EVIDENCE WORKSHEET

Guideline 10.6B: Family presence during resuscitation [PAEDIATRIC PATIENTS]

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Clinical questions:

1. In paediatric patients who have sustained cardiac arrest (P) does family presence during resuscitation (I) compared to no family presence during resuscitation (C) *affect patient survival (O)?*

2. In paediatric patients who have sustained cardiac arrest (P) does family presence during resuscitation (I) compared to no family presence during resuscitation (C) *impair resuscitation team performance (O)?*

3. In paediatric patients who have sustained cardiac arrest (P) does family presence during resuscitation (I) compared to no family presence during resuscitation (C) *have adverse effects on families (O)?*

Search Strategies:

A. The Cochrane Library (CDSR, CENTRAL, DARE)
((resuscitation) AND (family)).ti,ab and as a keyword
Search results: 37

B. MEDLINE (1950 – current)
[(exp family) OR (exp professional-family relations) OR (exp visitors to patients) OR ((parent$ or family) adj (presence or attendan$ or participat$)).ti,ab.] AND [(exp resuscitation) OR ((CPR or resuscitation).ti,ab.) OR (trauma adj (resuscitation or activation)).ti,ab.]
Search results 1391

C. EMBASE
[('family'/exp) OR ('relative'/exp) OR ('human relation'/exp) OR ('child parent relation'/exp) OR ('family attitude'/exp)] AND [('resuscitation'/exp) OR ('cpr' OR 'cardiac arrest' OR 'trauma resuscitation' OR 'resuscitation'):ab]
Search results 369

Databases / sources searched:
In addition to the electronic databases detailed above, backward and forward searching was undertaken in Scopus, hand searching of reference lists of relevant articles, text-word based grey literature searches in Google Scholar.

Inclusion / exclusion criteria:
Included were comparative trials, cohort studies, observational studies or interview studies reporting patient clinical outcomes, family psychological/emotional outcomes or resuscitation process outcomes after a family witnessed resuscitation by healthcare professionals?
Excluded were case reports, non-systematic reviews, letters, editorials and opinion pieces. Also excluded were studies reporting 'attitudes' of healthcare professionals (as opposed to

observations). Studies not available in English and studies not available in full (abstract-only) were also excluded.

Search results:
The combined searches outlined above yielded 1423 studies, which were assessed for inclusion as evidence.

Number of papers / studies meeting criteria for further review: 11
Two (2) LOE II randomised controlled trials, one (1) LOE III-1 pseudo-randomised controlled trial, two (2) LOE III-2 cohort studies, five (5) LOE IV case series and one (1) study of a manikin model of resuscitation provided the evidence for this guideline.

Methodological quality, levels of evidence & outcomes of studies examining the effect of family presence in resuscitation of adults:

Good	**Fair**	**Poor**
The methodological quality of the study is high with the likelihood of any significant bias being minimal	The methodological quality of the study is reasonable with the potential for significant bias being likely.	The methodological quality of the study is weak possessing considerable and significant biases

1.Studies *supportive* of family presence for patient survival:

Good				**O'Connell 2007 [B]**			
Fair							
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

2. Studies *neutral* for family presence for patient survival:

Good							
Fair							
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

3. Studies *opposing* family presence for patient survival.

Good							
Fair							
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

Endpoints:
A = Return of spontaneous circulation
B = Survival of event
C = Survival to hospital discharge
D = Intact neurological survival
E = Minimal adverse effects
F = Other endpoint

4. Studies *supportive* of family presence for not impairing resuscitation team performance:

Good			Dudley 2009 (A)	O'Connell 2007 (A)		Doyle 1987 (B) Mangurten 2006 (B) Meyers 2000 (B)	
Fair		Robinson 1998 (B)				Kingsnorth 2009 (B) Oman 2010 (B)	
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

5. Studies *neutral* for family presence not impairing resuscitation team performance:

Good							
Fair							
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

6. Studies *opposing* family presence for not impairing resuscitation team performance:

Good							
Fair							Fernandez 2009 [A]
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

Endpoints:
A = CPR process outcomes **B** = Observed interruptions to care not further defined

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7. Studies *supportive* for family presence not having adverse effects on families.

Good		Holzhauser 2006 (A)				Doyle 1987 (A) Mangurten 2006 (A) Meyers 2000 (A)	
Fair				Maxton 2008 (A)			
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

8. Studies *neutral* for family presence not having adverse effects on families.

Good							
Fair							
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

9. Studies *opposing* family presence for not having adverse effects on families.

Good							
Fair							
Poor							
	I	**II**	**III-1**	**III-2**	**III-3**	**IV**	**Extrapolated evidence**
	NH&MRC levels of evidence						

Endpoints:
A = Response to survey / interview (unvalidated) **B**= Response to validated survey/ interview tool to assess psychological / emotional state

Treatment recommendation:

Class B: Based on the current evidence family members of paediatric patients undergoing cardiac or trauma resuscitation should be given the option to be present, ideally with a hospital-assigned support person. Each hospital should have a family presence policy and staff education strategy in place.

