


Parental and Pediatricians' Perception of Need for Subspecialty Training in Pediatric Emergency Medicine for Delivering Emergency Care to Pediatric Patients

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Abstract

The quality of pediatric emergency care may depend on the competence of the emergency department physicians. It is important to know whether parents and general pediatricians associate the quality of pediatric emergency care with the pediatric emergency medicine (PEM) training of the emergency department physicians. We designed the study to determine parental and pediatricians' opinion and expectation in regard to this question. Most of the surveyed parents' and pediatricians' recognize the importance of PEM training and believed that physicians trained in PEM can provide better emergency care for children. However, 53.8% of parents, especially Spanish speaking and with Medicaid/no insurance coverage, believe that the emergency care provided for their children by general pediatricians and PEM physicians is equivalent. The results of our study could be utilized by accredited PEM planners in the creation of strategies to ensure the quality of emergency care for children population.

Keywords

pediatric emergency medicine training, parents, general pediatricians, survey

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Introduction

While the majority of children receive emergency medical care in general emergency departments (EDs),^{1–3} the preparedness of the ED for pediatric emergency is one of the serious public health concerns because of the risk for occurrence of medical errors in an ED that lacks special equipment and trained personnel.^{4–6} Therefore, various organizations such as Emergency Medical Services for Children, American College of Emergency Physicians, and American Academy of Pediatrics (AAP) require that EDs have special equipment for pediatric patients, and a pediatric emergency care physician coordinator trained either in emergency medicine (EM) or pediatric emergency medicine (PEM).^{7–9} Despite this, a 2009 national survey of pediatric services available in US EDs reported that 17% to 25% of ED directors appoint EM or PEM trained coordinators^{10,11} and just 10% of EDs have the necessary equipment for delivery

of pediatric emergency care.¹¹ This lack of specialized pediatric emergency care thereby characterized the children as a vulnerable population in terms of delivery of emergency care by nonprepared health care professionals.¹² Even though the majority of the emergency training courses for physicians do not focus on the pediatric population,¹² continuing medical education is the main source for physicians to obtain or maintain knowledge and skills in PEM.¹³ The majority of general EM physicians do not support the requirement for subspecialty

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Table 1. Questions Use in Survey of Parents and Pediatricians Regarding Pediatric Emergency Medicine Training.

Parental Questionnaire	Pediatricians Questionnaire
Do you think that the physician who provides medical care to your child in the emergency department should be specifically trained in pediatric emergency medicine?	Do you think that the physician who provides pediatric medical care should be trained in pediatric emergency medicine?
Do you believe the physician in the emergency department who trained in pediatric emergency medicine can provide better care for your child than physician who did not?	Do you feel that an emergency medicine physician can provide the same quality of pediatric emergency care as a pediatrician certified in emergency medicine?
Do you think a general pediatrician not trained in pediatric emergency medicine can provide satisfactory care to a child in emergency department?	Do you feel that a general pediatrician can provide the same quality of emergency care as a pediatrician certified in emergency medicine?

training in PEM for physicians in pediatric ED.¹⁴ However, PEM physicians see a need for PEM training for physicians who provide emergency care for the pediatric population.¹⁵ Although training in PEM for physicians to provide emergency care for the pediatric population is not required to date, a survey done in 1998 revealed that most of the surveyed American College of Emergency Physicians members who were interested in practicing PEM favored subspecialty board certification in PEM for EM physicians.¹⁶

This study is the first to determine parental and general pediatricians' opinion and expectations on questions related to the need for PEM training of ED physicians for the management of pediatric emergencies. We believe that planners in PEM need to know the opinion of parents and general pediatricians on this matter for the creation of strategies to ensure the quality of emergency care for children population.

Methods

This article describes a cross-sectional survey study that was designed to identify the parental and general pediatricians' opinion regarding the need for subspecialty training of physicians in PEM in order to manage pediatric populations in the ED. The study was approved by the institutional review board. Because of the anonymous nature of the survey instrument that was used for the parents and pediatricians, a signed consent was not required by the institutional review board for the participation of parents and pediatricians in this study.

