J Nepal Health Res Counc 2020 Jan-Mar;18(46): 120-5

DOI: https://doi.org/10.33314/jnhrc.v18i1.2006

Emergency Medicine Education at a Medical Institute in Nepal: Breaking the Frontiers

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ABSTRACT

Emergency medicine, globally, is a developing specialty. The President of International Federation for Emergency Medicine penned down in a 2007 editorial that emergency medicine is rapidly becoming a global specialty. There are an increasing number of countries which are exploring ways to further build emergency medicine. The Hybrid International Emergency Medicine Training Program is the first collaborative international Emergency Medicine training developed in the UK. A Memorandum of Understanding has been signed among Doncaster& Bassetlaw Teaching Hospital,, UK, International Centre for Emergency Medicine UK, International Academy of Medical Leadership, UK and Chitwan Medical College, Nepal. The HIEM program has been executed by CMC from November 15, 2018. As per the MOU, the International Training Registrars of HIEM Program will undergo 1st& 4rth Year of training at CMC, Nepal and the 2nd year and 3rd year of training at DBTH, UK. The HIEM Training Program is the first of its kind in the country; HIEM is the first post graduate emergency medicine program in Nepal which also has an international recognition and is unique in the sense that the programme is integrated with training in leadership and management. The HIEM Training Program is recognized by Royal College of Emergency Medicine, UK. CMC has committed to improving emergency care in Nepal by pioneering the HIEM Training Program. We are committed to fulfilling our moral and social responsibility to improve emergency care systems in the country through building up of a cadre of adequately trained Emergency Physicians.

Keywords: Emergencies; emergency care; emergency medicine; Nepal

INTRODUCTION

An emergency, as defined by the American College of Emergency Physicians (ACEP), is any condition perceived by the prudent layperson, or someone on his or her behalf, as requiring immediate medical or surgical evaluation and treatment. The practice of emergency medicine has the primary mission of evaluating, managing and providing treatment to these patients with unexpected injury or illness.[1] Emergency Medicine is defined by the International Federation for Emergency Medicine (IFEM) in 1991 as «A field of practice based on the knowledge and skills required for the prevention, diagnosis and management of acute and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioral disorders. It further encompasses an understanding of the development of pre-hospital and in-hospital emergency medical systems and the skills necessary for this development.[2]

EMERGENCY MEDICINE: CONCEPT & GLOBAL DEVELOPMENT

The recorded evidence of the practice of Emergency Medicine dates back to 300 BC by an Indian physician, Charak. However, the birth of the modern Emergency Medicine took place only in 1967.[2]The British Medical Association, in 1962, established a committee under the chairmanship of an eminent orthopedic surgeon, Sir Harry Platt, to oversee the management of accidents in the casualty departments of British Hospitals. Sir Harry Platt, among his many recommendations, suggested that the name "Casualty" should be changed to "Accident and Emergency". [3] This was to become, what we now know as Emergency Medicine.

Emergency medicine, globally, is a developing, young, speciality. Nonetheless, it is expanding in different directions at a fast pace. Emergency Medicine has broken through the walls of hospitals and has now crossed international borders. It is important to mention

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that emergency medicine is now heading into the acute components of all other medical specialties.[4] The President of IFEM penned down in a 2007 editorial that emergency medicine is rapidly becoming a global specialty. There are an increasing number of countries which are exploring ways to further build emergency medicine. It is believed that every country has its own unique attributes but in the development of emergency medicine, all countries have more that is common than is unique.[2]

According to the medical terminology, a specialty has a specific meaning of a clinical discipline encompassing four essential features: a defined body of knowledge; a unique field of action; a rigorous training program and an active research program. It cannot be denied that emergency medicine is now an established specialty and finds its place with other major medical disciplines. However, the battle to achieve this status has been arduous and long and it can be tough to ascertain when exactly emergency medicine was accepted as an independent practice. Nevertheless, undoubtedly, emergency medicine is now recognized as a primary speciality in USA, Canada, New Zealand, Australia, UK and many parts of Europe, in South Africa and in some Asian countries, as summarized in Table 1 below. [5]

According to the experience of International Emergency Medicine, it is suggested that the development of Emergency Medicine goes through three stages called the "EM development pyramid"(Figure 1).[6-8]

Table1. Milestones of development in emergency medicine in different countries [4]

Country	National Organisation	Residency Training	Board Examination	Specialty Recognition	Specialty Journal	Subspecialty development
Australia	1981	1984	1986	1993	1989	----------
Canada	1978	1974	1982	1979	1983	----------
UK	1965	1973	1983	1993	1983	----------
USA	1968	1970	1980	1979	1972	1990s
Hong Kong	1985	1994	1997	1997	1994	----------
Philippines	1988	1988	1991	1991	?	----------
Singapore	1993	1989	1991	1984	----------	1990s
South Korea	1989	1989	1996	1996	1990	----------
Taiwan	1990	1989	1993	1998	1990	----------
Bosnia	1987	1994	----------	----------	----------	----------
China	1986	1986	----------	----------	1981	----------
Mexico	1986	1986	----------	----------	----------	----------
Nicaragua	1995	1993	----------	----------	----------	----------

