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PATIENT SAFETY

701 Dropping the Baton: A Qualitative Analysis of Failures During the Transition From Emergency Department to Inpatient Care
LJ Horvitz, et al

715 The Safety of Emergency Care Systems: Results of a Survey of Clinicians in 65 US Emergency Departments
DJ Magid, et al

CARDIOLOGY

727 Randomized Trial of Computerized Quantitative Pretest Probability in Low-Risk Chest Pain Patients: Effect on Safety and Resource Use
JA Kline, et al

736 Emergency Department Triage of Acute Myocardial Infarction Patients and the Effect on Outcomes
CL Atterna, et al

748 S3 Detection as a Diagnostic and Prognostic Aid in Emergency Department Patients With Acute Dyspnea
SP Collins, et al

PEDIATRICS

762 Parental Preferences for Boarding Locations When a Children's Hospital Exceeds Capacity
BD Gashler, et al

767 The Effect of Hospital Bed Occupancy on Throughput in the Pediatric Emergency Department
DF Hillier, et al

777 The Effect of Family Presence on the Efficiency of Pediatric Trauma Resuscitations
NC Dudley, et al

785 Bedside Sonographic Measurement of Optic Nerve Sheath Diameter as a Predictor of Increased Intracranial Pressure in Children
A Li, et al

TRAUMA

796 Neurocognitive Function of Emergency Department Patients With Mild Traumatic Brain Injury
SE Peterson, et al

804 Hemostatic Efficacy of Modified Amylopectin Powder in a Lethal Porcine Model of Extremity Arterial Injury
M Kilbourne, et al

INJURY PREVENTION

814 Prevalence of Past Year Assault Among Inner-City Emergency Department Patients
RM Cunningham, et al

NEWS AND PERSPECTIVE

23A California Court Bans Emergency Physician Balance Billing; Emergency Physicians Decry Major Blow to Beleaguered Emergency Care Safety Net
J Greene

26A Recession Threatens Medical Meeting Attendance; Education Funds Slashed
E Berger

28A Fed Up With Funding, California Emergency Physicians Sue The State
E Berger

www.annemergmed.com *Full Table of Contents starts on page 5A*

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The Effect of Family Presence on the Efficiency of Pediatric Trauma Resuscitations

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Study objective: Family presence has broad professional organizational support and is gaining acceptance. We seek to determine whether family presence prolonged pediatric trauma team resuscitations as measured by time from emergency department arrival to computed tomographic (CT) scan, and to resuscitation completion.

Methods: A prospective trial offered families of pediatric trauma patients family presence on even days and no family presence on odd days. Primary outcome measures were time from arrival to CT scan and to resuscitation completion (laboratory tests, emergency procedures, portable radiographs, and secondary survey). We evaluated the effect of family presence in an adjusted Cox proportional hazards model. Staff and family experiencing a resuscitation with family presence were asked their opinions of that experience.

Results: Of 1,229 pediatric trauma activations, 705 patients were included in the study protocol, 283 with family presence on even days, 422 without family presence on odd days. Median times to CT scan (21 minutes; IQR 16 to 29 minutes) and median resuscitation times (15 minutes; IQR 10 to 20 minutes) were similar with and without family presence. There was no clinically relevant difference in CT time (hazard ratio 1.04; 95% confidence interval [CI] 0.83 to 1.30) or resuscitation time (hazard ratio 0.98; 95% CI 0.83 to 1.15). Families believed that family presence was helpful both to their child and themselves.

Conclusion: This prospective trial shows that family presence does not prolong time to CT imaging or to resuscitation completion for pediatric trauma patients. Family presence does not negatively affect the time efficiency of the pediatric trauma resuscitation. [Ann Emerg Med. 2009;53:777-784.]