Survey Instrument

We generated 2 sets of questionnaires to survey the general pediatricians in New Jersey and parents of children who presented in the pediatric ED at the Bristol Meyers Squibb Children's Hospital—Robert Wood Johnson University Hospital. The PEM physicians constructed the questionnaires that were pretested by the parents and

general pediatricians for content and wording to ensure acceptability to the respondents (physicians and parents). The questions had to be clear for parents and pediatricians to allow us to determine their opinions regarding the need for PEM training and its association with the quality of pediatric emergency care. In addition, questions were asked to identify the pediatricians' expectations regarding the level of training required for physicians providing medical care for children referred to the ED. The questions included close-ended questions with precoded response options ("Yes," "No," "I do not know," or "Do not matter"). In order to decrease the risk for response bias because of the design of the questionnaire, the main questions used to determine the parental and pediatricians' opinion of the association between the quality of pediatric emergency care and training of physicians were predominantly identical for both parents and pediatricians (Table 1). However, in the parental questionnaire, we avoid the use of special terminology such as "certification" for the definition of subspecialty training. In addition, we asked parents to identify their child's medical coverage, availability of a primary care pediatrician for routine medical care, and frequency of ED visit for their children. Pediatricians were asked to answer questions about the type and location of their practice, the frequency with which they referred patients to the ED, and their knowledge of the training of the physicians covering the EDs to which they referred their patients.

Parental Survey

A total of 3417 patients were seen in our pediatric ED during the study period (from December 2011 to January 2012). ED nurses, pediatric residents, or attending ED physicians distributed the survey to the parents at their convenience, at any time during the ED visit of the children. The unidentified process of survey distribution and collection of responses ensured confidentiality of parental responses. Therefore, no data were collected regarding the children's health status and time at which

Table 2. Parental Responses to the Survey Questionnaire.

Questions	Respondent
Relationship to child	N = 390
Mother	79.2% (75.2% to 83.2%)
Father	18.9% (14.9% to 22.9%)
Other	5.9% (3.3% to 8.2%)
Language	N = 412
English	26.2% (22.0% to 30.5%)
Spanish	73.8% (69.6% to 78.1%)
Child's medical coverage	N = 412
Medicaid	46.4% (41.6% to 51.2%)
Private insurance	47.4% (42.6% to 52.2%)
No insurance	6.2% (5.7% to 11.1%)
Availability of primary care physician	N = 408
Yes	85.2% (81.7% to 88.7%)
No	13.8% (10.4% to 17.2%)
Locations of routine checkup services (Check all that applied)	N = 421
Private pediatrician	65.5% (61.0% to 70.0%)
Family physician	14.8% (11.5% to 18.2%)
Local clinic	17.0% (13.4% to 20.6%)
Emergency department	2.2% (0.8% to 4.3%)
No one routine checkup of their child	2.9% (1.3% to 4.5%)
Overall frequency of emergency department visits for their child/children	N = 398
Never	6.2% (3.8% to 8.6%)
First time	19.9% (16.0% to 23.8%)
Two or more times	73.9% (69.6% to 78.2%)

respondents were approached to participate. The parents had the freedom to choose a questionnaire in English or Spanish, which is important for the prevention of misunderstanding of questions among respondents with limited proficiency in English.

Pediatrician Survey

A total of 1357 members of the New Jersey Chapter of AAP were approached to answer the questionnaires. Surveys were distributed by the New Jersey office of AAP 3 times between December 2011 and January 2012. The AAP Chapter of New Jersey used kwiks-surveys.com to survey the representative population of pediatricians practicing in New Jersey. The collected data were sent to the research team without any personal identifiers of the AAP members.

Data Presentation and Statistical Analysis

We used χ^2 test to compare responses in stratified data and multiple regression analysis to control parental responses for primary language spoken and insurance type (uninsured and Medicaid covered respondents were combined in one category of low-income population).

The results are presented as the distribution of frequency (%) and 95% confidence interval for each frequency, and regression coefficient (β) and standard error of β . We used Statistica 12 for Windows (StatSoft Inc, Tulsa, OK) to analyze the data. A *P* value of less than .05 was considered statistically significant.

Results

A total of 412 parental responses were collected. The majority of parents completed the questionnaire in the English language, reported having a private pediatrician for their child, and had experienced 2 or more ED visits with their child/children (Table 2). Among parents with private insurance coverage, 90.1% had completed the questionnaire in English as compared with 59.0% of Medicaid/uninsured parents ($P < .0001$). The majority of parents thought that the physicians who provide medical care for their children in the ED should be specifically trained in PEM and believed that physicians trained in PEM can provide better emergency care for children (Figure 1). On the other hand, approximately one half of parents felt that general pediatricians not trained in PEM can also provide satisfactory medical care for children in the ED (Figure 1). Regression analysis showed that the answer "Yes" to the