Reviewer's final comments and assessment of benefit / risk:

The vast majority of studies on family presence in resuscitation are surveys assessing the attitude of health professionals to the idea of an institutional family presence policy. While this is understandable in the context of identifying barriers to the implementation of policy, there is a dearth of studies comparing actual family or patient outcomes associated with family presence.

Survival benefit:
One good quality LOE III-2 cohort study reported improved survival rates associated with family presence in paediatric resuscitation compared with a group with no family presence, however the study was not powered for survival as an outcome. No other studies reported survival rates.

Resuscitation team performance:
One fair quality LOE II randomised controlled trial [Robinson 1998], one large, LOE III-1, good quality pseudo-randomised, controlled trial [Dudley 2009], one good quality LOE III-2 cohort study [O'Connell 2007] and five (5) LOE IV case series reported evidence that the presence of a family member during the trauma or cardiac resuscitation of a child did not impede the performance of the resuscitation team. Two of these studies [O'Connell 2007 & Dudley 2009] used 'time to critical clinical interventions' for example; intubation, IV

access, primary survey completion to compare or report resuscitation team performance. The remaining five studies reported the attending clinicians' or the observer's opinion as to whether the resuscitation was comprised in any way by the family presence.
One study, a fair quality manikin study (extrapolated evidence), reported that simulated 'family presence stress' resulted in a significantly longer time to the delivery of the fist shock, and the delivery of fewer shocks during the scenario. However, chest compressions, intubation and drug administration were not affected.

Adverse effects on family members:

One LOE II good quality randomised controlled trial [Holzhauser 2006], one fair quality LOE III-2 cohort study [Maxton 2000] and three good quality LOE IV case series [Doyle 1987, Mangurten 2006, Meyer 2000] all found that being present during the trauma or cardiac resuscitation of a paediatric family member did not have detrimental emotional or psychological impacts. Most studies reported that being present at the resuscitation was associated with improved measures of coping and positive emotional outcomes.

Citation List:

Bjorshol 2011
Bjorshol CA, Myklebust H, Nilsen KL, Hoff T, et al. Effect of socioemotional stress on the quality of cardiopulmonary resuscitation during advanced life support in a randomized manikin study. Crit Care Med 2011; 39 (2): 300-4
The aim of this study was to evaluate whether socioemotional stress affects the quality of cardiopulmonary resuscitation during advanced life support in a simulated manikin model. DESIGN: A randomized crossover trial with advanced life support performed in two different conditions, with and without exposure to socioemotional stress. SETTING: The study was conducted at the Stavanger Acute Medicine Foundation for Education and Research simulation center, Stavanger, Norway. SUBJECTS: Paramedic teams, each consisting of two paramedics and one assistant, employed at Stavanger University Hospital, Stavanger, Norway. INTERVENTIONS: A total of 19 paramedic teams performed advanced life support twice in a randomized fashion, one control condition without socioemotional stress and one experimental condition with exposure to socioemotional stress. The socioemotional stress consisted of an upset friend of the simulated patient who was a physician, spoke a foreign language, was unfamiliar with current Norwegian resuscitation guidelines, supplied irrelevant clinical information, and repeatedly made doubts about the paramedics' resuscitation efforts. Aural distractions were supplied by television and cell telephone. MEASUREMENTS AND MAIN RESULTS: The primary outcome was the quality of cardiopulmonary resuscitation: chest compression depth, chest compression rate, time without chest compressions (no-flow ratio), and ventilation rate after endotracheal intubation. As a secondary outcome, the socioemotional stress impact was evaluated through the paramedics' subjective workload, frustration, and feeling of realism. There were no significant differences in chest compression depth (39 vs. 38 mm, p = .214), compression rate (113 vs. 116 min-1, p = .065), no-flow ratio (0.15 vs. 0.15, p = .618), or ventilation rate (8.2 vs. 7.7 min-1, p = .120) between the two conditions. There was a significant increase in the subjective workload, frustration, and feeling of realism when the paramedics were exposed to socioemotional stress. CONCLUSION: In this advanced life support manikin study, the presence of socioemotional stress increased the subjective workload, frustration, and feeling of realism, without affecting the quality of cardiopulmonary resuscitation.
Extrapolated evidence (manikin model). Fair quality. Randomised, crossover trial of 38 ALS *scenarios, performed by paramedic teams on manikins. Intervention group were exposed to simulated stress and interference from 'relatives' (n=19), the control group performed manikin - ALS cardiac arrest scenario without simulated stress/interference (n=19). The primary outcome was CPR 'quality' assessed by chest compression depth and rate, no-flow time, time to defibrillation, time to*

intubation, and ventilation rate. No significant differences were reported in any of these parameters.