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INTRODUCTION

Background

Family presence, introduced in the medical literature in 1987,¹ is defined as "the attendance of family members in a location that affords visual or physical contact with the patient during invasive procedures or resuscitation."² Structured family presence programs provide written guidelines, education of staff, training for family support persons, and opportunity for feedback and evaluation. Family support for family presence is well documented.³⁻⁷ Organizational support includes the Emergency Nurses Association, American College of Emergency Physicians (ACEP), American Academy of Pediatrics (AAP), National Association of Emergency Medical Technicians, and the American Heart Association.⁸⁻¹² A statement supported by

ACEP and the AAP recommends the option of family presence for all aspects of emergency care.¹³

Importance

Support for family presence is not universal. A survey of trauma surgeons concluded that family presence during all aspects of the trauma resuscitation was inappropriate.¹⁴ One concern raised is that family will distract the trauma team, increasing stress, resulting in performance problems that affect care or prolong a resuscitation.¹⁴ A survey of health care providers found that 15% believed that family presence was associated with longer resuscitation efforts.³ Most pediatric trauma does not require immediate operative intervention, and many patients have computed tomographic (CT) imaging performed after the initial resuscitation. Prolonged resuscitation

Editor's Capsule Summary*What is already known on this topic*

Parental presence during pediatric resuscitation is being increasingly encouraged, although many fear that it might impair the speed and efficiency of care.

What question this study addressed

Whether parental presence delays pediatric trauma resuscitations, as measured by time to computed tomographic (CT) scan.

What this study adds to our knowledge

Seven hundred five pediatric trauma victims were assigned to family presence or no presence during resuscitation. There was no difference between the groups in time to CT scan, and other measures of care were similarly unaffected.

How this might change clinical practice

The philosophy of parental presence during pediatric resuscitation is supported by the American College of Emergency Physicians and American Academy of Pediatrics. These data provide reassurance that the presence of a parent should not commonly impair the timeliness of care.

may delay patient movement to CT scan, and we believed the time from arrival to CT scanning (CT time) would be a good measure of the efficiency of the resuscitation. Because not all patients require CT, we used resuscitation time (time to completion of all laboratory testing, emergency procedures, portable radiographs and secondary survey) as another measure of resuscitation efficiency. Resuscitation delays could affect patient outcomes and need to be studied before family presence policies are implemented. Studying pediatric patients is important because families are increasingly allowed to witness procedures in the emergency department (ED) and accompany children during transport. Extending family presence into the trauma area may be indicated if it does not affect patient care.

Goals of This Investigation

We sought to focus our investigation on trauma care provided during the initial evaluation in the ED. We hypothesized that family presence does not prolong the resuscitation for pediatric trauma patients. Our study objective was to compare pediatric trauma resuscitations with and without family presence and evaluate the effect of family presence on CT time and resuscitation time.

MATERIALS AND METHODS**Study Design and Setting**

This was a single-center, prospective trial in the ED at a freestanding American College of Surgeons Level 1 pediatric

trauma center with an annual ED census of 45,000 pediatric patients. The institutional review board at the University of Utah approved the study protocol, and written informed consent was obtained from staff before study initiation. Informed consent was waived for trauma registry data. Family members offered family presence gave verbal consent before entering the trauma room, and written informed consent was obtained from all families for survey completion.

Selection of Participants

Data were collected prospectively on all children requiring trauma team activation between March 1, 2004, and June 18, 2006, and included as part of our trauma registry. Trauma team activations are categorized as trauma 1 if out-of-hospital information meets the following criteria: shock, significant penetrating injury, acute intracranial hematoma with mass effect, obvious severe open cranial injury, intubation, Glasgow Coma Scale (GCS) score less than or equal to 10, traumatic paralysis, amputation proximal to ankle/wrist or traumatic arrest. Trauma 2 activations include GCS score 11 to 14; severe hypothermia; stable with multiple injuries or isolated intra-abdominal, intrathoracic, or intracranial injury; or stable patients with a high-energy mechanism of injury. Core trauma team members for trauma 1 and 2 activations include a trauma surgeon, pediatric emergency medicine fellow (when available) or a pediatric emergency medicine attending physician, trauma nurse, and trauma nurse practitioner. Trauma 3 patients are stable, not meeting any of the above criteria, and were not included in our study.

Interventions

Before study initiation, social workers were trained as family support persons. Physicians and staff were educated about family presence and the study objectives. Periodic updates were given during the study period. Digital clocks were installed in the trauma room, and trauma flow sheets were changed to improve documentation.

