver communication, and provision of patient/family anticipatory guidance.

Respondents applauded multidisciplinary staff efforts to provide "a compassionate

TABLE 2 Quality of Care Illustrative Quotes and Foci for Quality Improvement by Theme

Foci for Quality Improvement	Better Quality of Care	Suboptimal Quality of Care
Theme 1: Psychiatric services *Mental health personnel and service provision; social work*		
Invest in mental health personnel to: provide targeted psychotherapy and psychiatric medication management; assist in safety planning, behavioral de-escalation support; undertake daily huddles. May use technology-based supports. Hire 1:1 safety attendants with mental health experience.	"[Our] Psych consult/liaison service now has a dedicated child psychiatrist on weekdays, making care more consistent and more integrated with [the pediatric hospital medicine] team." (ID18501)	"[Patients] aren't getting the therapy they need, one of the biggest timeliness gaps in our system." (ID17701)
Theme 2: Safety *Environmental safety conditions/risks, safe rooms, safety attendants, equipment, restraint use, staff injury*		
Configure safe patient rooms; develop procedures/checklists to minimize environmental safety risks; use 1:1 safety attendants; protocols for staff safety.	"Clear processes and protocols for ensuring safety in terms of preparing rooms and providing direct 1:1 observation." (ID17707)	"Space not designed for psych needs = hazards (cupboards, outlets)." (ID21012)
Theme 3: Standardized workflows *Established policies, procedures, clinical pathways, and workflows; de-escalation teams.*		
Develop standardized policies, procedures, and workflows to direct safe patient room preparation, patient privileges, safety assessments, psychiatric/psychology consultation, behavioral de-escalation, and medication management.	"Standardizing the behavioral protocol and the escalation contingency protocol has helped set expectations, giv[ing] kids something concrete to work toward." (ID16701)	"No standardized procedures, order sets, [or] standardized plan for consultation of psychology." (ID17601)
Theme 4: Clinician training *Mental health, de-escalation training for safety attendants, non-mental health clinicians*		
Use 1:1 safety attendants with mental health training/experience. Offer staff mental health training/continuing medical education focused on targeted therapeutic interventions, behavioral de-escalation, patient engagement, and meeting patient/family informational needs. Require trainings for 1:1 safety attendants, frontline clinicians, and unit leaders.	"We have an exceptionally well-trained staff of patient assistants (who provide 1:1 observation), [including] specially trained behavior health specialists who are [therapeutic crisis intervention]-trained and can assist in de-escalation." (ID17707)	"We aren't trained in de-escalation. Nurses get scared. Providers don't know how to provide help." (ID14725)
Theme 5: Compassion/engagement *Clinician-patient-caregiver interactions; patient advocacy*		
Provide empathetic, attentive care to patients and caregivers; offer wellness activities; involve Child Life; provide patient/caregiver anticipatory guidance regarding care plan, transfer logistics, inpatient psychiatry overview (i.e., set expectations); offer emotional supports/resources.	"Providers and nurses do the best they can with limited resources and training." (ID17902)	"Our patients are bored, and their families feel like they are not receiving care." (ID28501)
Theme 6: Collaboration and disposition planning *Interdisciplinary collaboration; boarding duration, psychiatric bed placement, transfer logistics*		
Daily interdisciplinary huddles; consider use of video conferencing. Daily reassessment of disposition needs and psychiatric bed placement, including weekends. Dedicate social work resources for youth experiencing boarding.	"Constant communication about status of transfer … with the parents and team. The social workers call the inpatient psych units for bed availability at regular intervals." (ID19701)	"No timeline of when patient will be admitted to psychiatric hospital which is challenging for patients and families." (ID11201)

and supportive environment to the best of their ability" (ID14401); dedicated efforts to keep patients safe; and engagement of patients in wellness activities (e.g., "distraction or calming techniques, general entertainment" (ID10901)). One respondent described that "our sitters and child life are very involved and … provide good support to our boarders" (ID14201). In addition, respondents described dedicated efforts to provide anticipatory guidance and education for families regarding the current hospitalization, transfer logistics, inpatient psychiatry, and home safety planning.

