

# A Prospective Study of Emergency Medicine Residents' Attitudes toward Family Presence during Pediatric Procedures.

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## Abstract

**Objective:** Determine attitudes/practices of emergency medicine (EM) residents regarding family presence (FP) during pediatric procedural/resuscitation scenarios.

**Methods:** A prospective cross-sectional/anonymous survey of EM residents in ACGME-accredited residency programs.

**Results:** Responses received from 63 (47%) programs. 521 surveys completed: 193 EM-1, 170 EM-2, 127 EM-3, and 16 EM-4; 129 residents completed an internship year other than EM; 169 evaluated pediatric patients in the setting of children's hospital ED. EM residents believed that FP would interfere with their ability to perform interventions: 25% procedural sedation, 45% spinal, 48% endotracheal intubation, 50% resuscitation. The residents would allow FP during certain procedures: 31% procedural sedation, 19% spinal tap, 10% endotracheal intubation, 11% resuscitation. With increasing EM seniority there was a slight decreasing trend to believe FP as an interfering factor and an increasing trend towards allowing FP during procedures. This decreasing trend regarding FP as less of an interfering factor was statistically significant for spinal tap (p-value 0.0088) and resuscitation (p-value 0.0154). The increasing trend towards allowing FP was statistically significant for laceration repair (p-value 0.0264) urethral catheterization (p-value 0.0071), and resuscitation (p-value 0.0144). Residents treating patients at a children's hospital ED were more likely to permit FP during resuscitation than those in a general ED (17% vs. 9%, CI 8%, 1.7-14.4)

**Conclusions:** Residents were less accepting of FP during resuscitation than for less invasive procedures. With increasing seniority there was a statistically significant decreasing trend of reporting FP as an interfering factor and an increasing trend towards allowing FP during resuscitation.

## INTRODUCTION

Emergency Medicine (EM) residents are often faced with the presence of family members at the bedside during evaluation and performance of critical procedures in pediatric patients. The current literature supports that most family members would prefer to be present for invasive procedures [1-4] and resuscitation of their family member. [5-7] In addition, family presence does not appear to be harmful to family members and may in fact have a beneficial effect on parents' anxiety level [8] and bereavement process [9, 10]. The goal of this study is to determine the perspective of Emergency Medicine residents regarding family presence during

hypothetical clinical scenarios including different procedures and interventions in pediatric patients.

## METHODS

### SETTING

Emergency Medicine Residency programs accredited by the Accreditation Council for Graduate Medical Education (ACGME).

### SAMPLE POPULATION

EM residents in ACGME accredited residency programs.

**DESIGN**

This was a prospective cross-sectional anonymous survey of residents in ACGME accredited Emergency Medicine Residency programs regarding attitudes and practices towards family presence during invasive procedures and interventions in pediatric patients. The survey was mailed to all ACGME accredited programs. There were no exclusions. The study was approved by the institutional review board of the participating institution.

**STUDY PROTOCOL**

The survey was sent in September 2004 to the program directors of all ACGME accredited Emergency Medicine Residency programs for distribution to their residents. At the top of the survey was a statement summarizing the purpose of the survey which was our intention to assess EM residents' attitudes and practices regarding family presence during procedures. To maintain anonymity, we asked subjects not to put their name or the name of their residency program on the survey, and there were no codes or identifiers on the surveys. We collected information regarding year of training, prior internship or residency, EM program format, geographic location of the EM program, total number of ED visits per year and pediatric visits per year, and if pediatric patients were seen primarily at a children's hospital. For each procedure, residents were asked if family presence interfered with their ability to perform the procedure, if they allowed family members to be present for the procedure in their daily practice, and if they thought being present for the procedure was helpful to the parents. The survey described case scenarios involving the following procedures: venipuncture, urethral catheterization, lumbar puncture, laceration repair, procedural sedation, endotracheal intubation, major resuscitation. A self-addressed, stamped return envelope was provided for each residency program to return all the surveys from that program. There were no identifiers or codes on the envelopes.

**DATA ANALYSIS**

For each scenario, the participants were asked to indicate their level of agreement using a Likert scale with two statements regarding family presence (interferes with performance and helpful to parents). They were also asked to indicate if they allow family members to be present for the procedure described in the scenario (sometimes, always, or never). The number and percent of each level of response was tabulated. The percent of participants who indicated agreement (agrees or strongly agrees) or the percent of

participants who always allow family presence was used for comparison purposes. Asymptotic methods were used to calculate 95% confidence intervals. The chi-square test was used for the trend by program year. Responses were entered into a secured computerized database for analysis. All information was kept in locked files in the Department of emergency medicine.