A study protocol was created, offering available families the option of family presence during trauma resuscitations on even days. Before entering the trauma room, family members were oriented to the trauma resuscitation and screened by a social worker. The option of family presence was explained, and family members were informed about the research study and potential risks to family presence. They were given the option to accept or decline family presence. The social worker or trauma surgeon could exclude family from the trauma room if they exhibited disruptive behavior. Disruptive behavior was defined as violent behavior, loss of self-control, extremely loud voices, concern for influence of alcohol or drugs, or inability to comply with the requirements of family presence. The trauma surgeon could also exclude family to facilitate the resuscitation. Two family members were allowed entry at a time; children were not permitted. The social worker accompanied family into the trauma room after the primary survey (initial assessment of airway, breathing, and circulation). Family members were asked

to stand behind the trauma line but later allowed to approach the patient's head if procedures were not actively being performed. Family members were allowed to leave if desired. To be defined as "present," the family member needed to enter the trauma room before the end of the resuscitation (defined as completion of laboratory tests, emergency procedures, portable radiographs, and secondary survey). Families of patients arriving on odd days were asked to wait outside the trauma room with social work support (our standard at the time). They were not informed of the study, because there were no interventions and no staff surveys for those patients. If a family member specifically requested family presence on an odd day and the trauma surgeon was in agreement, they were allowed to enter the trauma room with similar expectations as on even days.

After resuscitations with family presence, staff (trauma surgeon, pediatric emergency medicine attending physicians/fellow, trauma nurse, nurse practitioner, and the social worker) completed a brief survey (Appendix E1, available online at <http://www.annemergmed.com>). These forms were filled out anonymously, although the patient's trauma identifier was stamped on the form, allowing linkage to the patient's data. Staff placed completed forms in a locked box in our trauma area. Three questions on the staff survey used a visual analog scale to measure the level of agreement with statements about the specific family presence experience. Each visual analog scale consisted of a horizontal 100-mm line anchored by the words "strongly agree" and "strongly disagree."

Families of all trauma patients were given a written survey (1 per family) during their hospital admission at the first visit by the inpatient social worker or were mailed a survey 1 month later if the child was discharged from the ED or deceased (Appendix E1, available online at <http://www.annemergmed.com>). English or Spanish surveys were available. Family surveys were linked to trauma registry data. They were discontinued after 2 years because of time and personnel constraints.

Survey questions were created by the investigators after a review of the literature^{3-6,14,15} and by consensus for content validity. Questions were presented for content and intelligibility to the trauma surgeons and pediatric emergency physicians. A 2-week trial period before study initiation determined there were no problems with the use of the surveys by family and staff.

Data Collection and Processing

In each trauma resuscitation, the trauma nurse documented patient information on a flow sheet. Timing of arrival and trauma interventions was recorded, including times of portable radiographs, laboratory tests, intravenous line placement, and procedures performed, and time to disposition and end of the resuscitation. The flow sheet had space for documentation of family presence and time. A single trauma registrar, who completed the Abbreviated Injury Scale Course through the Association for the Advancement of Automotive Medicine and who was a member of the Utah Trauma User's Group,

abstracted data from the flow sheet and patient chart and directly entered them into the electronic trauma registry. In the first 2 weeks of the study, 20 trauma resuscitations were reviewed to identify problems with data collection. Trauma registry data from all trauma 1 and trauma 2 cases during the study period were included. Operational definitions were consistent with the Utah Trauma Registry Data Dictionary.¹⁶ Missing data were assumed to be absent. For repeated measurements, the first measurement or measurement on arrival in the ED was recorded. In cases of incomplete documentation of family presence by the trauma nurse or social worker, the registry was reviewed to determine whether family presence occurred during the trauma resuscitation. If conflicting documentation was found or family presence could not be determined to have occurred during the resuscitation, the patient was placed in the conflicting data category and was not included in any analysis requiring knowledge of family presence status. Conflicting data were included in an intention-to-treat analysis. Records with no mention of family presence were deemed incomplete. Meetings between the registrar and the primary investigator occurred quarterly for review of conflicts in the data and for routine monitoring. The trauma registrar was aware of the purpose of the study. Injury Severity Scores and Revised Trauma Scores were calculated by the trauma registrar.

Outcome Measures

Our main outcome measure was the time from arrival of the patient in the trauma room to leaving the trauma room for CT scan (CT time). A secondary outcome measure, resuscitation time, was defined as time to completion of all laboratory tests, emergency procedures, portable radiographs, and secondary survey.

