

Family Physician Corner**Medical Emergency Preparedness in Primary Care**

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Since the release of two landmark reports by the Institute of Medicine (IOM) on quality of care in America in 1999 and 2001, patient safety has become a priority issue and a focus area for health care professionals, researchers, hospital administrators, policy makers, accrediting agencies, patients and families^{1,2}.

The US department of health and human services launched 50 million dollars initiative in 2001 to increase and improve research in patient safety³. Over the past decade, a great deal has been learned about medical errors and patient harm; in addition, we achieved better understanding of the environmental and human factors that can lead to adverse events⁴. Emergency patient's care is an important area for patient safety especially when it is practiced without the optimum resources and experience.

Emergencies in Primary Care Settings

Primary care physicians face various types of emergencies of all ages and both sexes. Asthma, anaphylaxis, seizures, shock, impaired consciousness, trauma and cardiac arrest are among the common adult and childhood emergencies in the primary care settings. Family physician should be prepared to encounter a range of emergencies.

Emergency care is complex, stressful and risky in the setting of critical patient care. Assessment, information transfer and treatment must occur simultaneously at the hands of a multidisciplinary team⁵.

Medical emergencies in busy health centers are a great source of concern for family physicians and proper planning for the unexpected can help alleviate some of the anxiety and improve patient safety.

Background and International Figures

Several studies have shown that emergencies are to be expected in an active family physician office^{1,4}. A study of general practitioners in rural Australia found that these physicians saw an average of eight emergencies per year and 95 percent of physicians had seen at least one emergency in the preceding 12 months⁵. A study found that the average family physician faces 3.8 childhood emergencies each year². Another study found that 62 percent of family medicine and childcare offices saw one or more children who required hospitalization or urgent treatment each week¹. Many studies have also shown that the primary physician offices were inadequately prepared to manage emergencies because of the rarity, time and

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financial constraints and the proximity of a hospital⁶⁻⁸.

The number of daily emergency cases encountered in the Bahrain health centers is lacking, but as an observation from day to day practice it is more prevalent than the international figures; this assumption could be only verified by multi health center study.

Bahrain Achievement

In Bahrain, all health centers have emergency rooms or emergency beds, resuscitation trolley providing important emergency medications and equipments.

Furthermore, a manual defibrillator is available in all health centers and four ambulances provided for Isa Town, Sitra, Muharaq and Mohammed Jassim Kano Health Center. Some doctors and nurses working in the health centers are trained in basic and advanced life support.

In some health centers, emergency rooms were reconstructed to accommodate larger number of cases and fitted with new emergency equipments. There is an emergency hotline in the health centers, which facilitate a quick communication with the ambulance services at Salmaniya Medical Complex. A quick calling system is available in the health centers to be used for calling all doctors in case of serious emergencies. In addition, Muharaq and Hamad Kano health centers are open for 24 hours; Isa Town, Sitra, Mohamed Jassim Kano and Naim health centers are open until midnight to reduce the load on the accident and emergency department of Salmaniya Medical Complex.

Furthermore, the vast majority of health centers are providing services in the evening in addition to the routine morning services.



Medical Emergency Kit for Family Physician Office

Current Situation

Managing serious emergency cases is primarily the role of accident and emergency department but the health centers doctors are daily encountering emergency cases of various types, ages and severity⁹. The reason is the proximity of the health centers to the residency area of the patients and being the front line of health; furthermore, some patients prefer to consult family physicians. In addition, patients may misinterpret the urgency of their

condition, unaware of the severity of their illness or purposefully avoid the emergency department.

Pediatric Emergencies in General Practice

In children, emergencies are by no means as common as ear infections; however, they do occur, and the consequences of being unprepared are serious. Many children enter the emergency medical system through local health centers, yet these health centers are not fully prepared to stabilize severely ill children. Because emergencies in children are less frequent than that in adults, primary care staffs lack familiarity with pediatric emergencies.

Emergency care in the health centers can be chaotic because of the large patient's volume, including large number of children who are not seriously ill or injured^{10,11}. There are many opportunities for communication errors in managing emergencies especially in pediatric because decision-making is frequently done by many physicians, frequent verbal orders which preclude the opportunity for double checks.

Finally, there is a great opportunity for improvement during the process of ordering and administering medications to children in the emergency setting. Observational studies of simulated pediatric emergency events have identified problems with dosing of medications and conversion of medication doses ordered in units by weight (e.g. milligrams) to the appropriate number of units by volume (e.g. milliliters). These studies have also described a prolonged period required to calculate doses and administer certain critical medications¹¹.

During the performance of resuscitation in children, opportunities for error are magnified. Medication dosing, choice of equipment size, and determination of fluid volume for resuscitation depend on the size of the child; thus, each must be determined or calculated precisely.