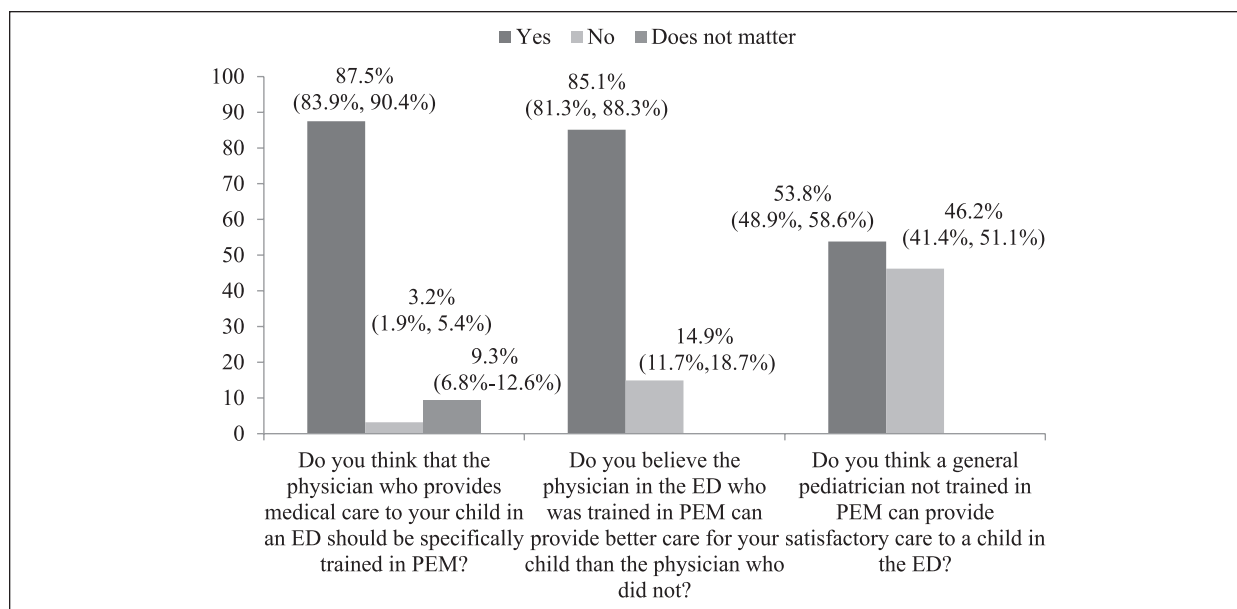


Figure 1. Parental response regarding pediatric emergency medicine (PEM) training for physicians who provide emergency care for children.

Table 3. Pediatricians' Responses to the Questions.

Questions	Respondent
Does that hospital to which you send your patients have a pediatric ED?	n = 185
Yes	86.0% (80.2% to 90.3%)
No	12.4% (8.4% to 18.0%)
I do not know	1.6% (0.3% to 4.9%)
If yes, does this hospital have pediatric emergency physician coverage?	n = 157
Yes	93.6% (88.5% to 96.7%)
No	5.1% (2.5% to 9.9%)
I do not know	1.3% (0.05% to 4.8%)
How frequently do you refer your patients to the ED?	n = 181
Every week	26.0% (20.1% to 32.8%)
Every 2 weeks	36.4% (29.8% to 43.7%)
Once a month	21.0% (15.2% to 29.1%)
Once in 2 or more months	16.6% (11.8% to 22.7%)

Abbreviation: ED, emergency department.

question "Do you think a general pediatrician not trained in pediatric emergency medicine can provide satisfactory care to a child in the emergency department?" was associated with the parental use of the questionnaire in Spanish and Medicaid/no coverage ($\beta = 0.141 \pm 0.052$, $P < .01$, and $\beta = 0.158 \pm 0.052$, $P < .005$), correspondingly.

A total of 188 members of the New Jersey Chapter of the AAP who answered the questionnaire were more likely to be general pediatricians (75%) and practicing in solo/group (69.3%) in the suburban areas of New Jersey (71.9%). Around 90% were under the impression that the hospitals to which they referred patients had

dedicated pediatric EDs with PEM physician coverage (Table 3). Approximately 85% and 25% expected that patients sent to pediatric EDs and general EDs would be cared for by PEM physicians, respectively (Figure 2). Most of the respondent physicians believe that physicians providing emergency care for pediatric patients should be trained in PEM and felt that PEM physicians will provide the best care for their patients in true emergency situations (Figure 3). Less than 20% of the pediatricians in our study thought that general pediatricians could provide the same quality of emergency care as pediatricians certified in EM (Figure 3).

