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# Development of a Training Program and Manual for Resident Rotations in Pediatric Emergency Medicine

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## Abstract

The practice of pediatric emergency medicine (PEM) requires wide-ranging knowledge and skills and specific adjustments to the individual pediatric emergency department (PED) setting. However, residency programs in Israel, where PEM is an emerging subspecialty, are not designed to cover all mandatory areas of training within the standard 3-month PEM rotation. This work describes our development of a training program and manual for pediatric residents during PEM rotations at Assaf Harofe Medical Center, a major tertiary facility in Israel. The syllabus, formulated by a senior PED physician in collaboration with the PED director, emphasizes topics that are not covered during rotations in different pediatric departments or that require a unique emergency-medicine-oriented approach. The manual covers general data and principles of case management, history taking, physical examination, general PED management, and indications for admission or discharge, tailored to reflect the setup at our Medical Center. The syllabus is currently in effect at our center, and the manual will be concluded this year and will be updated thereafter every 3 years. We hope this initiative will prompt other centers to introduce similar programs.

**MeSH Words:** Manual, pediatric emergency department, pediatric emergency medicine, resident, syllabus, training program

## Introduction

Pediatric emergency medicine (PEM) is an emerging subspecialty in Israel.

The practice of PEM requires specific knowledge and skills, which can be gained only in the pediatric emergency department (PED). To ensure high-quality care, training must be comprehensive, and conducted under the close supervision of experienced physicians. In Israel, however, PEM constitutes only a minor part of the pediatric residency program, so it is difficult to address many aspects and concepts of PEM during that period. Information provided in textbooks [1-3] is more relevant for PEM fellows

and less for residents, since a 3 months' period is too short to cover the large amount of information in those books. In addition it is crucial to provide the special knowledge pertinent to each individual PED, such as communication routes for on-call consultants or the location of essential facilities. At Assaf Harofe Medical Center, the PEM rotation lasts 3 months, and it takes place after 2 years of residency or after completion of step 1 of the Board of Pediatrics certification. Although pediatric residents are exposed to emergency routines and procedures during their rotations in the pediatric intensive care unit and the

department of pediatrics, they are qualified to work independently in the PED only towards the

end of their PEM rotation. In most hospitals in Israel, including Assaf Harofe, pediatric residents are the most senior medical personnel in the PED and, indeed, often manage the PED after regular hours. Therefore, it is essential to fill the educational/practice gaps during the PEM rotation.

The aim of the present paper was to describe our development of a comprehensive training program for pediatric residents during PEM rotations and an accompanying manual tailored to the specific PED setup at our center.

### **Development of the training program**

The new syllabus for PEM rotation was developed by a senior PED physician in collaboration with the director of the PED, and it was based on their long experience with the departmental routines and procedures. The requirements were derived from fellowship programs and adjusted to the much shorter residency training period. Emphasis was placed on areas that are not covered during rotations in different pediatric departments or that require a unique emergency-medicine-oriented approach as opposed to in-depth disease evaluation characteristic of other medical disciplines.

The first part of the syllabus deals with the prerequisites for rotation as stipulated by the Israel Ministry of Health, in addition to the specific requirements of the Assaf Harofe Medical Center PED. For example, residents must attend a course in sedation and in Pediatric Advanced Life Support (PALS); they must know the PALS algorithms by the end of the first 2 days of rotation. By the end of the first month of rotation, residents must be familiar with the set-up of the PED and the use of its equipment, such as the ophthalmoscope and ear-cleaning loop, and particularly, the resuscitation room content and procedures (Table 1). The syllabus also contains a discussion of training goals by the PED director and of procedural regulations and communication routes by the chief PED nurse.

A list of reading material is provided at the end, including current practice guidelines and recent reviews in leading journals and books. References include textbooks of pediatric

emergency medicine [1-3] and of general pediatrics [4].

### **Development of the PEM residents' manual**

A structured format was developed for the manual consisting of seven important areas of study, each discussed in a separate chapter, as follows: general data and statistics, principles of case management with and without resuscitation as part of the primary evaluation, history taking, physical examination, and additional tests. The areas were researched separately using the Medline database, available practice guidelines, and recent review articles from leading medical journals. We also checked citations and references from recognized textbooks [1,3,4] and publications and websites of major international [5,6] or local [7,8] pediatric medical organizations. The sources for the data were added at the end of each chapter. Each area was discussed from the aspect of the unique emergency-medicine approach to the management of signs and symptoms (for example, acute abdominal pain). When possible, more than one technique was presented, together with the advantages and disadvantages of each, so that residents could learn to be flexible and to choose between alternatives, rather than cling to a fixed routine.

Two additional chapters, on general PED management and suggested indications for admission or discharge, were tailored to reflect the specific setup at Assaf Harofeh Medical Center. For example, in children diagnosed with leukemia in our PED, the attending physician must provide instructions and other considerations for immediate transfer to an appropriate facility that can provide pediatric oncology services.

The last chapter contains recommendations and instructions for the patient or parents, including home or ambulatory treatments, indications for follow-up or return visits, and further ambulatory evaluations, if required. The entire manual covers a total of 54 topics.

### **Summary**

In the short rotations in the PEM, pediatric residents are hard pressed to acquire the appropriate knowledge and skills to maintain an

adequate level of decision making, teamwork, and functioning under stress. We have therefore attempted to develop more appropriate training tools. The cornerstone of our training program is

an organized scheduled syllabus to help the resident internalize the essentials of PED practice as quickly as possible and which emphasizes areas not covered by other pediatric rotations. This is accompanied by a manual that covers practical topics and is targeted specifically for our center.

The syllabus is currently being implemented at the Assaf Harofeh PED, and the manual is expected to be completed in April 2007. To keep abreast of new developments, we plan to require all residents to add updates to the manual during their rotation to that a revised version can be prepared about every 2 years.

The true beneficiaries of these efforts are the sick children at Assaf Harofeh. We hope this report will alert other centers to take similar initiatives.

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