TABLE 3 Moral Distress Scale Domains by Composite Score and Illustrative Quote

Moral Distress Scale Domain	Mean (SD)	Median (IQR)	Illustrative Quote
System Level			
Experience compromised patient care because of a lack of resources/equipment/bed capacity.	7.82 (4.97)	8 (4–12)	"Watching these patients remain in isolated rooms, sometimes for weeks, while awaiting psychiatric beds without being able to offer them any type of therapy invokes moral distress." (ID13513)
Be required to care for patients whom I do not feel qualified to care for.	5.59 (4.38)	4 (3–8)	"I have patients all the time tell me that 'we don't help them in the hospital' and they are entirely correct. I am not trained to manage suicidal/ severely depressed … patients." (ID10101)
Be required to work with abusive patients/family members who are compromising quality of care.	5.32 (3.79)	4 (3–8)	"If staff feels at risk of harm from patients, it contributes to high stress at work and burnout." (ID14701)
Experience lack of administrative action or support for a problem that is compromising patient care.	5.27 (4.88)	4 (2–8)	"My greatest source of moral distress has been … working with hospital administrators who are not open to considering alternative models of care for children with mental health conditions, such as the option to participate in exercise, take walks off unit with appropriate supervision, and risk assessment." (ID12209)
Team level			
Watch patient care suffer because of a lack of provider continuity.	5.08 (3.93)	4 (2–8)	"We have had some BERT [Behavioral Emergency Response Team] training as [pediatric hospital medicine] but are not nearly as effective as psych[iatric] nurses and it rarely goes well without them." (ID18501)
Be required to care for patients who have unclear or inconsistent treatment plans or who lack goals of care.	4.44 (3.51)	3 (2–6)	"Children and families are left without plans or many services until they are at the psych hospital." (ID17707)
Witness low quality of patient care because of poor team communication.	4.39 (3.54)	4 (2–6)	"Poor communication infrastructure between hospitalists, psychiatrists, and social workers." (ID12201)
Participate on a team that gives inconsistent messages to a patient/family.	3.25 (3.08)	3 (1–4)	"Agitated behavior interpreted as willful 'problem behavior' by fellow staff members." (ID18801)
Patient level			
Participate in care that causes unnecessary suffering or does not adequately relieve pain or symptoms.	4.33 (4.32)	4 (0–6)	"Patients expressing that the care they are receiving is making them worse … due to the number of restrictions (no fresh air, minimal movement, etc.)." (ID28101)
Feel pressured to order or carry out orders for what I consider to be unnecessary or inappropriate tests and treatments.	3 (3.76)	2 (0–4)	"The difference in requests for medical or physical restraints based on what seems to be nursing fears associated with race rather than based on true medical need." (ID14716)
Witness health care providers giving "false hope" to a patient or family.	2.7 (2.68)	2 (0–4)	

IQR, interquartile range; SD, standard deviation.

Despite efforts to engage patients and families, several respondents described major limitations to allowable patient activities, resulting in patients "just sitting there" (ID25001), "locked in a room" (ID14716). Respondents described concerns that activity restrictions, lack of psychotherapy, and limited ability to engage patients worsened patients' isolation and dysphoria. One respondent described, "Patients become very isolated as they are restricted from interacting with peers in a way that would not happen in such a routine way at a psychiatric hospital" (ID18801).

Moral distress relevant to this theme centered on frustration with limited opportunities for therapeutic engagement, resulting in "helplessness to improve these patients' lives" (ID 16808), compounded by "inflexible policies that compromise care" (ID14732). One respondent recounted, "patients expressing that the care … is making them worse … due to the number of restrictions (no fresh air, minimal movement, etc.)" (ID28101).

