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PEDIATRIC PREPAREDNESS OF LEBANESE EMERGENCY DEPARTMENTS

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□ **Abstract—Background: The pediatric preparedness of Lebanese Emergency Departments (EDs) has not been evaluated. Study Objectives: To describe the number, regional location, and characteristics of EDs in Lebanon providing care to children and to describe the staffing, equipment, and support services of these EDs. Methods: We surveyed hospitals in Lebanon caring for children in an ED setting between September 2009 and September 2010. The survey was provided in English and Arabic and could be completed in person, by telephone, or on the Web. Results: We identified 115 EDs that cared for children in Lebanon; 72 (63%) completed the survey, most of which were urban (54%). Ninety-three percent of the EDs had <20,000 total patient visits annually; children (variably defined) accounted for <29% of the patients at 89% of the sites. Physicians caring for children in the EDs had varied medical training; and a pediatrician was "usually involved" in the management of pediatric patients in 95% of the EDs. Only 27% of EDs had attending physicians present 24 h/day to care for children. Half of the hospitals had an intensive care unit that could care for children (48%). Most EDs had endotracheal tubes (95%) and intravenous catheters (90%) in all pediatric sizes. Conclusion: The emergency care of children in Lebanon is provided at numerous hospitals throughout the country, with a wide range of staffing patterns and available support services.** © **2013 Elsevier Inc.**

□ **Keywords—child; Lebanon; Middle East; pediatric organization; Emergency Medicine Administration; Pediatric Emergency Medicine; preparedness**

INTRODUCTION

The emergent care of children varies across the world, dependent upon such factors as the type of health care system, funding, provider education, and burden of disease. In Malawi, for example, emergency care remains dependent upon visiting physicians, whereas in Kosovo, physicians without specific training in Pediatric Emergency Medicine (PEM) or Emergency Medicine (EM) staff the Emergency Departments (EDs) (1,2). A European survey of tertiary care centers reported that only 24% of the pediatric ED medical directors have formal PEM training (3).

Whereas local efforts have identified challenges to improving pediatric emergency care (PEC) in particular countries, such as staffing and parental education difficulties in the Congo and lack of equipment in Uganda; other countries have partnered with international providers to improve their outcomes (4–7). However, few data describe in detail the state of PEC in a region or country. Most such publications

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describe care in high-income countries in North America and Europe (3,8–14).

Lebanon, a small Middle Eastern country, is prone to armed conflict, emphasizing the need for appropriate emergency medical services to care for the ill and wounded. Recently, there has been increased attention to EM in Lebanon, including the establishment of the Lebanese Society of Emergency Medicine (2003), the first Academic Emergency Department (2007), and the first EM residency program (2012). Although these efforts will help develop EM as a whole, complementary efforts to develop the standards for PEC are also necessary. To date, there are no data to determine the preparedness of Lebanese EDs.

Our objective was to describe the status of Lebanese EDs that care for children to inform the further development of PEC. More specifically, we aimed to describe the number, regional location, and characteristics of hospitals in Lebanon with EDs providing emergency care to children and to describe the staffing, equipment, and support services of these EDs.

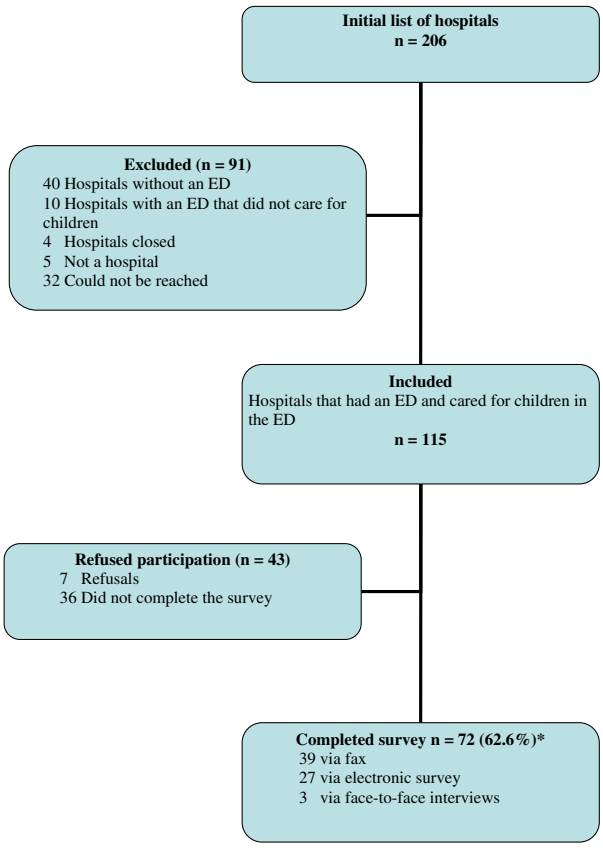
METHODS

Study Design and Population

The study was approved by the Institutional Review Board of both home institutions of the investigators.

We conducted a survey, between September 2009 and September 2010, of hospitals in Lebanon caring for children in an ED setting. We defined a hospital as any building termed "Hospital," "Mostashfa" (Arabic), or "Hôpital" (French). We chose this definition to be inclusive of any institution the Lebanese government or the Lebanese population would typically attend to receive emergent medical care. To compile a complete list of hospitals, we used the Lebanese syndicate of hospitals' website (www.lebanesesyndicateofhospitals.com), the 2008 Lebanese Yellow Pages book, and personal contacts (15,16).

We contacted each hospital by telephone and asked whether it had a pre-determined space termed "Emergency Department," "Emergency Room," "Emergency Area," "Tawarek" (Arabic), or "Urgences" (French). If so, we inquired in English or Arabic (as needed) whether the ED cared for pediatric patients, using the terms "pediatric," "child," "kid," "walad" or "tofol" (Arabic), or "Enfant" (French). We used multiple terms to broadly identify locations that children in Lebanon may go to for emergent medical care. We then contacted by telephone an ED or hospital administrator, an emergency physician, or a nurse on duty who identified the emergency physician, nursing leader, or hospital administrator believed to have intimate knowledge of the hospital, the ED, and its operations. Upon contacting this person, we confirmed that the ED cared for children, provided information about the survey (including confidentiality and the right to refuse participation), and then verbally secured the respondent's consent for participation. We excluded all hospitals that could not be reached physically, by telephone, or e-mail after at least four attempts over 6 weeks.



*3 surveys were completed but were subsequently lost

Figure 1. Flow chart. ED = Emergency Department.

Study Questionnaire

We developed our survey based on relevant questions and information from the 2001 "Guidelines for Pediatric Preparedness of EDs" and the 2004 "Guidelines for Essential Trauma Care" (17,18). Because Arabic is the official language in Lebanon and English is the second most commonly spoken language, especially in the medical field, the survey was available in English or Arabic (via official translation). It included questions in the following domains: 1) hospital demographics and characteristics; 2) ED characteristics (e.g., number of beds); 3) ED equipment; 4) ED staffing; 5) ED support services; and 6) ED policies or guidelines, mainly