

The Evolution of Emergency Medicine in Jamaica

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ABSTRACT

Emergency Medicine in Jamaica has evolved rapidly over the past 20 years and has gained recognition as a specialty. A residency training programme has been established, trademark life support courses are now available, moves to develop areas of sub-specialization have begun and an emergency medicine association has been formed. There has been an increase in the diagnostic modalities in the main teaching institution, the University Hospital of the West Indies (UHWI). There is an urgent need for improvements in pre-hospital care. This will require the development of an efficient Emergency Medical Service (EMS). More emphasis and attention is required on disaster medicine, toxicology and trauma. Increased training of emergency physicians and nurses, advances in academia and research, and greater advocacy by local emergency physicians will further advance the specialty.

La Evolución de la Medicina de Emergencia en Jamaica

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RESUMEN

La medicina de emergencia en Jamaica ha evolucionado rápidamente en el curso de los últimos 20 años, y ha ganado reconocimiento como especialidad. Se ha establecido un programa de entrenamiento de residencia, y existen en la actualidad cursos comerciales en soporte de vida, se han iniciado movimientos para desarrollar áreas de sub-especialización, y se ha creado una asociación de medicina de emergencia. Ha habido un aumento en las modalidades de diagnóstico en la principal institución docente – el Hospital Universitario de West Indies (UHWI). Existe una necesidad urgente de lograr mejoras en el cuidado pre-hospitalario. Esto requerirá el desarrollo de Servicios Médicos de Emergencia (SME) eficientes. Se requiere más énfasis y atención a la medicina de desastre, toxicología y trauma. El aumento de entrenamiento de médicos y enfermeras de emergencia, los avances en la academia y la investigación, y una mayor defensa de los médicos de emergencia local, contribuirán al ulterior progreso de la especialidad.

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INTRODUCTION

The chronic non-communicable diseases seen in the ageing Jamaican population and trauma are main sources of burden on the healthcare system. Trauma accounts for approximately 40 per cent of the workload in both the Accident and Emergency Unit and surgical wards (1, 2). The homicide rate is high (3, 4). Despite a mandatory seat belt law introduced in

1999, mortality from motor vehicle collisions is increasing (5). Each year there are approximately 400 deaths representing a mortality rate of approximately 16 per 100 000 population (6).

The evolution of Emergency Medicine in Jamaica over the last two decades is described. The delivery of training and the spectrum of available services are outlined. The direction of future developments in Emergency Medicine in Jamaica is discussed.

Historical Developments

Jamaica is the largest of the English-speaking Caribbean islands, with an area of approximately 4411 square miles and a population of approximately 2.7 million (7). Approximately 20 years ago, emergency 'rooms' were inadequately

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equipped and staffed only by non-specialized nurses along with interns, junior medical personnel or individuals with non-Emergency Medicine specialist training. Pre-hospital care was non-existent and medical treatment did not begin until a patient arrived at the hospital. Although there were efforts and attempts of a triage at some institutions as described by Berk in 1989 (8), they were inefficient, and life-threatening emergency cases frequently waited long hours, sometimes with unfavourable outcomes. This was attributed to the limited availability of medical services along with the large number of patients who seek medical care. Furthermore, there was little exposure to life support courses such as Advanced Trauma Life Support (ATLS) and Advanced Cardiac Life Support (ACLS). Postgraduate doctors with appropriate training, returning to the island from overseas, brought some of these skills.

The transition from this loose multidisciplinary system to a specialist model of emergency medicine gradually developed over the last two decades. In 2001, the first graduates of the Emergency Medicine training programme emerged. Thus began a new era for emergency medicine in Jamaica. The island's 23 public hospitals are classified as Types A, B or C according to the level of service offered and the size of the population served. These provide 80% of tertiary healthcare and are administered by Regional Health Authorities in defined geographical areas (4). Trained emergency medicine physicians are employed at seven of these facilities. Additional posts are being created at the remaining hospitals and should become filled as more emergency physicians are graduated. Emergency care at private hospitals is widely available but only a small proportion of the population can afford this.

Teaching Hospital

The University Hospital of the West Indies is the main teaching hospital in Jamaica. This tertiary institution is a multidisciplinary 500-bed facility with imaging capabilities including computed tomography scanners, a Magnetic Resonance Imaging Unit, emergency ultrasound and interventional radiology. In 1988, a new Accident and Emergency (A&E) Unit was established at UHWI. Initially, this was managed by a surgical consultant with an interest in trauma and resuscitation. Today the unit is headed by a medical director with expertise in emergency medicine. The annual volume of patients through the A&E is more than 60 000.

The Emergency Medicine Division (EMD) of the UHWI consists of the A&E Unit and the Casualty (ambulatory care) Departments. It is staffed by emergency medicine programme residents, non-programme residents, senior house officers and full-time specialist consultant emergency medicine physicians. The nursing staff includes both emergency medicine trained and non-specialist nurses. There is also a new addition of trained Emergency Room Technicians (ERTs). The A&E Unit adjoins the radiology suite and has

eight emergency cubicles. Each twenty-four hour day is divided into three 8-hour shifts each headed by a consultant. Patient advocates assist patients with queries, contact relatives and retrieve patient records and by so doing help to reduce waiting times.