Doyle 1987

Doyle CJ, Post H, Burney RE, Maino J, Keefe M, Rhee KJ. Family participation during resuscitation: An option. Ann Emerg Med 1987; 16 (6): 673-5

We began to question the fairness of a policy to exclude close family members from the treatment room during attempted resuscitation of cardiac arrest victims. In 1982, after 13 of 18 surviving relatives (72%) who were surveyed about their experiences during the attempted resuscitation of a family member responded that they would have liked to be present during the resuscitation. We report the results of a program instituted at that time that allowed selected family members to be present during resuscitation efforts. A chaplain or nurse asked family members if they wished to be present in the resuscitation room, and those accepting were accompanied by a supporting emergency staff member who explained the milieu of the code room. None of the participants interfered with resuscitation efforts. Seventy persons who participated were later contacted by one of the chaplains and asked to complete a survey form. Forty-four of 47 respondents (94%) who had been present during resuscitation believed that they would participate again. Thirty-six (76%) thought that adjustment to the death or grieving was facilitated by their witnessing the resuscitation; 30 (64%) felt that their presence was beneficial to the dying family member. We conclude that laypersons may wish to be with family members who may be dying even though resuscitation efforts are being made, and that it is reasonable to inquire about this wish. This experience has assisted the grieving process for many and has not interrupted or adversely affected medical efforts at resuscitation.

Level IV case series. Good quality. 51 people (adults & children) who were with a relative during attempted resuscitation in one hospital ED responded to a postal survey, 20 staff were also surveyed. As reported in abstract, majority of relatives reported positive emotional outcomes. Staff reported no incidents where resuscitation performance was impeded.

Dudley 2009

Dudley NC, Hansen KW, Furnival RA, Donaldson AE, Van Wagenen KL , Scaife ER. The effect of family presence on the efficiency of pediatric trauma resuscitations. Ann Emerg Med 2009; 53 (6): 777-84

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 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.

LOE III-1 large, pseudo-randomised, controlled trial in one US level 1 paediatric trauma centre. Good quality. Relatives were allocated to the intervention group (n=283) on even days and the control group (n=422) on odd days. The intervention group was given the opportunity to accompany the child during trauma resuscitation, the control group was not. There was no difference between the

groups for the primary outcomes of (1) time to CT scan and (2) total resuscitation time.

Fernandez 2009

Fernandez R, Compton S, Jones KA, Velilla MA. The presence of a family witness impacts physician performance during simulated medical codes. Crit Care Med 2009; 37 (6): 1956-60

To determine whether the presence and behaviour of a family witness to cardiopulmonary resuscitation (CPR) impacts critical actions performed by physicians. DESIGN: This was a randomized comparison study of physicians' performance during a simulated cardiac arrest with three different family witness states. SETTING: This study was conducted at the Wayne State University Eugene Applebaum College of Pharmacy and Health Science's Center for Healthcare Simulation. SUBJECTS: Second-year and third-year emergency medicine (EM) residents from the Wayne State University Department of Emergency Medicine-affiliated residency programs and Michigan State University-affiliated EM residency programs. INTERVENTION: Thirty teams comprised of one second-year and one third-year EM resident were randomly assigned to one of the three groups: 1) no family witness; 2) a non-obstructive "quiet" family witness; and 3) a family witness displaying an overt grief reaction. MEASUREMENTS AND MAIN RESULTS: Each pair was assessed for time to critical actions (e.g., minutes to CPR and drug administration) and for resuscitation-based performance outcomes (e.g., number of shocks) during a simulated cardiac arrest. The time to critical events was similar across groups with respect to initiating CPR, attempting to intubate the patient, and pronouncing the death of the patient. However, the time to deliver the first defibrillation shock was longer for the overt reaction witness group (2.57 minutes) as compared with the quiet (1.77 minutes) and no family witness (1.67 minutes) groups. Additionally, fewer total shocks were delivered in the overt reaction witness groups (4.0 minutes) vs. the quiet (6.5 minutes) and no family witness groups (6.0 minutes). CONCLUSION: The presence of a family witness may have a significant impact on physicians' ability to perform critical actions during simulated medical resuscitations. Further study is necessary to see if this effect crosses over into real clinical practice and if training ameliorates this effect.