TABLE 4 Quality and Safety Measures and Processes Reported by Respondents

Standardized tools and processes

    Environmental safety adherence/checklist completion

    Use of agitation scoring/pathway

    Completion of behavioral health action plan

    Completion of suicide screening

    Use of "Behavior Situation Awareness compliance" bundle

Safety events

    Harm/injury to patients or staff

    Behavioral health escalations/alerts/ emergencies

    Safety event review

    Attempted/successful escapes from the unit

Transitions of care measures

    Length of stay

    Readmission

    Postdischarge follow-up with mental health provider

Other

    Physical/chemical restraint use

    Boarding patient census

    Patient/caregiver satisfaction

Collaboration and Disposition Planning

Within this theme, respondents described interdisciplinary communication/ collaboration and logistics around inpatient psychiatry bed placement.

Respondents particularly valued regular, timely communication with psychiatry services for acute behavioral concerns, daily check-ins, and disposition updates. Cited strategies included "multidisciplinary psychiatric rounds each morning" (ID12602) and "daily phone huddles" (ID18501).

Some respondents commended short, <24-hour stays and highlighted diligent efforts and "streamlined processes" (ID16801) to ensure "definitive placement ASAP" (ID14301). Strategies included "a dedicated [social worker] who coordinates inpatient placement" (ID17302) and "bed search … done multiple times a day (including weekends)" (ID17601).

Suboptimal care and moral distress for this theme centered on delays in placement ("in isolated rooms, sometimes for weeks" [ID13513]; "lack of clarity around discharge plans and [length of stay] is very difficult for families" [ID17804]). Particularly distressing to respondents were experiences of psychiatric facilities not accepting patients with comorbid medical conditions, resulting in prolonged boarding. Respondents lamented, " … even a [nasogastric] tube can delay care" (ID14501) and "autistic [children] that have nowhere to go" (ID15301).

Moral Distress

Responses to the 11 MMD-HP items varied substantially, with values ranging from a low of 0 to a high of 4 for all items for both frequency and intensity (Fig 1). Composite scores (the product of frequency and intensity) were highest for system-level factors, followed by team- and patient-level factors. The highest frequency score (and highest composite score) was "experiencing compromised patient care due to lack of resources, equipment, and/or bed capacity," whereas the most intense source was "participating in care that was perceived to cause unnecessary suffering or not adequately relieve pain or symptoms."

DISCUSSION

Recommendations to improve care for youth experiencing mental health boarding have predominantly focused on upstream solutions, particularly related to expansion of outpatient mental health service funding and access.[10] Although such services are essential, this study highlights opportunities for acute care hospitals to concurrently improve the care of youth experiencing mental health boarding.

Respondents in this study prioritized the need for expanded access to inpatient psychiatric services; however, given a national shortage of mental health professionals, innovative solutions may be needed to address quality of care gaps. Enhanced use of telepsychiatry and education of nonmental health clinicians represent 2 potential opportunities emerging from this study. Technology-based supports such as interfacility psychiatry consultation or video psychotherapy may increase availability of mental health services in acute care settings. Examples of larger institutions successfully providing telepsychiatry consultation to both affiliated and unaffiliated community/rural sites are published.[36–39] Video conferencing for multidisciplinary huddles/check-ins may also be an efficient means of providing psychiatric support to pediatric teams.[40]

Mental health training needs prioritized by respondents included techniques to optimize patient-centered engagement and behavioral de-escalation skills. The former is supported by previous qualitative studies of boarding adolescents and their caregivers who desired more information regarding clinical care processes and emotional support resources.[41,42] Hospitals may consider offering de-escalation training; existing programs include those efforts offered by Crisis Prevention Institute,[43] Safety-Care,[44] and Pediatric Learning Solutions,[45] among others.[46] As suggested by Doupnik et al, hospitals can support training for clinician leaders by offering protected time, adjusted productivity targets, or continuing education credits to facilitate staff participation.[40]