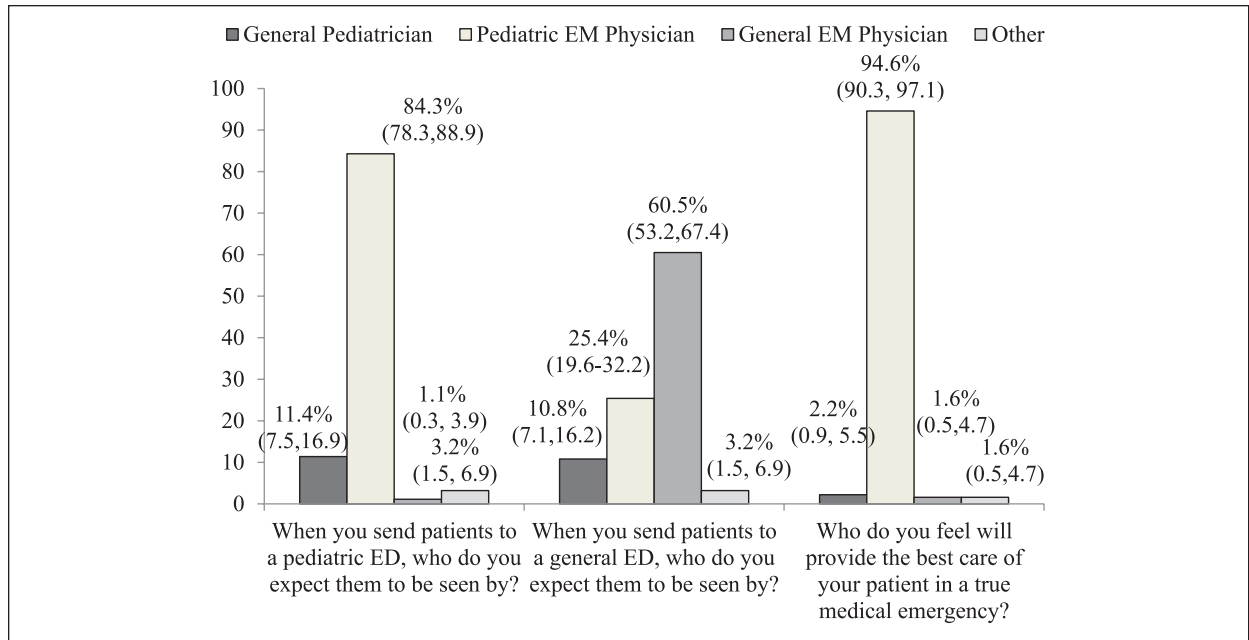


Figure 2. Pediatricians' expectation regarding specialty of physicians at the referred emergency departments (EDs; % and 95% confidence interval).

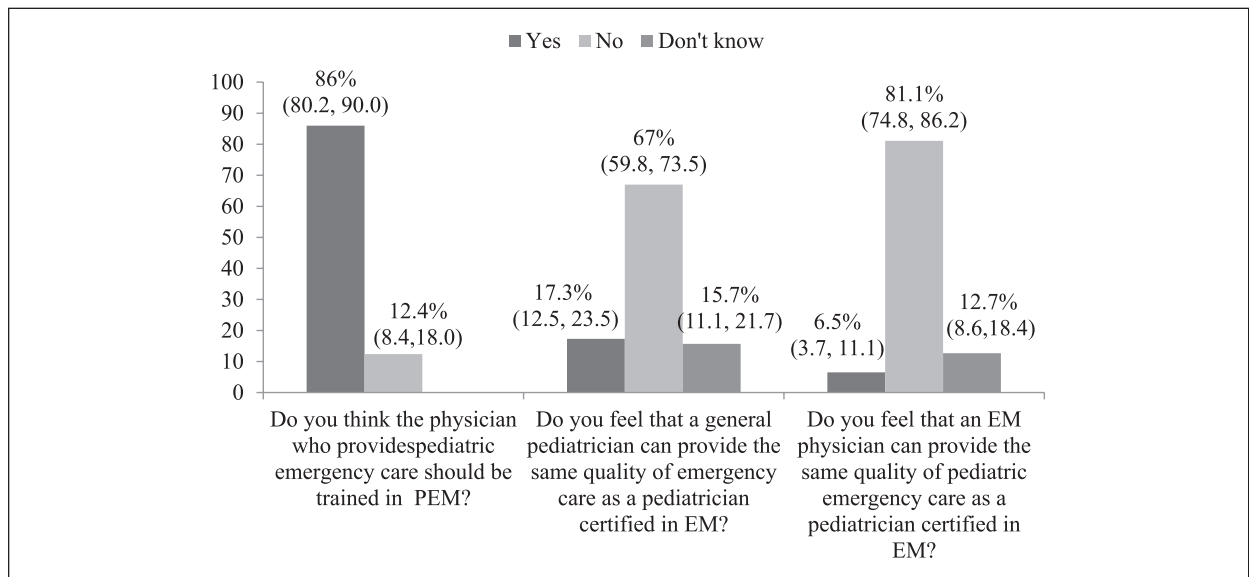


Figure 3. Pediatricians' response regarding need for pediatric emergency medicine (PEM) training for physicians who provide emergency care to children who were referred to the emergency department (ED).