Extrapolated evidence (manikin model). Fair quality. Randomised, controlled trial of 30 ALS *scenarios, performed by 2-person physician teams on manikins. Intervention groups were exposed to (1) simulated overt stress from a 'relatives' (n=10) or (2) a non-obstructive quiet family witness (n=10). The control group performed manikin - ALS cardiac arrest scenario without simulated stress/interference (n=10). The study assessed clinical process measures and found that in the group exposed to simulated 'overt' stress from relatives, the time to delivery of first shock (2.57 vs 1.77, 1.67 min, p<0.05) was significantly longer and the number of shocks delivered were significantly fewer (4.0 vs 6.5, 6.0, p<0.05) than in the other groups. There were no differences in time to chest compressions, time to intubation or time to drug administration.*

Holzhauser 2006

Holzhauser K, Finucane J, de Vries S. Family presence during resuscitation: a randomised controlled trial of the impact of family presence. Aus Emerg Nur J 2006; 8 (4): 139-47

This study was undertaken to determine the effects on relatives of family presence in an emergency resuscitation room during resuscitation. Methods: This study was undertaken using a randomised controlled trial using survey methodology. The setting was the ED of a major tertiary referral teaching hospital in Queensland. Participants were relatives over 18 years of age, related to patients meeting the inclusion criteria. Relatives were randomly assigned to either control group (established protocol - relatives' waiting room) or experimental group (given the option to be present during resuscitation with a support officer). Results: 100% of the intervention group were 'glad' they were present. An association was found between those who were present (and their relative survived) and their belief that their presence was beneficial to the patient. Conclusions: Relatives find it beneficial to be in the resuscitation room. Their presence helped with communication between staff and family, and helped relatives to cope.

Randomised, controlled trial (non-blinded) LOE II. Good quality. Examined the effect on relatives of presence during resuscitation compared with relatives not present (waiting room 'usual care'). Found that 100% of the intervention group were glad they were present, 96% felt if aided in the

grieving process. 71.2% of the control group participants felt that if they had been present during the resuscitation, it would have helped them grieve.

Kingsnorth 2009

Kingsnorth J, O'Connell K, Guzzetta CE, Edens JC, et al. Family presence during trauma activations and medical resuscitations in a pediatric emergency department: an evidence-based practice project. J Emerg Nur 2009; 36 (2): 115-21

INTRODUCTION: The existing family presence literature indicates that implementation of a family presence policy can result in positive outcomes. The purpose of our evidence-based practice project was to evaluate a family presence intervention using the 6 A's of the evidence cycle (ask, acquire, appraise, apply, analyze, and adopt/adapt). For step 1 (ask), we propose the following question: Is it feasible to implement a family presence intervention during trauma team activations and medical resuscitations in a pediatric emergency department using national guidelines to ensure appropriate family member behavior and uninterrupted patient care? METHODS: Regarding steps 2 through 4 (acquire, appraise, and apply), our demonstration project was conducted in a pediatric emergency department during the implementation of a new family presence policy. Our family presence intervention incorporated current appraisal of literature and national guidelines including family screening, family preparation, and use of family presence facilitators. We evaluated whether it was feasible to implement the steps of our intervention and whether the intervention was safe in ensuring uninterrupted patient care. RESULTS: With regard to step 5 (analyze), family presence was evaluated in 106 events, in which 96 families were deemed appropriate and chose to be present. Nearly all families (96%) were screened before entering the room, and all were deemed appropriate candidates. Facilitators guided the family during all events. One family presence event was terminated. In all cases patient care was not interrupted. DISCUSSION: Regarding step 6 (adopt/adapt), our findings document the feasibility of implementing a family presence intervention in a pediatric emergency department while ensuring uninterrupted patient care. We have adopted family presence as a standard practice. This project can serve as the prototype for others.

Case series LOE IV n=96. Fair. No interruptions to patient care in this case series – relatives were 'screened' for drugs / alcohol / behavioural disturbance before admittance to resuscitation room.

Mangurten 2006

Mangurten J, Scott SH, Guzzetta CE, Clark AP, et al. Effects of family presence during resuscitation and invasive procedures in a pediatric emergency department. J Emerg Nur 2006; 32 (3): 225-33

INTRODUCTION: No research exists evaluating family presence (FP) during resuscitation interventions (RIs) and invasive procedures (IPs) using ENA guidelines in a pediatric emergency department. The purpose of this study was to determine the effectiveness of an FP protocol in facilitating uninterrupted care and describe parents' and providers' experiences. METHODS: A family facilitator offered FP to parents of children undergoing RIs or IPs. Data were collected during 64 FP events (28 RIs and 36 IPs). Following the event, 92 providers and 22 parents completed a survey about their experiences. RESULTS: In 100% of FP cases, patient care was uninterrupted. Parents were positive about FP, believed it helped their child, and reported that it eased their fears. All parents described an active role during the event, and most believed they had a right to be present. Three months later, no parents reported traumatic memories. Providers also were positive about FP and reported that the presence of parents did not negatively affect care. Although most (70%) supported FP during RIs, more nurses (92%) and physicians (78%) supported it than did residents (35%, $P < .05$). DISCUSSION: The findings suggest the effectiveness of a pediatric emergency department FP protocol in facilitating uninterrupted patient care. The benefits identified for parents support implementation of FP programs.