Hospitals may further improve care for youth experiencing boarding through the development of standardized policies, procedures, and clinical pathways, and by identifying and tracking quality and safety metrics. Such interventions are well established in hospital medicine and may improve health care quality without requiring additional personnel. In recent years, clinical pathways have been increasingly adopted in pediatric inpatient settings; studies of their use demonstrate improvements in clinical outcomes, reductions in practice variation, and reductions in hospital resource use.[47–53] A growing number of published mental health-related guideline implementation efforts and clinical pathways may serve as guides for managing these conditions in acute care settings. Published examples address suicide risk screening,[54,55] agitation/de-escalation,[56–58] somatic
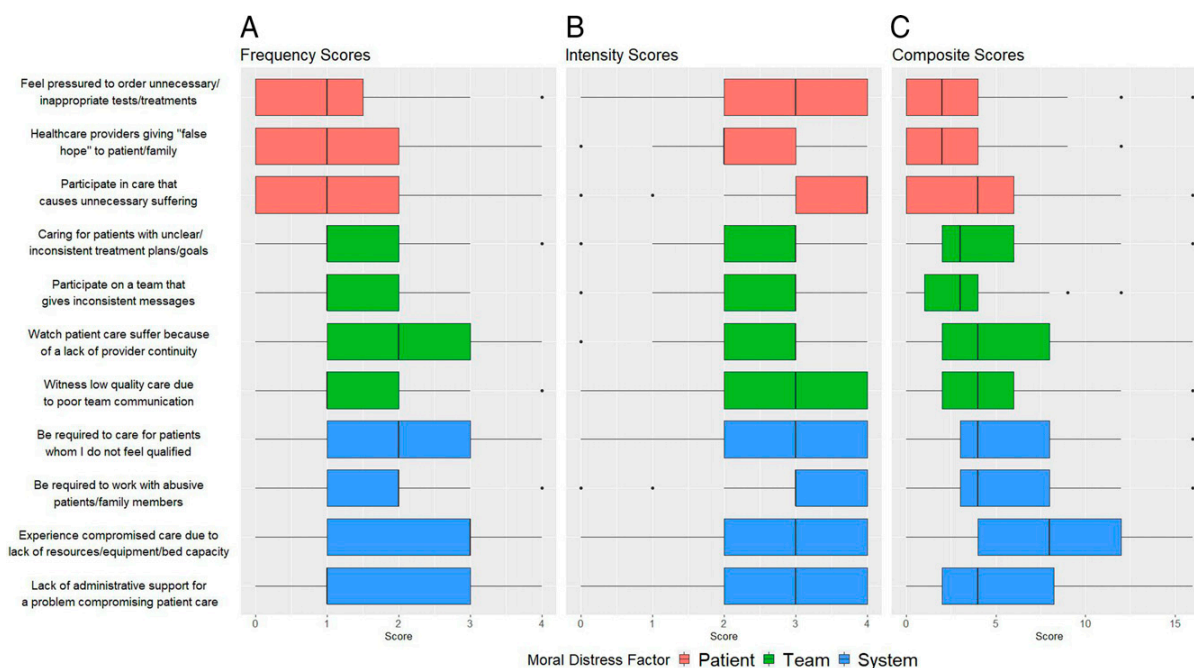
FIGURE 1 Distribution of moral distress frequency, intensity and composite scores by patient, team and system domains.[a]

[a]Score range of 0-4 for frequency and intensity measures and 0-16 for composite measure.

symptom and related disorders,[59,60] and disposition/care coordination.[61] Collaboration between psychiatry and pediatrics, within or across hospitals, may support implementation of these tools.

Respondents in this study reported substantial moral distress, particularly related to lack of resources, personnel, and administrative support, illustrating an adverse impact on clinicians who perceive suboptimal quality of care. Although the MMD-HP does not have norms to define "high" moral distress, mean scores for 8 of the 11 items in this study exceeded the overall mean composite score (3.56) for physician respondents in the MMD-HP development and validation paper,[18] as well as in a previous sample of US pediatric hospitalists (3.07).[62] Existing literature indicates a strong correlation between clinician moral distress, burnout, and provider turnover,[62–64] with high-quality health care provision a leading determinant of physician

satisfaction.[65,66] More than 2 years into the COVID-19 pandemic, hospitals face emotional exhaustion among workers,[67] critical staff shortages,[68,69] and a national emergency in mental health.[70] It is possible that improving the quality of care for youth experiencing boarding would improve clinician experience as well as pediatric health outcomes.