Emphasis on teamwork training is important in emergency patient management in general and particularly in pediatric. Mock codes or simulated patient scenarios to rehearse the use of Advanced Pediatric Life Support, Pediatric Advanced Life Support clinical guidelines are essential in the field of pediatric emergency care.

Furthermore, the practice of briefing and debriefing as well as the use of clinical tools such as the correct use of length-based tape to aid medication dosing and administration is particularly useful in pediatric age group. It is important to define pediatric emergency care competencies needed for physicians and nurses. In addition, the health care professionals must receive the appropriate level of initial and continuing education necessary to achieve and maintain those competencies. As well, it is of paramount importance to require regular training for key cognitive and technical skills and updates on resuscitation guidelines¹⁰.



TR-2 Hand Aneroid Family Practice Kit

The Goal

It should be a high quality care for emergency patients of all ages and both sexes.

Achieving the Goal

In order to achieve the mentioned goal, it is essential to improve the work situation in health centers' emergency rooms and improve the accuracy of evaluating emergency patients. It is also essential to improve the skills of primary care physicians and nurses in managing emergency patients and to improve the communication with the accident and emergency department of the main hospital. Increasing the awareness of the community and training key personnel in principles of first aid is of paramount importance.

Improving the Work Situation in Health Centers' Emergency Rooms

Providing the essential medications and equipments that reflect the spectrum of anticipated emergencies is essential. Physicians' skills and distance to the accident and emergency department has to be considered when providing medications and equipments in primary care settings. It is very important to allocate an adequate consultation time for emergency cases. Having important laboratory results and imaging studies on urgent bases is an important aid for diagnosing and managing certain types of emergencies.

Evaluating Emergency Patients

It is important to encourage more family physicians to sub specialize in emergency medicine or to enroll in rotation and refresher courses in the hospital emergency department. It is essential to enroll nurses in emergency nursing programs and offer them refresher courses to improve their abilities to evaluate emergency cases.

Improving the Skills of the Primary Care Physicians and Nurses in Managing Emergency Patients

It is important to train doctors and nurses regularly in basic and advanced life saving courses. Unexpected cardiopulmonary arrests occur commonly both in the pre-hospital setting and in the course of hospital care. Survival after pre-hospital arrest is improved if health care providers and bystanders are trained in basic and advanced cardiac life support. Several investigators have observed that the quality of resuscitation attempts improve after formal CPR training¹². It is also important to have regular sessions in mock emergency scenarios.

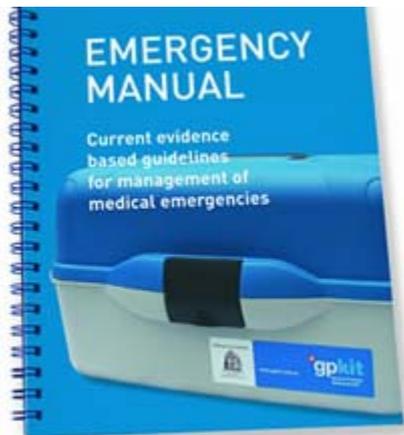
Nothing does more to maintain the level of preparedness in an office setting than practicing for emergencies. "A mock code" is an emergency drill in which a manikin is used to simulate a critically ill patient in the health centre. When properly conducted, such drills allow the primary care staff the opportunity to practice all steps in the emergency protocol as well as individual lifesaving skills. Often unanticipated problems with the protocol or medical equipment can be identified and corrected^{12,13}. "Mock codes" have been utilized all over the world. It has been practiced for several decades to increase health care providers' emergency preparedness. It is very useful to engage doctors and nurses every six months in resuscitation drills. These practice drills showed to increase practitioners' confidence and decrease anxiety during actual resuscitation¹².

Improving the Communication with the Accident and Emergency Department

This can be achieved by establishing a hotline with the accident and emergency department and by writing referral letters legibly and receiving clearly written feedback.

Improving the Awareness of the Community and Training Key Personnel in Principles of First Aid

This could be achieved by having a well-structured community based training program in basic life support and first aid for family members and key Personnel.



Emergency Manual Is Valuable Companion in the Office of Family Physician; It Is Available on the Internet

CONCLUSION

However, no primary care center can be as well equipped and prepared as a hospital emergency department that should not be a deterrent to establish emergency service in primary care setting not also the cost of basic equipment, medication and training.

Local health centers need to improve their preparedness to be in a better position to manage various types of emergencies of all ages and both sexes. Family physicians need many skills, systematic team approach, effective use of skills, support staff, and equipments.

Although pediatric emergency medicine is now a recognized subspecialty, children do present for emergency care to local health centers. Pediatric emergencies are serious events that occur more commonly than many physicians think¹⁰. Adverse outcomes can result when children with serious emergencies are managed under less optimum resources and expertise. Family physicians need special skills and preparedness to stabilize and resuscitate children, such preparedness should be part of their repertoire.

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