LOE IV prospective descriptive case series (survey). Good.

Level 1 paediatric trauma centre ED (USA), n = 64 resuscitations or emergency invasive procedure events in which a family member was present. Clinical data collected during procedure showed that patient care was uninterrupted in 100% cases. Family surveys indicated that 100% of parents felt that being with their child was helpful for the child, 95% felt it helped them understand their child's

condition.

Maxton 2008

Maxton FJC. Parental presence during resuscitation in the PICU: the parents' experience. Sharing and surviving the resuscitation: a phenomenological study. J Clin Nur 2008; 17 (23): 3168-76

AIM: To provide in-depth understanding of the meaning for parents who were present or absent during a resuscitation attempt on their child in the PICU. BACKGROUND: Family presence during resuscitation remains a topic of debate with both benefits and disadvantages identified, yet few studies have asked parents of children in PICU to describe their experiences of being present or absent during this resuscitation and what this means to their understanding and coping. Additionally, minimal research has investigated parental presence during a successful resuscitation. DESIGN: A qualitative design was used based upon van Manen's interpretative phenomenological approach. METHODS: Fourteen parents of critically ill children from one paediatric intensive care unit in Australia, who had either survived or died following a resuscitation attempt were interviewed. RESULTS: Four main themes were identified: (1) being only for a child; (2) making sense of a living nightmare; (3) maintaining hope in the face of reality; (4) living in a relationship with staff. CONCLUSIONS: The findings underpin the inherent need for parents to choose to be present during resuscitation to make sense of the situation. Memories of the resuscitation were not long-lasting and distress was for the potential death of a child, rather than the resuscitation scene. Parents who did not witness their child's resuscitation were more distressed than those who did. Having the opportunity to make the decision to stay or leave was important for parents. Support during the resuscitation was best provided by experienced clinical nurses. RELEVANCE TO PRACTICE: Recognition of the parents' compelling need to stay will improve nurses' understanding of how witnessing this event may assist family coping and functioning. Ways in which parents may be better supported in making the decision to stay or leave during resuscitation are identified.
LOE III-2 comparative study (qualitative study). Fair. Data saturation was not addressed. No parents who did not witness the resuscitation process for a child who died were included.
Parents who did not witness their child's resuscitation were more distressed than those who did. Having the opportunity to make the decision to stay or leave was important for parents.

Meyers 2000

Meyers T, Eichhorn DJ, Guzzetta C, Clark A, Klein J, Taliaferro E, Calvin A. Family Presence During Invasive Procedures and Resuscitation: The Experience of Family Members, Nurses, and Physicians. Am J Nur 2000; 100 (2): 32-43

Little research has been reported on the effects of families at the bedside while their loved ones undergo cardiopulmonary resuscitation (CPR) or invasive procedures (IPs). Basing our protocol for family presence (FP) on guidelines developed by the Emergency Nurses Association and using quantitative and qualitative methods, we conducted a descriptive study in the emergency department of our regional level-I trauma center. We surveyed 39 family members and 96 health care providers (60 registered nurses, 22 physician residents, and 14 attending physicians), following 43 instances of FP (which included 24 emergency IPs and 19 incidences of CPR), regarding the attitudes and experiences of those interviewed, including perceived benefits of and problems arising from FP. We found that families perceived visitation as a positive experience and that they believed being with the patient was their right. Family members involved in FP viewed themselves as active participants in the care process, which met their needs for knowing about, providing comfort to, and connecting with the patient. All the participating family members surveyed believed that visitation was helpful to them and noted that they would do it again. We found that family members who visited with their loved ones during emergency care suffered no ill psychological effects. The views of the health care providers differed significantly: more nurses (96%) and attending physicians (79%) supported FP during resuscitation, than did residents (19%) ($p = 0.001$ for both comparisons). And though 88% of our health care providers thought FP should be continued at our institution, the approval rate for FP was significantly higher among nurses than among residents (98% and 50%, respectively; $p < 0.001$). Thirty-eight percent of providers expressed concern about possible disruptions by family members during the visits, though no such incidents

occurred during the study. We concluded that the benefits of FP justify implementing family presence programs. In November 1999, our institution, Parkland Health & Hospital System, approved a hospital-wide protocol for family presence during IPs and CPR.
Case series LOE IV. Good quality. 43 instances of family presence at either CPR or an emergency invasive procedure in the ED of a level 1 trauma centre (USA). Family members were interviewed after the incident. The mortality rate of patients was 56%. 100% of family members reported that they would 'do it again', and 100% found the experience important and helpful in the grieving process. 98% of family reported that they had the right (and the obligation) to accompany their family member. No incidents of disruptions to the medical care of patients occurred in the study.