Our results should be interpreted in the context of this study's strengths and limitations. Although we received an excellent response from PRIS site leaders or designates, the PRIS member response rate was low and, thus, our results may be susceptible to nonresponse bias. Our study reflects the experiences of a specific group of participants, which may limit generalizability. Because we surveyed members of a hospital medicine research network, we did not elicit input from additional clinicians who also care for this population. In addition, respondents were predominantly academic hospitalists from children's hospitals,

with relatively low community hospital representation. Although we included open-ended survey questions to characterize the "why and how" of moral distress and health care quality during boarding, our survey design did not allow us to probe more deeply on these issues.[71] Finally, given the response burden associated with completing the full MMD-HP, we used a multidisciplinary stakeholder prioritization approach to select survey items most applicable to mental health boarding. Correspondingly, the dimensions of moral distress evaluated quantitatively in this study are limited. Despite these limitations, our analysis provides insight into the quality of care provided during boarding across 85 geographically diverse hospitals in the United States, for which little published literature exists.

In conclusion, hospitalists described deficits in quality of care and high levels of moral distress in caring for youth experiencing mental health boarding,

particularly related to health system factors. This study identifies several opportunities to support youth and potentially reduce moral distress among clinicians by investing in mental health personnel and/or technology, standardizing workflows, supporting interdisciplinary collaboration, and enhancing clinician training. Recognizing the national shortage of mental health professionals, dissemination of innovative solutions is needed.

> **ABBREVIATIONS**
> MMD-HP: Measure of Moral Distress for Health Care Professionals
> PRIS: Pediatric Research in Inpatient Settings

REFERENCES

1. Whitney DG, Peterson MD. US national and state-level prevalence of mental health disorders and disparities of mental health care use in children. *JAMA Pediatr.* 2019;173(4):389–391

2. Centers for Disease Control and Prevention. Trends in the prevalence of suicide-related behaviors, national YRBS: 1991–2019. Available at: https://www.cdc.gov/healthyyouth/data/yrbs/factsheets/2019_suicide_trend_yrbs.htm. Accessed May 14, 2022

3. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance - United States, 2017. *MMWR Surveill Summ.* 2018;67(8):1–114

4. Lo CB, Bridge JA, Shi J, Ludwig L, Stanley RM. Children's mental health emergency department visits: 2007-2016. *Pediatrics.* 2020;145(6):e20191536

5. Santillanes G, Axeen S, Lam CN, Menchine M. National trends in mental health-related emergency department visits by children and adults, 2009-2015. *Am J Emerg Med.* 2020;38(12):2536–2544

6. Plemmons G, Hall M, Doupnik S, et al. Hospitalization for suicide ideation or attempt: 2008-2015. *Pediatrics.* 2018;141(6):e20172426

7. Torio CM, Encinosa W, Berdahl T, McCormick MC, Simpson LA. Annual report on health care for children and youth in the United States: national estimates of cost, utilization and expenditures for children with mental health conditions. *Acad Pediatr.* 2015;15(1):19–35

8. Cutler GJ, Rodean J, Zima BT, et al. Trends in pediatric emergency department visits for mental health conditions and disposition by presence of a psychiatric unit. *Acad Pediatr.* 2019;19(8):948–955

9. Zima BT, Rodean J, Hall M, Bardach NS, Coker TR, Berry JG. Psychiatric disorders and trends in resource use in pediatric hospitals. *Pediatrics.* 2016;138(5):e20160909

10. McEnany FB, Ojugbele O, Doherty JR, McLaren JL, Leyenaar JK. Pediatric mental health boarding. *Pediatrics.* 2020;146(4):e20201174

11. The Joint Commission. R3 Report Issue 4: patient flow through the emergency department. Available at: https://www.jointcommission.org/standards/r3-report/r3-report-issue-4-patient-flow-through-the-emergency-department/. Accessed October 7, 2021