Primary Data Analysis

Sample size calculation was performed before study initiation. Previously at our institution, a mean time to CT scan for trauma patients of 27 minutes (SD 14.9 minutes)¹⁷ was published. The authors thought that a 5-minute difference in time to CT scan was clinically relevant and would reflect meaningful prolongation in patient care. This choice reflected a desire to select the smallest time difference that could be clinically important for our study because smaller time differences were thought to be clinically insignificant. We wished to enroll sufficient patients to have an 80% chance of detecting this time difference for our main outcome measure of time to CT scan. Using the historical SD of 14.9 and assuming a 2-sided α equal to 0.05 and power equal to 0.8, the required sample size was 143 in each group. This calculation was based on a traditional 2-sample t test because only summary statistics describing time to CT were available before study start.

Our objective was to evaluate the effect of family presence on the efficiency of the trauma resuscitation. We included exceptions in the study design, allowing a social worker or trauma surgeon to exclude families, and for families requesting family presence to be included on nonprotocol days. Variability

could be introduced because of these exclusions or inclusions. Therefore, 3 separate analyses were performed on the data to provide a complete view of the effect of family presence on the trauma resuscitation. Data were analyzed first, according to the protocol with only those receiving family presence on even days and those without family presence on odd days included. This per-protocol analysis was used to form the conclusions for the study. Second, data were analyzed by an intention-to-treat analysis, comparing those arriving on even days with those arriving on odd days, regardless of family presence status. Finally, data were analyzed according to the treatment they actually received, regardless of the date of presentation, comparing those with family presence to those without family presence during the study period.

Statistical analysis was performed using Stata 9.2 (StataCorp, College Station, TX) and SAS 9.1 (SAS Institute, Cary, NC). Unadjusted differences in median times were described with 95% confidence intervals (CIs), using the bias-corrected bootstrap method.¹⁸ Because of key differences in the 2 comparison groups at baseline, we also evaluated the effect of family presence in an adjusted Cox proportional hazards model. This model controlled for the following key covariates deemed likely to affect the outcome: patient age, Injury Severity Score, GCS score, trauma level, mode of arrival to ED, and whether the patient was intubated on arrival. Covariates were selected according to clinical experience and the medical literature. Revised Trauma Score, although also a potential predictor of time outcomes, was not included in adjusted analyses because GCS is one of the components of this score. Results from the Cox model are described as adjusted hazard ratios with 95% CIs. Hazard ratios close to unity indicate that groups have similar “risk” of CT at any given time (ie, the time to CT is not different between groups). The proportional hazards assumption was evaluated using time-dependent covariates.

Intervals are represented graphically for CT and resuscitation time with box-plot graphs, the horizontal line representing the median value and the hinges the interquartile range. This same information is represented in table form for other intervals in the resuscitation (laboratory tests, intravenous line, chest radiography, Foley, nasogastric tube, endotracheal tube and chest tube), as well as for survey responses using the visual analog scale.

RESULTS

A total of 1,229 pediatric trauma activations occurred during the study period, 623 on even days and 606 on odd days for the intention-to-treat analysis (light grey shading, Figure 1). On even days, 8 children had family available but family presence was either not offered or declined, and many patients did not have available family. On odd days, family presence status could not be verified on some charts (99), and 68 families were offered family presence at parent request. Twenty-seven records were incomplete, leaving 705 patients available for per-protocol analysis (dark grey shading, Figure 1). Characteristics of protocol patients are listed in Table 1. In our study protocol,

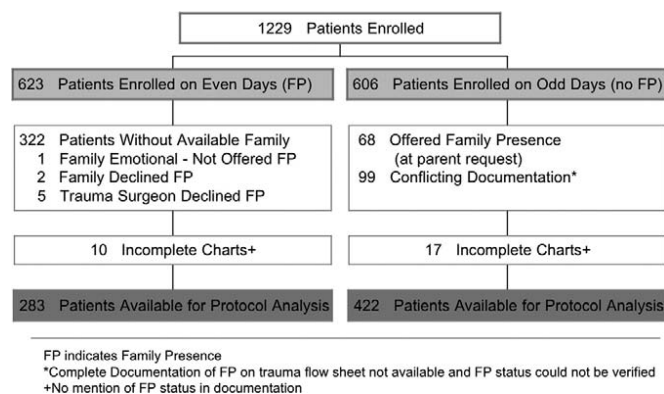


Figure 1. Flow chart of trauma activations.