**RESULTS**

We received responses from 63 (47%) programs with the following geographic distribution: 38% Northeast, 37% Midwest, 18% South and 5% West Coast. A total of 521 surveys were completed by EM residents: 193 EM-1, 170 EM-2, 133 EM-3, 16 EM-4, 8 (year blank).

Overall up to 50 % of EM residents reported that FP would interfere with their ability to perform selected procedures and resuscitation. The responses of the residents are summarized in Table 1.

**Figure 1**

Table 1

| Scenario                                   | #(%) Believe FP would interfere | #(%) Routinely permit FP |
|--|---------------------------------|--------------------------|
| 2 year old laceration repair               | 60 (12)                         | 295 (57)                 |
| 4 week old venipuncture                    | 100 (19)                        | 261(50)                  |
| 6 year old procedural sedation             | 127 (24)                        | 160 (31)                 |
| 4 week old urethral catheterization        | 131 (25)                        | 180 (35)                 |
| 4 week old spinal tap                      | 235 (45)                        | 99 (19)                  |
| 5 year old respiratory distress-intubation | 250 (48)                        | 50 (10)                  |
| 7 year old major resuscitation             | 261 (50)                        | 58 (11)                  |

In comparing EM-1, EM-2, and EM-3 residents, the belief that FP would interfere with procedures decreased while acceptance of FP increased with increasing seniority. The EM-4 cohort was excluded because of the small n. (Table 2, Figure 1and 2) Residents treating patients at a children's hospital ED were more likely to permit FP during resuscitation than those practicing in general ED, 17% vs. 9% (CI 8%, 1.7-14.4).

**Figure 2**

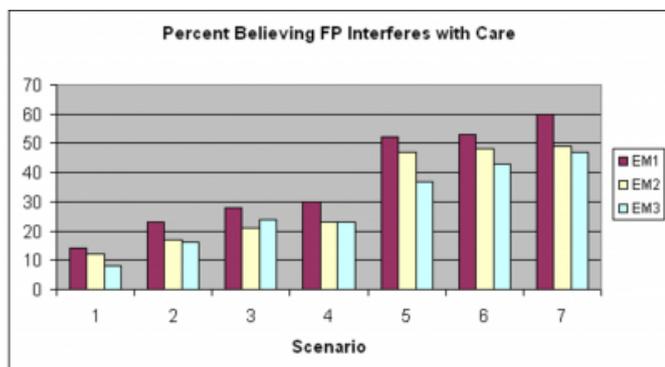
Table 2

| Scenario                                   | #(%) Believe FP would interfere |              |              |               | #(%) Routinely allow FP |              |              |               |
|--|---------------------------------|--------------|--------------|---------------|-------------------------|--------------|--------------|---------------|
|  | EM1<br>N=193                    | EM2<br>N=170 | EM3<br>N=133 | *P-<br>values | EM1<br>N=193            | EM2<br>N=170 | EM3<br>N=133 | *P-<br>values |
| 2 year old laceration repair               | 26(13)                          | 19(11)       | 10(8)        | 0.0946        | 104(54)                 | 90(53)       | 89(67)       | <b>0.0264</b> |
| 4 week old venipuncture                    | 42(22)                          | 28(16)       | 21(16)       | 0.1314        | 93(48)                  | 82(48)       | 79(59)       | 0.0775        |
| 6 year old procedural sedation             | 53(27)                          | 35(21)       | 31(23)       | 0.3356        | 57(30)                  | 58(34)       | 39(29)       | 0.9812        |
| 4 week old urethral catheterization        | 54 (28)                         | 38(22)       | 29(22)       | 0.1621        | 55(28)                  | 65(38)       | 58(44)       | <b>0.0071</b> |
| 4 week old spinal tap                      | 97(50)                          | 77(45)       | 48(36)       | <b>0.0088</b> | 34 (18)                 | 29(17)       | 33(25)       | 0.1327        |
| 5 year old respiratory distress-intubation | 100(52)                         | 78(46)       | 55(41)       | 0.0696        | 18(9)                   | 16(9)        | 15(11)       | 0.5937        |
| 7 year old major resuscitation             | 109(56)                         | 78(46)       | 60(45)       | <b>0.0154</b> | 12(6)                   | 23(14)       | 20(15)       | <b>0.0144</b> |