12. Leyenaar JK, Freyleue SD, Bordogna A, Wong C, Penwill N, Bode R. Frequency and duration of boarding for pediatric mental health conditions at acute care hospitals in the US. *JAMA.* 2021;326(22):2326–2328

13. Prentice TM, Janvier A, Gillam L, Donath S, Davis PG. Moral distress in neonatology. *Pediatrics.* 2021;148(2):e2020031864

14. American Hospital Association. Fact sheet: strengthening the health care workforce. Available at: https://www.aha.org/fact-sheets/2021-05-26-fact-sheet-strengthening-health-care-workforce. Accessed October 21, 2021

15. Simon TD, Starmer AJ, Conway PH, et al. Quality improvement research in pediatric hospital medicine and the role of the Pediatric Research in Inpatient Settings (PRIS) network. *Acad Pediatr.* 2013;13(6 suppl):S54–S60

16. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377–381 10.1016/j.jbi.2008.08.010

17. Harris PA, Taylor R, Minor BL, et al; REDCap Consortium. The REDCap consortium: building an international community of software platform partners. *J Biomed Inform.* 2019;95:103208

18. Epstein EG, Whitehead PB, Prompahakul C, Thacker LR, Hamric AB. Enhancing understanding of moral distress: the measure of moral distress for health care professionals. *AJOB Empir Bioeth.* 2019;10(2):113–124

19. Beatty PC, Willis GB. Research synthesis: the practice of cognitive interviewing. *Public Opin Q.* 2007;71(2):287–311

20. Collins D. Pretesting survey instruments: an overview of cognitive methods. *Qual Life Res.* 2003;12(3):229–238

21. Dedoose. Web application for managing, analyzing, and presenting qualitative and mixed method research data. Available at: www.dedoose.com. Accessed December 22, 2022

22. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res.* 2005;15(9):1277–1288

23. Kyngäs H, Mikkonen K, Kääriäinen M. *The Application of Content Analysis in Nursing Science Research.* New York: Springer International Publishing; 2020

24. Barnett ER, Trepman AZ, Fuson HA, et al. Deprescribing psychotropic medications in children: results of a national qualitative study. *BMJ Qual Saf.* 2020;29(8):655–663

25. Leyenaar JK, Capra LA, O'Brien ER, Leslie LK, Mackie TI. Determinants of career satisfaction among pediatric hospitalists: a qualitative exploration. *Acad Pediatr.* 2014;14(4):361–368

26. Leyenaar JK, Andrews CB, Tyksinski ER, Biondi E, Parikh K, Ralston S. Facilitators of interdepartmental quality improvement: a mixed-methods analysis of a collaborative to improve pediatric community-acquired pneumonia management. *BMJ Qual Saf.* 2019;28(3):215–222

27. Martens A, DeLucia M, Leyenaar JK, Mallory LA. Foster caregiver experience of pediatric hospital-to-home transitions: a qualitative analysis. *Acad Pediatr.* 2018;18(8):928–934

28. McCarty EJ, Nagarajan MK, Halloran SR, Brady RE, House SA, Leyenaar JK. Healthcare quality during pediatric mental health boarding: a qualitative analysis. *J Hosp Med.* 2022; 17(10):783–792

29. Leyenaar JK, McDaniel CE, Arthur KC, Stevens CA, St Ivany AR. Healthcare quality for acute illness during the COVID-19 pandemic: a multisite qualitative analysis. *Pediatr Qual Saf.* 2021;6(5):e476

30. Leyenaar JK, Rizzo PA, O'Brien ER, Lindenauer PK. Paediatric hospital admission processes and outcomes: a qualitative study of parents' experiences and priorities. *BMJ Qual Saf.* 2018;27(10):790–798

31. Leary JC, Schainker EG, Leyenaar JK. The unwritten rules of mentorship: facilitators of and barriers to effective mentorship in pediatric hospital medicine. *Hosp Pediatr.* 2016;6(4):219–225