Table 1. Patient characteristics.*

Characteristic	Family Presence (N=283)	No Family Presence (N=422)
Age, y, mean (SD)	8.0 (4.7)	7.6 (4.8)
Trauma 1 (%)	40 (14)	117 (27)
Trauma 2 (%)	243 (86)	305 (73)
GCS, median (IQR)	15 (15–15)	15 (12–15)
Intubated on arrival (%)	33 (12)	91 (22)
ISS median (IQR)	9 (5–16)	11 (5–21)
RTS median (IQR)	7.8408 (7.55–7.8408)	7.55 (6.8174–7.8408)
Transport to hospital (%)		
Ambulance	164 (58)	118 (28)
Helicopter	59 (21)	248 (59)
Fixed-wing aircraft	45 (16)	52 (12)
Patient's own vehicle	13 (5)	3 (1)
Patient disposition (%)		
Operating room	29 (10)	56 (20)
Emergency	4 (1)	16 (4)
PICU admission	83 (29)	158 (37)
Emergency	11 (4)	15 (4)
Discharge from hospital (%)		
Alive	278 (98)	398 (94)
Died	5 (2)	24 (6)

SD, Standard deviation; *IQR*, interquartile range; *ISS*, Injury Severity Score; *RTS*, Revised Trauma Score; *PICU*, pediatric intensive care unit.
 *Level of trauma (trauma severity, trauma 1>trauma 2). OR or PICU emergency defined as leaving ED for OR/PICU <30 minutes from end of resuscitation

patients with and without family presence were similar with regard to age, sex (66% male), and trauma type (98% blunt). Patients without family presence were more severely injured than those with family presence, as reflected by their Injury

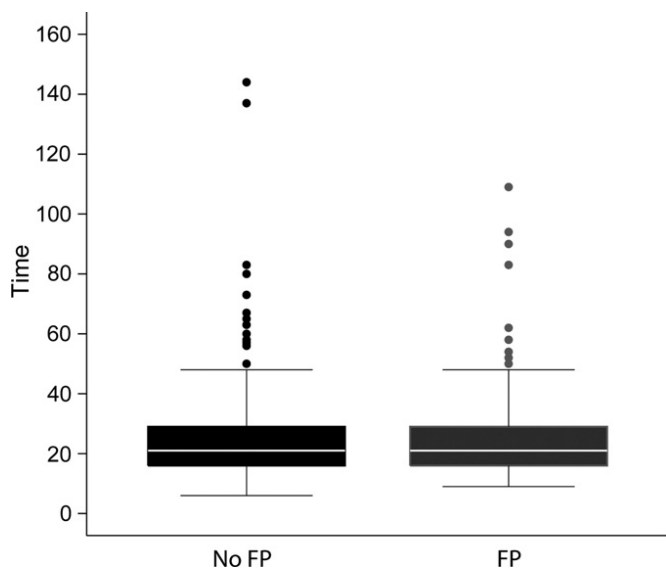


Figure 2. Time to CT scan with and without family presence in the study protocol. The horizontal line represents the median value; the hinges of the box, the interquartile range. Whiskers denote the upper and lower adjacent values, and circles represent outside values.

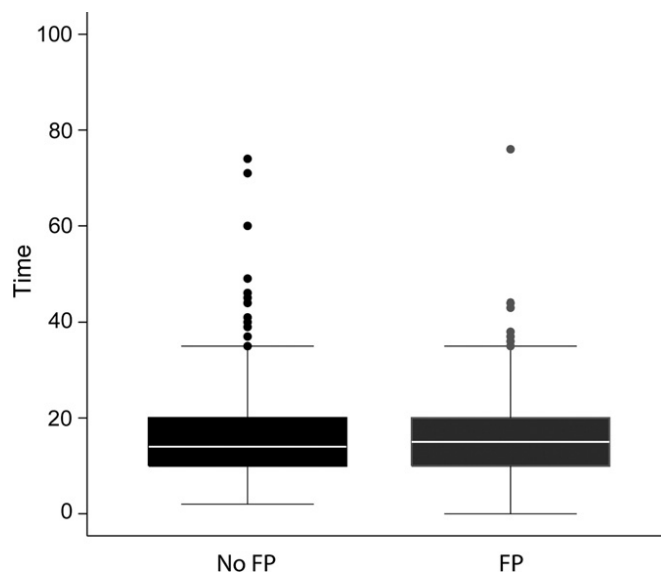


Figure 3. Resuscitation time with and without family presence in the study protocol. The horizontal line represents the median value; the hinges of the box, the interquartile range. Whiskers denote the upper and lower adjacent values, and circles represent outside values.