Discussion

The present article is the first that attempts to identify the view of general pediatricians and parents of children on the subject associated with training of physicians who take care of the pediatric population at EDs. The study showed that pediatricians believe in PEM training for physicians for delivery of quality of emergency care to

their patients, and most of them expected that their patients would be seen by the PEM trained physicians at the pediatric ED. Despite the feedback from parents regarding the importance of PEM training for physicians who take care of their children in EDs, a large number of Spanish-speaking and Medicaid/uninsured parents believe that the quality of emergency care provided by PEM trained physicians and general pediatricians is

similar. Although parents recognize the importance of PEM training for physicians in the delivery of quality medical care to their children in the ED, half of them, especially those representing vulnerable populations, believed in the appropriateness of emergency care provided for their children by general pediatricians possibly because underserved populations disproportionately use EDs for nonurgent care.¹⁷ A high number of emergency visits constitute pediatric patients with ambulatory sensitive conditions that are treated and released from the ED without admission.¹⁸⁻²⁰ Approximately 10% may require emergency attention, including resuscitation.²⁰ Hospital-based general EDs lacking specialized pediatric services and physicians trained in PEM are the main medical facilities that provide care for children in emergency situations, and about 60% of ED physicians in children's hospitals are not board-certified in PEM.^{3,13,21} Even though the majority of the physicians in the general EDs reported they were prepared for urgent pediatric emergencies,²¹ they acknowledged the need for specialist consultation or hospitalization of children with complicated conditions,²² perhaps because of the complexity of medical problems.²³ Children are physically and developmentally different from adults,²⁴ and because of this, the PEM training could be important for ED physicians if they are to deliver proper emergency care to pediatric patients. The quality of pediatric emergency care that implies an association between the likelihood of desired health outcomes and professional knowledge^{25,26} is associated with the ED physicians' competence. We did not find any studies that had compared the effectiveness of care for children in the ED with respect to the training of the ED physicians. It may be because the measures of the EDs' performance in pediatric emergency care are not outcome-oriented.²⁷

Although surveys are a widely used strategy to study different aspects of health service delivery,²⁸ validity, sampling, response rate, and generalizability are the commonly occurring limitations that could be applied to our study also. We used every opportunity to reduce the risk for violation of the validity of the survey context by including questions consistent with the main goal of the study, pretesting and conveying clear questions to the target populations and providing instruction for responses. Almost all pediatricians and parents completed posed questions that support the clarity of the content of the developed questionnaires. We understand that the use of nonprobability samples increases the risk for selection bias and reduces the generalization of the obtained results. However, an analysis of 50 different surveys of pediatricians conducted by the AAP showed no response bias for pediatricians' geographical location, and also identified that even for pediatricians' surveys with a low

response rate, the response bias never exceeded 5% for gender, age, or membership type.²⁹ We used stratification and regression analyses of parental responses to control for parental language preference and insurance coverage, both of which were related to response. Because there was not much variability in the pediatricians' responses, regression analysis was not conducted. Although our survey study was not designed to assess a difference in quality of pediatric emergency care provided by physicians with dissimilar training, it could identify parental and pediatricians' consideration of PEM training for the physicians providing pediatric emergency care.

Conclusion

While general pediatricians believe in PEM training as an assurance of quality, which is related to their expectation that children referred to the pediatric ED will be seen by PEM physicians, nearly half of the parents, especially those who represent underserved population, believe that the emergency care provided by general pediatricians and PEM physicians is equivalent. The results of our study could be utilized by accredited PEM planners in the creation of strategies to ensure the quality of emergency care for the pediatric population.

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Author Contributions

EGL: Contributed to conception and design; contributed to data interpretation; drafted the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.

DBV: Collected the data and constructed the computerized database; contributed to data interpretation; critically revised the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.

NFM: Contributed to data interpretation; critically revised the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.

AP: Contributed to study design; contributed to data analysis and interpretation; created the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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