32. McDaniel CE, Arthur KC, Arakelyan M, et al. Understanding trust between pediatric hospitalists and outpatient clinicians during hospital admissions: a multisite qualitative analysis. *J Hosp Med.* 2022;17(4):268–275

33. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. *Med Teach.* 2020;42(8):846–854

34. Vaismoradi M, Jones J, Turunen H, Snelgrove S. Theme development in qualitative content analysis and thematic analysis. *J Nurs Educ Pract.* 2016;6(5):100–110

35. R Core Team. R: a language and environment for statistical computing. Available at: www.R-project.org. Accessed December 22, 2022

36. Gopalan P, Auster L, Brockman I, Shenai N. Consultation-liaison telepsychiatry on an inpatient obstetrical labor and delivery unit. *J Acad Consult Liaison Psychiatry.* 2021;62(6):577–581

37. Graziane JA, Gopalan P, Cahalane J. Telepsychiatry consultation for medical and surgical inpatient units. *Psychosomatics.* 2018;59(1):62–66

38. Kimmel RJ, Toor R. Telepsychiatry by a public, academic medical center for inpatient consults at an unaffiliated, community hospital. *Psychosomatics.* 2019;60(5):468–473

39. Thomas JF, Novins DK, Hosokawa PW, et al. The use of telepsychiatry to provide cost-efficient care during pediatric mental health emergencies. *Psychiatr Serv.* 2018;69(2):161–168

40. Doupnik SK, Esposito J, Lavelle J. Beyond mental health crisis stabilization in emergency departments and acute care hospitals. *Pediatrics.* 2018; 141(5):e20173059

41. Worsley D, Barrios E, Shuter M, Pettit AR, Doupnik SK. Adolescents' experiences during "boarding" hospitalization while awaiting inpatient psychiatric treatment following suicidal ideation or suicide attempt. *Hosp Pediatr.* 2019; 9(11):827–833

42. Bowden CF, Worsley D, Pettit AR, Doupnik SK. Caregiver experiences during their child's acute medical hospitalization for a mental health crisis. *J Child Health Care.* 2022;26(1):123–138

43. Crisis Prevention Institute. Our programs: Crisis prevention programs. Available at: https://www.crisisprevention.com/. Accessed December 6, 2022

44. QBS. Safety-care crisis prevention training. Available at: https://qbs.com/safety-care-crisis-prevention-training/. Accessed December 6, 2022

45. Children's Hospital Association. Pediatric behavior and mental health course library. Available at: https://www.childrenshospitals.org/content/pediatric-learning-solutions/product-program/pediatric-behavioral-and-mental-health-course-library. Accessed December 6, 2022

46. Spears S, McNeely H. A systematic process for selection of a crisis prevention/de-escalation training program in the hospital setting. *J Am Psychiatr Nurses Assoc.* 2019;25(4):298–304

47. Rooholamini SN, Clifton H, Haaland W, et al. Outcomes of a clinical pathway to standardize use of maintenance intravenous fluids. *Hosp Pediatr.* 2017;7(12):703–709

48. Kasmire KE, Hoppa EC, Patel PP, Boch KN, Sacco T, Waynik IY. Reducing invasive care for low-risk febrile infants through implementation of a clinical pathway. *Pediatrics.* 2019;143(3):e20181610

49. Lion KC, Wright DR, Spencer S, Zhou C, Del Beccaro M, Mangione-Smith R. Standardized clinical pathways for hospitalized children and outcomes. *Pediatrics.* 2016;137(4):e20151202

50. Pavitt S, Carley A, Porter B, Knowles JK. A standardized protocol to improve

acute seizure management in hospitalized pediatric patients. *Hosp Pediatr.* 2021;11(4):389–395

51. Kaiser SV, Rodean J, Bekmezian A, et al; Pediatric Research in Inpatient Settings (PRIS) Network. Effectiveness of pediatric asthma pathways for hospitalized children: a multicenter, national analysis. *J Pediatr.* 2018;197:165–171.e2

52. Bekmezian A, Fee C, Weber E. Clinical pathway improves pediatrics asthma management in the emergency department and reduces admissions. *J Asthma.* 2015;52(8):806–814