O'Connell 2007
O'Connell KJ, Farah MM, Spandorfer P and Zorc JJ. Family presence during pediatric trauma team activation: an assessment of a structured program. Pediatrics 2007; 120 (3): e565-74
OBJECTIVE: When a child presents to a trauma center with a serious injury, family members are often excluded from the initial trauma team evaluation. The objective of this study was to evaluate the outcomes of a structured program of family presence during pediatric trauma team activations by measuring (1) the need for termination of family presence, (2) times to completion of key parts of the trauma evaluation, and (3) the opinions of staff surveyed immediately after conclusion of family presence. METHODS: This was a cross-sectional study that combined prospectively obtained data and surveys from trauma team evaluations in which family presence occurred, with retrospective chart review of all trauma activations during an 18-month study period. The study was conducted at a level 1 pediatric trauma center with a pre-established family presence program that assigns a staff member to screen family members for family presence, provide support, and record events. Times to completion of key components of the trauma evaluation were calculated and compared for cases with and without family presence. Cross-sectional surveys were performed immediately after each trauma team evaluation. RESULTS: A total of 197 family members participated in family presence. There were no cases of interference with medical care by family members. Seven family members were asked to leave the trauma area by staff after initiation of family presence for various reasons. Times to completion of key components of the trauma evaluation did not differ significantly between enrolled patients with family presence and those without family presence. Surveys were completed for 136 cases, and the majority of providers reported that family presence either had no effect on or improved medical decision-making (97%), institution of patient care (94%), communication among providers (92%), and communication with family members (98%). CONCLUSIONS: This prospective study suggests that there is an overall low prevalence of negative outcomes associated with family presence during pediatric trauma team evaluation after implementation of a structured family presence program. Excluding family members as a routine because of provider concerns about negative impact on clinical care does not seem to be indicated.
LOE III-2 cohort study. Good quality.
Cohort study comparing family presence (FP) (n=176) with no family presence (n=98) during trauma team activations in the ED of a Level 1 paediatric trauma centre (USA). Powered to detect differences in times to clinical interventions – no difference found in time to any clinical intervention measured: completion of primary survey, first ED radiograph, IV access, central line access, intubation. No (0/176) reported cases of interference by family members with medical care. Study reports that 1/176 child died in the FP cohort, 2/98 children died in the 'no FP' cohort, although the study was not powered to detect differences in mortality.

Oman 2010
Oman KS and Duran CR. Health care providers' evaluations of family presence during resuscitation. J Emerg Nursing 2010; 36 (6): 524-33
The benefits of family presence (FP) during resuscitation are well documented in the literature, and it is becoming an accepted practice in many hospitals. There is sufficient evidence about health care provider (HCP) and family attitudes and beliefs about FP and little about the actual outcomes after

family witnessed resuscitation. The purpose of this study was to evaluate FP at resuscitations. METHODS: A descriptive design was used to collect data at an academic medical center in the western U.S. There were 106 resuscitations during the study period. Family presence was documented on 31 (29%) records. One hundred and seventy-four health care provider names were listed on the resuscitation records, and 40 names (23%) were illegible or incomplete. The convenience sample of 134 HCPs was invited to complete an electronic survey and 65 (49%) responded. RESULTS: Respondents indicated that family members were able to emotionally tolerate the situation (59%), did not interfere with the care being provided to the patient (88%). In addition, team communication was not negatively affected (88%). A family facilitator was present 70% of the time, and it was usually a registered nurse (41%). Twenty-one narrative comments were summarized to reflect the following themes: 1) family presence is beneficial; 2) family presence is emotional; 3) a family facilitator is necessary. DISCUSSION: These study findings demonstrate that having families present during resuscitations does not negatively impact patient care, is perceived to benefit family members and that a dedicated family facilitator is an integral part of the process.
LOE IV case series. Fair quality.
This study was a survey of health care professionals who were a part of the resuscitation team responding to "Code Blue cardiac arrest' alerts in a US hospital. The response rate for the survey was 49%, most respondents were nursing staff and many respondents referred to the same incident(s) in their answers, leading to the possibility of non-response bias. 59% of the survey respondents felt that the family member(s) were able to tolerate the situation and 88% reported that family members neither interfered with the resuscitation team performance nor impeded communication within the resuscitation team.