Severity Score, Revised Trauma Score, and level of trauma activation.

During the study period, for all trauma activations, 50 patients did not survive (4%). Thirteen patients died in the ED; 37 were admitted but did not survive to hospital discharge. None of the patients who died in the ED went to CT scan.

In our per-protocol analysis, 53% (150/283) of patients with family presence and 64% (268/422) without family presence went to CT scan. CT time had a median value of 21 minutes (IQR 16 to 29 minutes) for patients with family presence; similarly, the median value for CT time for patients without family presence was also 21 minutes (IQR 16 to 29 minutes) (Figure 2). The unadjusted difference in medians was 0 (95% CI -2 to 2). There was no clinically relevant difference in CT time between those with and without family presence after adjusting for patient age and markers of injury severity (hazard ratio 1.04; 95% CI 0.83 to 1.30).

The median resuscitation time was 15 minutes (IQR 10 to 20 minutes) for patients with family presence in our protocol and 15 minutes (IQR 10 to 20 minutes) for patients without family presence (Figure 3). The unadjusted difference in medians was 0 (95% CI -1 to 1). There was still essentially no difference in resuscitation time between those with and without family presence after adjusting for patient age and markers of injury severity (hazard ratio 0.98; 95% CI 0.83 to 1.15).

The time family entered the trauma room was documented in only 39% (110/283) of resuscitations with family presence. However, when it was documented, it occurred shortly after patient arrival, with a mean time of 2 minutes (IQR 0 to 8 minutes). Other resuscitation measures are listed in Table 2.

Table 2. Intervals.

Interval	Family Presence (N=283)			No Family Presence (N=422)		
	No.	Median (IQR)*	Success on First Attempt, %	No.	Median (IQR)*	Success on First Attempt, %
CT	150	21 (16-29)	NA	268	21 (16-29)	NA
Resuscitation	281	15 (10-20)	NA	421	15 (10-20)	NA
Family entry	110	2 (0-8)	NA			
Laboratory	261	8 (5-11)	NA	395	7 (5-10)	NA
IV	106	8 (5-13)	76	141	8 (5-12)	84
CXR	203	8 (5-11)	NA	351	7 (5-10)	NA
Foley	31	20 (16-29)	100	74	17 (12-33)	93
NG	33	15 (12-24)	90	69	12 (9-22)	82
ETT	12	15 (11-25)	83	18	15 (10-22)	50
Chest tube	3	17 (14-18)	100	4	15 (11-19)	100

*Median value in minutes (interquartile range).

Seven hundred fifty-eight staff surveys were completed immediately after a trauma resuscitation with family presence. Of 283 resuscitations in our protocol with family presence, 22% (63/283) did not have a completed survey and 12% (34/283) had a social worker as the only respondent. Forty-five percent (127/283) had between 4 and 6 staff surveys. Survey completion was 70% (197/283) for social workers, 53% (149/283) for the trauma nurse, and 52% (146/283) for the nurse practitioner. Total number of distributed surveys was not tracked, and physician response to trauma resuscitations was variable. Disruption of the trauma resuscitation was reported by 28 staff members in 24 of 220 resuscitations (11%), with agreement among care providers for only 4 patients. The most commonly

Table 3. Staff surveys.

Question	Trauma Surgeon (N=102)	ED Attending Physician (N=89)	ED Fellow (N=73)	RN (N=149)	Nurse Practitioner (N=146)	Social Work (N=197)
Were you aware the family was present? % (Yes)	86	94	77	93	95	Not asked
FP was helpful for this family*	19 (6–42)	12 (3–29)	22 (9–53)	17 (2–45)	13 (2–30)	9 (2–31)
FP was helpful for this child*	18 (6–46)	11 (5–28)	23 (7–64)	12 (2–38)	23 (3–47)	9 (2–35)
My stress was increased by the presence of the family*	83 (72–95)	93 (86–99)	90 (80–98)	98 (84–100)	99 (98–100)	Not asked
Do you feel that FP increased the professionalism of the trauma team? % (Yes)	21	25	2	35	3	Not asked
Do you feel that resuscitation efforts were prolonged because of FP? % (Yes)	4	0	2	0	4	Not asked

FP, Family presence.