Patient triage is done by an emergency medicine trained nurse who is often assisted by a doctor. Patients are classified into three triage categories and are seen based on their triage screening designation. The emergency department (ED) case mix is similar to that seen in the developed world, with an increasing number of visits (27% in 2005) for chronic diseases such as hypertension and diabetes mellitus. Trauma cases are quite common accounting for 37% of all ED visits in 1996 (2). Forty per cent of trauma cases are victims of interpersonal violence, primarily of domestic violence and assaults (2).

Training

A four-year residency programme in Emergency Medicine was established in Barbados in 1990 and in Jamaica in 1996 (7). The Doctor of Medicine (DM) achieved in this programme is accredited by The University of the West Indies and recognized throughout the Caribbean. All programme residents must complete advanced trauma and cardiac life support courses. The current programme regulations mandate research as a part of training. Residents now spend one month at the Detroit Receiving Hospital in the United States of America (USA) where they hone research skills. A total of 15 graduates have completed training and work in EDs in Jamaica, The Bahamas and the Cayman Islands.

The ED (UHWI) has its own ultrasound facility and training of staff in ultrasonography has taken place. The course instructors hail from Kings County Hospital, Detroit. An ultrasound course director from within the existing faculty has been identified and ED ultrasound is expected to become a focus of training and research within the department. In addition, there is now a radiology suite installed within the department to assist with urgent radiological investigations. This has been achieved with private sector assistance.

Besides improvements in the service, research by the specialty has gained significant recognition with the publication of over 25 papers both locally and internationally over the last 10 years. Training and certification of life support courses also have been accelerated. The Advanced Trauma Life Support (ATLS) course was first introduced outside North America in 1986 when the American College of Surgeons (ACS) granted permission for it to be exported to Trinidad and Tobago as a pilot project (6). This course was held for the first time in Jamaica in May 2001 with assistance from the ATLS faculty in Trinidad and Tobago. Jamaica is now a training centre with a full complement of instructors including all the consultants in the Emergency Medicine

Division of the UHWI. An introductory course is offered to medical students called "Trauma Evaluation and Management Programme" and has been shown to improve trauma management skills among senior medical students in Jamaica (9). The impact of the ATLS courses in improving the quality of trauma care within the Caribbean has been well documented (6, 10). However some links in trauma care, specifically pre-hospital EMS and access to operating theatre require strengthening.

In 2004, the Heart Foundation of Jamaica (HFOJ) was certified by the American Heart Association as a Training Organization Centre. This led to the establishment of a National Resuscitation Council of Jamaica which is an alliance of organizations and individuals that collaborate to ensure that the chain of survival for Emergency Care is implemented and sustained in Jamaica. Advanced Cardiac Life Support courses were first held in the island in April 1998 and were run by the HFOJ and the Ministry of Health. In 2005, the AHA-accredited ACLS courses were conducted. Basic life support ACLS, and Paediatric Advanced Life Support (PALS) courses are conducted throughout the year by local faculty. This is a major advancement in the nation's development of the specialty.

In the ED today, there is also the addition of Emergency Room Technicians whose potential role is to replace the traditional porters who previously had no medical training. Here a four-month course of didactic teaching and in-service training is done on tasks such as BLS, phlebotomy, application of plaster of Paris, doing ECGs and urethral catheterizations. The first batch of seven graduates is presently employed in the ED at UHWI.

The training of emergency nurses began in 1995. Initially, a Nurse Educator was trained in emergency medicine at the Long Island Jewish Hospital in New York. A multi-disciplinary team subsequently developed the curriculum which includes suturing, catheterization of male patients, intravenous cannulation, performing electrocardiograms and patient triage. A total of 87 nurses have been trained since 1995. Most have left Jamaica and are presently employed in the USA, Canada, The Cayman Islands, The Bahamas and the UK. This is cause for concern as trained emergency room nurses must be retained for optimal development of hospital-based emergency care.

Caribbean Poison Information Centre

Most Caribbean countries see poisoning primarily in the paediatric population as an accidental occurrence. A retrospective review done recently in Trinidad examined this group of patients. Kerosene, pesticides, bleach and paraquat were identified as agents of particular concern (11). A retrospective review of the admitted cases of poisoning at the UHWI in a four-year period (1998–2001) revealed that there were 203 cases mostly in the second decade of life with 75% (156 cases) being intentional (12). Preventive strategies and

educational programmes are urgently needed in all territories. The Caribbean Poison Information Network was launched on May 13, 2005, in Kingston, Jamaica. This regional centre seeks to increase the general awareness of poisoning and improve the management of specific toxidromes by providing information on poisoning and drug toxicity to physicians and laypersons (13). In addition, the poison centre facilitates collection of data and statistical analysis to guide public health policy decisions. A total of 55 sentinel sites are being created islandwide through which information can be accessed by both clinicians and laypersons. The EMD of UHWI is part of the initial phase of this project and as a major referral centre is expected to play a vital role in the development of toxicology as a subspecialty of emergency medicine.