Robinson 1998
Robinson SM, Mackenzie-Ross S, Hewson GLC, Egleston C, Prevost AT. Psychological effect of witnessed resuscitation on bereaved relatives. The Lancet 1998; 352 (9128): 614-7
Established practice is for the relatives of critically ill patients to be excluded from the clinical area during resuscitation. We aimed to discover whether relatives wanted to be present during the resuscitation of a family member and whether witnessing resuscitation had any adverse psychological effects on bereaved relatives. Methods: In this pilot study, relatives of patients who required resuscitation were given the option to remain with the patient during resuscitation or were not given this choice and directed to the relatives' room (control group). The unit of randomisation was the patient who required resuscitation and not the relatives. One close relative was paired with each patient. All relatives were accompanied by a chaperone who gave emotional support and provided technical information on the resuscitation. Relatives were followed up 1 month after the resuscitation. We used a questionnaire to ask about the decision to be present or absent during resuscitation. Bereaved relatives also completed five standardised psychological questionnaires to assess anxiety, depression, grief, intrusive imagery, and avoidance behaviour. Findings: 25 patients underwent resuscitation (13 in witnessed resuscitation group, 12 in control group). Three patients in the witnessed group survived, all the control-group patients died. Two relatives in each group were lost to follow-up. Thus, eight relatives who witnessed resuscitation and ten control-group relatives were followed up. Interpretation: In the context of the emergency department, routine exclusion of relatives from the resuscitation room may no longer be appropriate.
Small, pilot randomised controlled trial (n=18). LOE II. Fair quality. This trial used validated questionnaires to compare the psychological effects of witnessing the unsuccessful cardiac / trauma resuscitation of a family member with a group that did not witness the unsuccessful resuscitation of a relative. On arrival in the ED, a close family member was randomly assigned to accompanying (intervention n=8) or not accompanying (control n=10) the patient during the attempted resuscitation. There were no reported adverse psychological effects among the relatives who witnessed resuscitation, all of whom were satisfied with their decision to remain with the patient. The clinical team became convinced of the benefits to relatives of allowing them to witness resuscitation if they wished, so the trial was terminated.

Reviews not included as evidence.

Boudreaux ED, Francis JL and Loyacano T. Family presence during invasive procedures and resuscitations in the emergency department: A critical review and suggestions for future research. Ann Emerg Med 2002; 40 (2): 193-205

Study objective: We examine the literature relating to family presence in the emergency department, with a specific emphasis on parental experiences and presence during invasive procedures and family presence during cardiopulmonary resuscitation and resuscitation. Methods: An electronic search and examination of resulting references was conducted using the words, "family centered care," "parent participation," "parent presence," "family presence," and "emergency department," "accident and emergency department," "procedure," "invasive procedure," and "resuscitation." Articles related to out-of-hospital emergency medical services were excluded. Also, articles were included only if the manuscript was based on an empirical study and if the manuscript was published in a peer-reviewed journal. Results: Twenty articles, primarily composed of survey research, were included in this review. Research suggests that families want to be given the option and, when given the option, often choose to remain during invasive procedures and resuscitations. Those who remain generally report favorable experiences and feel it is beneficial to the patient and themselves. Providers, however, have mixed opinions regarding family presence. Nurses may have a more favorable view toward family presence during invasive procedures than physicians. Among physicians, it appears that greater age and experience may be associated with more favorable opinions of family presence. Randomized controlled trials are mixed regarding whether family presence actually helps the patient. Conclusion: Despite what appear to be promising data regarding the benefits of family presence, this area of research is in the initial phases of development with many limitations that are discussed. Recommendations for future research are presented.

Review

Boucher M. Family-witnessed resuscitation. Emerg Nur 2010; 18 (5): 10-4

Family-witnessed resuscitation is a controversial subject for healthcare professionals and support for the practice is not universal (Albarran and Stafford 1999, Kissoon 2006). Research suggests, however, that the advantages of this form of resuscitation for relatives far outweigh the disadvantages, and that hospital staff can support the practice without hindering the clinical care of patients. This article explores the ethical issues raised, as well as the views of patients, families and staff on the subject, and suggests that there should be guidelines on the practice in all emergency departments where it is likely to take place.