\*Chi-square test for trend in a binomial proportion

**Figure 3**

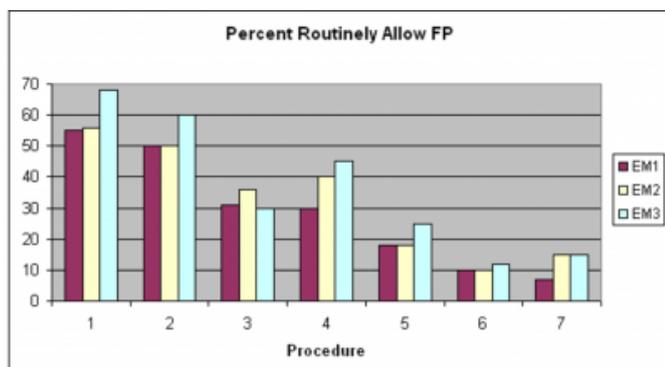
Figure 1



Scenario 1: 2 year old laceration repair  
 Scenario 2: 4 week old venipuncture  
 Scenario 3: 4 week old urethral catheterization  
 Scenario 4: 4 week old spinal tap  
 Scenario 5: 6 year old procedural sedation  
 Scenario 6: 5 year old intubation  
 Scenario 7: 7 year old major resuscitation

**Figure 4**

Figure 2



Scenario 1: 2 year old laceration repair  
 Scenario 2: 4 week old venipuncture  
 Scenario 3: 4 week old urethral catheterization  
 Scenario 4: 4 week old spinal tap  
 Scenario 5: 6 year old procedural sedation  
 Scenario 6: 5 year old intubation  
 Scenario 7: 7 year old major resuscitation

**LIMITATIONS**

Although the results of this study are suggestive, there are limitations to the conclusions. The scenarios were hypothetical, and under actual conditions, residents may feel and behave differently. However, if residents were expected to misrepresent their opinions it would be most likely in the direction of favoring FP. We did not address the issue of the resident respondents' prior experience with FP. The culture of a particular institution is often the greatest determinant of whether or not family presence is allowed and residents' opinions may represent more a reflection of their institution than themselves.

**DISCUSSION**

Mixed opinions and themes emerge regarding FP when various groups of healthcare providers are surveyed with nurses commonly demonstrating a more favorable view toward family presence than physicians. [11, 12, 13] Among physicians, it appears that greater age and experience may be associated with more favorable opinions of FP. [14] Residents are less likely to support family presence during more invasive procedures[15, 16] and even less likely to support family presence during resuscitation as compared to attending physicians and nurses [6, 17].

This study represents the largest number of residents of any specialty, reported regarding FP. It is clear that a high percentage of EM residents believe FP interferes with performance of pediatric procedures. In addition, only a small percentage of residents routinely allow FP during activities such as procedural sedation, lumbar punctures, endotracheal intubation or resuscitation. With EM seniority there was a trend favoring FP in the clinical setting.

Complexity of the procedures to be performed appears to be a significant factor in residents' acceptance of FP. This raises the question of residents' confidence about their ability to perform certain procedures. It may be related to their perceived proficiency in performing a certain procedure or to the learning of a new challenging procedure in a difficult situation, or with a difficult or emotionally distraught family. These findings suggest that emergency medicine programs should include didactic/simulation curricula that enhance procedural skills in critical situations as well as deal with concepts of interaction with families, communication with families during procedures and resuscitations, death/dying and self-care following critical events. Role-playing and/or videotaped hypothetical interactions may facilitate the

resident's confidence and ability to perform and communicate during critical situations. Also important is the ability to present unbiased information to a family regarding available options and to allow the family to choose their personal level of involvement. It also offers the opportunity for emergency departments to develop systems that promote family-centered care.

When comparing the practices of EM residents regarding FP during pediatric resuscitation in the setting of a children's hospital ED vs. a general ED it seems that a greater number of families would be allowed to be present during resuscitation at a children's hospital ED. A reasonable explanation for the slightly higher percentage of residents that would allow family presence during resuscitation in children's hospitals ED is that children's hospitals may have more family-centered care programs that may facilitate FP during resuscitation.

## CONCLUSIONS

A high percentage of EM residents report FP as an interfering factor with performance of certain procedures especially endotracheal intubation and resuscitation. As residents become more experienced there seems to be a trend towards greater acceptance of allowing FP. Complexity of the procedures performed appears to be a significant factor in decreasing residents' acceptance of FP. When comparing the practices of EM residents regarding FP during pediatric resuscitation in the setting of a children's hospital ED vs. a general ED it seems that a greater number of families would be allowed to be present during resuscitation at a children's hospital ED.

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