*Visual analog scale, anchored with strongly agree at 0, strongly disagree at 100. Value represented is median (interquartile range).

Table 4. Family surveys: Opinions of families with family presence.

Question (N=177/351)	Median (IQR)
Being present with my child was helpful to me*	1 (0–2)
Being present with my child was helpful to him/her*	1 (0–2)
Being present with my child was upsetting to me*	95 (50–99)
Being present with my child in a similar situation is something I would do again*	1 (0–2)

*Visual analog scale, anchored with strongly agree at 0, strongly disagree at 100.

reported disruption was verbal (talking, interrupting) in 57% (16/28). Only 14% (4/28) reported the family member was physically in the way. No family members were asked to leave the room and no interference with procedures was noted. Staff surveys are summarized in Table 3.

All families during the first 2 years of the study were asked to complete a survey during the first few days of the hospitalization or after discharge or death. Six hundred twenty-two of 1,034 (60%) distributed surveys were completed, 50% (177/351) by families with family presence (treatment received) about that experience (Table 4). Only 2 families commented their child was not aware of their presence.

Sensitivity Analyses

Data were analyzed by intention-to-treat analysis, comparing those arriving on even days (623) with those arriving on odd days (606). There were no clinically important differences in age, sex, trauma type, severity of injury, or mode of transport by day of arrival. The median CT time was 20 minutes (IQR 16 to 27 minutes) for patients arriving on even days and 21 minutes (IQR 17 to 29 minutes) for patients arriving on odd days. The unadjusted difference in median CT time was –1 (95% CI –3 to 1). The adjusted hazard ratio was 1.15 (95% CI 1.00 to 1.34). The unadjusted difference in median resuscitation time was 0 (95% CI –1 to 1). The adjusted hazard ratio was 1.05 (95% CI 0.94 to 1.18).

Data were also analyzed by a treatment-received analysis in which all patients receiving family presence (351), regardless of day of arrival, were analyzed together and compared with all patients without family presence (752) (Figure 1). The unadjusted difference in median CT time was 1 (95% CI –1 to 3). The adjusted hazard ratio was 0.94 (95% CI 0.77 to 1.13). The unadjusted difference in median resuscitation time was 0 (95% CI –1 to 1). The adjusted hazard ratio was 1.02 (95% CI 0.89 to 1.18).

LIMITATIONS

Our study was not randomized or blinded, introducing bias in patient enrollment. Prestudy education and agreement by all services involved attempted to eliminate caregiver bias. Children

with family presence in our protocol were, however, less severely injured than those without family presence. We believe this is largely due to their mode of transport. Unstable patients and those with more severe injuries are transported quickly; usually by helicopter.¹⁷ Parents may not accompany their child during helicopter transport, because of space and weight constraints. Therefore, family presence is unlikely for the sickest patients. Those more severely injured may also have family who are injured and unable to come to the ED. More severely injured patients may take longer to stabilize but also may be transported more quickly to CT. Our analysis controlled for key differences in our groups yet still did not find any difference in CT time or resuscitation time between those with and without family presence.

Our study relied on documentation of time, which can be unreliable or incomplete and influenced by opinions or knowledge of family presence. We attempted to standardize and improve documentation through continuing education and placement of digital clocks. Additionally, the time of family entry may affect differences between groups. Families entering close to resuscitation completion will potentially have less effect on the resuscitation than those arriving earlier. We do not have complete information about family arrival time, limiting our ability to determine this factor. Our patient population, typical of many pediatric trauma centers, sustained blunt trauma and did not require many invasive procedures. As such, our study results may not generalize to populations with significant penetrating injury or requiring multiple invasive procedures. Finally, our surveys were voluntary and not validated. We created a brief survey to facilitate timely completion. Even so, surveys were not completed on all patients. Responses may reflect agreement with family presence because nonresponders may be neutral or even negative. Furthermore, survey completion by families did not occur immediately after the resuscitation and may reflect opinions about subsequent care.