Review

Halm MA. Family Presence During Resuscitation: A Critical Review of the Literature. Am J Crit Care 2005; 14 (6): 494-511

Presence of patients' families during resuscitation has emerged as an important practice issue, sparking considerable controversy worldwide. Early advocates of allowing patients' families to be present during resuscitation faced more resistance than did current advocates because the former had little or no scientific research results to support their ideas. In the past 15 years, a number of quantitative studies, especially descriptive surveys, have been conducted. Qualitative researchers have also explored the lived experience of family members present during resuscitation and less commonly the perspectives of patients and healthcare providers. In this review of the literature, the current state of the science is critically reviewed and the ethical-theoretical perspectives of respective researchers and staff participants in the reviewed studies are discussed. Surveys were used to collect data in most studies to date. Limitations of these designs include small convenience samples, low response rates, use of retrospective surveys and the associated potential selection bias, and lack of consistency in survey instruments, factors that make comparison of findings between studies difficult. Recommendations to address the gaps in the current state of knowledge about family members' presence during resuscitation are discussed. Experimental and qualitative methods are especially needed to investigate the effect of family presence during resuscitation on

patients, families, nurses and physicians, and other multidisciplinary staff members.
Review

Hodge AN, Marshall AP. Family presence during resuscitation and invasive procedures. Collegian 2009; 16 (3): 101-18
The practice of allowing family to be present during patient resuscitation or invasive procedures (Family Presence) is gaining acceptance in North America and the United Kingdom in controlled circumstances. Research into Family Presence has demonstrated multiple benefits for the patient, family and health care team. These advantages include helping the family to understand the severity of the illness/trauma and to see that appropriate attempts were undertaken to save their loved one. Family Presence can also facilitate improved communication between the health care team and family. In spite of evidence supporting Family Presence as a useful practice for patient, family and health care team, the use of Family Presence is uncommon within Australian emergency departments and hospitals. Clear expectations at organisational, governmental and professional levels are essential to effectively implement this approach. To be supported in the clinical area, the success of a Family Presence program requires an inclusive approach to program development. A critical component of a successful Family Presence program is a family facilitator who is adequately prepared for the role and committed to supporting the family during resuscitation or invasive procedures. Research exploring Family Presence in Australia is lacking and highlights the need for context specific research in this area.
Review

Meeks R. Parental presence in pediatric trauma resuscitation: one hospital's experience. Ped Nur 2009; 35 (6): 376-80
Although parental presence during medical resuscitation of children has been a common practice for years, the same opportunity has rarely been available for families in pediatric trauma resuscitation. Blank Children's Hospital is an exception; for three years, the hospital has had a successful program for family presence in pediatric trauma resuscitation. Beginning with the efforts of one nurse, a task force was established that developed guidelines for this practice in conjunction with nursing and allied health staff, as well as trauma surgeons. Chaplains were approached and then trained to serve as family support persons during trauma resuscitation. Families have been receptive to and pleased with the opportunity to be present during trauma resuscitation of their children.
Review

Moore H. Witnessed resuscitation: staff issues and benefits to parents. Paed Nur 2009; 21 (6): 22-5
Should relatives be made welcome in a resuscitation room to witness emergency medical treatment of a family member? This is a major issue in emergency departments worldwide. Attitudes of staff and relatives are mixed, and the benefits suggest further long-term research is needed to review the psychological effects on loved ones. This article will considers the background of witnessed resuscitation, as well as the views of both staff and relatives involved. The research will be evaluated and implications for practice explored. [References: 41]
Review

Parkman-Henderson D, Knapp JF. Report of the National Consensus Conference on Family Presence During Pediatric Cardiopulmonary Resuscitation and Procedures. J Emerg Nur 2006; 32 (1): 23-9
Representatives from 18 national organizations were convened for a conference to develop recommendations regarding family presence (FP) during pediatric procedures and cardiopulmonary resuscitation. Before the conference, invitees were given a questionnaire and provided with current literature regarding FP. A modified Delphi process was used to develop consensus, including use of multiple questionnaires and breakouts for discussion of specific issues. Participants were encouraged to develop consensus recommendations based on the literature and discussions.

Changes in attitude were tracked with repeat questionnaires. Results of the conference were circulated to participants for review and revision. Consensus recommendations: include (1) consider FP as an option for families during pediatric procedures and cardiopulmonary resuscitation, (2) offer FP as an option after assessing factors that could adversely affect the interaction, (3) if family is not offered the option for FP, document the reasons why, (4) always consider the safety of the health care team, (5) develop in-hospital transport and transfer policies and procedures for FP, such as family member definition, preparation of the family, handling disagreements, and providing support for the staff, (6) obtain legal review of policies, (7) include education in FP in all core curricula and orientation for health care providers, (8) promote research into best methods for education; effects of FP on patients, family, and staff; best practices for FP; and legal issues regarding FP, among others. These recommendations were approved in concept by the American Academy of Pediatrics and the Ambulatory Pediatrics Association.

Review