53. Kullgren KA, Klein EJ, Sturza J, et al. Standardizing pediatric somatic symptom and related disorders care: clinical pathway reduces health care cost and use. *Hosp Pediatr.* 2020;10(10):867–876 10.1542/hpeds.2020-0004

54. Brahmbhatt K, Kurtz BP, Afzal KI, et al; PaCC Workgroup. Suicide risk screening in pediatric hospitals: clinical pathways to address a global health crisis. *Psychosomatics.* 2019;60(1):1–9

55. Roaten K, Johnson C, Genzel R, Khan F, North CS. Development and implementation of a universal suicide risk screening program in a safety-net hospital system. *Jt Comm J Qual Patient Saf.* 2018;44(1):4–11

56. Gerson R, Malas N, Feuer V, Silver GH, Prasad R, Mroczkowski MM. Best Practices for Evaluation and Treatment of Agitated Children and Adolescents (BETA) in the emergency department: consensus statement of the American Association for Emergency Psychiatry. *West J Emerg Med.* 2019;20(2):409–418

57. Roppolo LP, Morris DW, Khan F, et al. Improving the management of acutely agitated patients in the emergency department through implementation of Project BETA (Best Practices in the Evaluation and Treatment of Agitation). *J Am Coll Emerg Physicians Open.* 2020;1(5):898–907

58. Pavlov H, Santillanes G, Claudius I. Decline in pediatric emergency department behavioral team activations after institution of an agitation protocol. *Pediatr Emerg Care.* 2021;37(4):e170–e173

59. Ibeziako P, Brahmbhatt K, Chapman A, et al. Developing a clinical pathway for somatic symptom and related disorders in pediatric hospital settings. *Hosp Pediatr.* 2019;9(3):147–155

60. Kullgren KA, Shefler A, Malas N, et al. Taking the pain out of somatization: development and implementation of a hospital-based clinical practice guideline to address pediatric somatic symptom and related disorders. *Hosp Pediatr.* 2020;10(2):105–113

61. Jabbour M, Hawkins J, Day D, et al. An emergency department clinical pathway for children and youth with mental health conditions. *Child Adolesc Psychiatr Clin N Am.* 2018;27(3):413–425

62. Beck J, Randall CL, Bassett HK, et al. Moral distress in pediatric residents and pediatric hospitalists: sources and association with burnout. *Acad Pediatr.* 2020;20(8):1198–1205

63. Austin CL, Saylor R, Finley PJ. Moral distress in physicians and nurses: impact on professional quality of life and turnover. *Psychol Trauma.* 2017; 9(4):399–406

64. Fumis RRL, Junqueira Amarante GA, de Fátima Nascimento A, Vieira Junior JM. Moral distress and its contribution to the development of burnout syndrome among critical care providers. *Ann Intensive Care.* 2017;7(1):71

65. Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med.* 2014;12(6):573–576

66. Friedberg MW, Chen PG, Van Busum KR, et al. Factors affecting physician professional satisfaction and their implications for patient care, health systems, and health policy. *Rand Health Q.* 2014;3(4):1

67. Sexton JB, Adair KC, Proulx J, et al. Emotional exhaustion among US health care workers before and during the COVID-19 pandemic, 2019-2021. *JAMA Netw Open.* 2022;5(9):e2232748

68. ASPE. Impact of the COVID-19 pandemic on the hospital and outpatient clinician workforce: challenges and policy responses. Available at: https://aspe.hhs. gov/reports/covid-19-health-care-workforce. Accessed September 25, 2022

69. Abbasi J. Pushed to their limits, 1 in 5 physicians intends to leave practice. *JAMA.* 2022;327(15):1435–1437

70. AAP. AAP, AACAP, CHA declare national emergency in children's mental health. Available at: https://publications.aap.org/ aapnews/news/17718. Accessed March 12, 2022

71. Sofaer S. Qualitative methods: what are they and why use them? *Health Serv Res.* 1999;34(5 Pt 2):1101–1118