DISCUSSION

We designed our study to evaluate the effect of a new family presence program on the efficiency of pediatric trauma resuscitations. Our results demonstrate that resuscitation time and CT time for patients with and without family presence are similar, concluding that when family presence is offered in a structured program, there is no significant effect on the efficiency of the trauma resuscitation. A previously published study, by O'Connell et al,¹⁹ did not identify any differences in time to completion of key components of the pediatric trauma resuscitation. Our study addressed overall resuscitation efficiency as measured by time, something not previously investigated, to our knowledge. We included all trauma activations during the study period, controlled for key variables including injury severity, and performed an intention-to-treat analysis yet still did not find any differences caused by family presence. Clinicians are often slow to accept family presence because of concerns about interference. Both our study and the O'Connell et al¹⁹ study demonstrate that interference is a rare

event,¹⁹ and our larger sample size lends credence to this finding. The O'Connell et al¹⁹ study found that more severely injured patients often had family presence terminated either by staff or the family themselves. We did not have any family presence encounters terminated, yet still found no interference with procedures or resuscitation prolongation.

Our voluntary surveys were anonymous in hopes of gaining honest feedback about family presence. It is encouraging, therefore, to see staff opinions that family presence was helpful for the child and family. In our system, the trauma surgeon serves as the team leader with a pediatric emergency medicine fellow. These 2 participants were less likely to report they were even aware of family presence and were presumably focused on patient care. Our trauma surgeons did report more stress because of family presence. The O'Connell et al¹⁹ study found, however, that trauma surgeons did not report any effect on medical decisionmaking because of family presence. Perceived stress may be acceptable if it does not affect patient care or medical decisions.

In previous studies, families supported the option of family presence.^{1,3-5,20} Because most families believe it is their right to be present at a resuscitation,³ it may become difficult to exclude them. We found those experiencing family presence overwhelmingly in favor of it, believing it to be beneficial for both their child and themselves. A study by Bauchner et al²⁰ suggested that parental presence for invasive procedures may even reduce parental anxiety. The long-term effects of family presence, however, are still not known.

Pediatric trauma resuscitations differ from adult trauma resuscitations. Fewer invasive procedures are performed, and most injuries are managed nonoperatively. A parent's exposure to the bloody appearance and disfigurement of his or her child often begins at the scene and continues in the out-of-hospital period. Parents are often allowed to accompany their children on ambulances and fixed-wing transports. They are allowed in the examination room for routine emergency visits and increasingly allowed to stay for invasive procedures. There is growing evidence that family presence does not negatively affect patient care during invasive procedures or resuscitations,¹⁹⁻²¹ and there are no objective data supporting the routine exclusion of families. Published guidelines for family presence in EDs now exist,^{2,8,22} and both ACEP and the AAP support the development of family presence programs.^{13,22} This is a critical time for a family, and structured programs need to provide family presence as an option. Future research including more children with serious or fatal injuries should continue to evaluate the effect of family presence, as well as its long-term effects on patients and families. Our study provides support for family presence, demonstrating that family presence does not negatively affect the time efficiency of the pediatric trauma resuscitation.

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During painful procedures to calm/support the child

I would leave it up to the trauma surgeon

Never

If you answered YES to Question 6, please indicate how strongly you agree or disagree with these statements by placing a cross mark on the lines below.

12. Being present with my child was helpful to me.

Strongly _____ Strongly

Agree _____ Disagree

13. Being present with my child was helpful to him/her

Strongly _____ Strongly

Agree _____ Disagree

14. Being present with my child was upsetting to me.

Strongly _____ Strongly

Agree _____ Disagree

15. If you agreed with this statement, can you explain what was upsetting and why?

16. Being present with my child in a similar situation is something I would do again.

Strongly _____ Strongly

Agree _____ Disagree

17. Any Comments?

Family Presence Staff Survey

Circle One:

Trauma Surgeon ED Attending ED Fellow Trauma RN Trauma NP

1. Were you aware the family was present? Yes No

Please indicate how strongly you agree or disagree with each statement.

2. Family Presence was helpful for this family

Strongly _____ Strongly
Agree _____ Disagree

3. Family Presence was helpful for this child

Strongly _____ Strongly
Agree _____ Disagree

Child not aware family was present

4. My stress was increased by the presence of the family

Strongly _____ Strongly
Agree _____ Disagree

5. Do you feel that the presence of family increased the professionalism of the trauma team?

Yes No

6. Do you feel that resuscitation efforts were prolonged because of family presence?

Yes No

7. Did you feel that family members interrupted/disrupted the resuscitation?

Yes No

If Yes, Why?