Emergency Medical Services (EMS)

Since the early 1980s, the Government of Jamaica has, with the help of foreign consultants, endeavoured to establish an islandwide EMS system. By 1996, a Phase 1 pilot project, was launched in the western part of the island in a joint venture between the Ministry of Health and the Jamaica Fire Brigade (JFB) (14). This involved training of firemen as basic emergency medical technicians (EMTs). The emergency access number for both EMS and fire services is 110, however many persons will call the police or the nearest hospital. The Ministry of Health provides financial support, training, technical organization and upper management where the JFB supplies personnel, both field and supervisory. These firemen/EMTs have basic level training. More advanced training allowing the EMTs to use invasive procedures and advanced life support techniques has not been possible because the laws of Jamaica preclude such procedures by personnel other than licensed physicians. The Emergency Medical Services Bill is in the final stages of preparation. This will provide the legislative framework to expand the range of skills that can be performed by EMTs and will facilitate the training of EMT Intermediate and EMT paramedics (EMT-I and EMT-P). Currently both private and public hospitals have ambulances which serve to effect transfer of patients between hospitals. There are two private ambulance services available for those who can afford them.

Air transport is an integral element in the movement of critically ill patients. Patients are usually transported from rural hospitals to larger regional centres where more sophisticated facilities exist. The Jamaica Defence Force air wing is the sole provider of aeromedical transport in Jamaica (15). There has been an increasing utilization of this service since its inception, as evaluated by Hanna *et al* (15). The majority of the patients transported were trauma victims. Inter-hospital transfers are common because of the centralization of tertiary services at the type A and specialist hospitals. The UHWI, Kingston Regional and Cornwall Regional Hospitals are the major receiving hospitals in the island. Public hospi-

tal ambulances transport 88% of patients and 11% are transported by helicopter (16). Patients with head injuries account for 73% of the inter-hospital transfers.

Disaster Preparedness

Jamaica is prone to hurricanes and other natural disasters. In this century, Jamaica was seriously affected by hurricanes in 1902, 1903, 1944, 1951, 1988 and most recently by Hurricane Ivan in September 2005 (17). The hurricane season in Jamaica begins on June 1 and ends on November 30 each year. A National Disaster Plan has been established by the government. Disasters are managed by the National Disaster Committee which is chaired by the Prime Minister. It is comprised of all government agencies concerned with all aspects of disaster management as well as the director of the Office of Disaster Preparedness and Emergency Management. This institution functions to create and maintain contingency plans at the national, parish and community levels, promote public awareness of disaster threats and appropriate response and coordinate emergency response islandwide at different levels of institutions and expertise.

Most hospitals have a disaster plan for mobilizing staff to handle unusual demands on their facilities. The UHWI Disaster Committee is headed by the Chief Executive Officer. The committee is guided by a written disaster manual and is convened prior to each hurricane season. The hospital disaster plan is reviewed yearly and necessary alterations made. A study done at the UHWI assessed the ED coping mechanism as adequate for this level of disaster (17).

The Jamaica Emergency Medicine Association (JEMA)

This body was formed by the first enrollees in the postgraduate emergency medicine programme in 1999 and has successfully staged an annual conference since its inception. The association has succeeded in bringing Emergency Medicine into focus within the medical community and influencing the development of the postgraduate programme in emergency medicine. The time has come for JEMA to play a more prominent role in advocating for the necessary advances in emergency medicine in Jamaica. JEMA must also identify key areas of interest relevant to the Jamaican context and lend its support to research in these areas.

Future Directions

Emergency medicine in Jamaica has developed significantly in a relatively short period of time, however several challenges remain. The training of specialist emergency physicians, emergency medicine nurses and EMTs must increase. This will require creation of posts and strategies to retain these categories of staff. There is an urgent need for improvements in material resources to meet the emergency care demands of the island despite a competitive national health budget.

A uniform triage system and effective communication and transportation should be adopted at all hospitals across

the island to enhance and improve interhospital transfers. Subspeciality development is advancing as consultants improve their area of sub-specialization. One consultant is being trained in toxicology and another in sonography. There is also interest in disaster medicine and sports medicine. This trend is to be encouraged as it will broaden the depth and scope of emergency medicine in Jamaica and lead to strengthening of the postgraduate emergency medicine programme. The current faculty requires expansion but this is limited by the lack of consultant posts. New ways must be found to employ technology to increase teaching efficiency. The specialty must seek to influence policies relating to pre-hospital care, disaster medicine, toxicology and trauma in order to define the future of emergency medical care in Jamaica and the Caribbean. The Jamaica Emergency Medicine Association is the logical forum for the discussion of many of these issues and should be used to facilitate collaboration with the appropriate governmental and private organizations.

In conclusion, although much work remains to be done, emergency medicine in Jamaica is no longer in its infancy and rapid development is underway as the specialty evolves and matures.

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