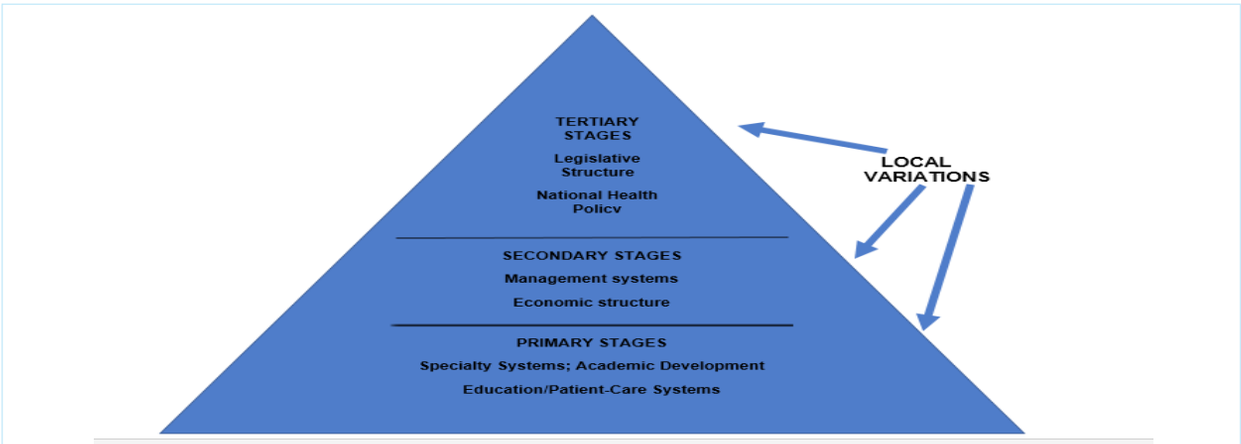

Figure 1. Emergency medicine development pyramid [6-8]

Stage 1 (Primary Development): This comprises of academic and clinical emergency medicine and patient care systems development. As a result of this, the present casualty departments will be upgraded into autonomously functioning well-equipped Emergency Department which will be managed by trained emergency physicians (EP).

Stage 2 (Secondary Development): This comprises of managerial and administrative training, development of economic and financial systems, systems analysis and reimbursement.

Stage 3 (Tertiary Development): This stage will focus on macro issues such as health policy, health legislation, public health systems, public health agendas, patient safety and acute health care as a human right.

The development of all the three stages overlap, and ideally, the stages should be implemented simultaneously.

Emergency medicine in Asia was first recognized in Singapore in 1984 (Table 2). In the initial days, those who recognized the need for EM and decided to stay on, had to actually learn from other specialties because of the wide scope of practice. Gradually, as the specialty took off, doctors, nurses and other supporting staffs went to places which had an established and integrated EM system such as the USA and the UK, so as to gain hands-on experience. Subsequent to their return, they trained their juniors. The pioneers of this field then endeavored to establish postgraduate examinations for trainees (Table 2). The examinations focused at assessment of specific technical skills as well as cognitive skills required for the practice of EM. Subsequently, the areas of sub-specialization are identified for development, such as emergency trauma care, pre-hospital emergency care, disaster medicine, emergency cardiac care, paediatric emergency medicine, emergency toxicology and observation medicine. There also has been establishment of national societies consisting of Emergency Physicians (Table 2). These national societies are committed to focus on improvement of the practice of Emergency medicine through education and research, publications, policy development, inter-organizational collaboration, consultation services for physicians, researchers, teachers and students.[9]

Table2. Development of emergency medicine in Asia.[9]

Country	Year EM recognized	Year Post Graduate Exams Established	Year National Society of EM established
Singapore	1984	1990	1993
Philippines	1988	1991	2011
Turkey	1993	1998	1995
South Korea	1996	1996	1989
Hong Kong	1997	1997	1985
Taiwan	1997	1997	1994
Malaysia	2002	1998	1994
Japan	2003	2002 (1983 quasi-board certification)	1973
Thailand	2003	2007	2001
India	2009	2009	1999

EMERGENCY PHYSICIAN: THE BACKBONE OF EMERGENCY CARE

In today's world, we have a better understanding of the global burden of disease consequent to improved epidemiological data collection and modelling and therefore it is now apparent that there is a changing nature to health needs. On one hand, there is a clear overlap between expected needs and emergency medicine while on the other hand,this has not resulted in expected shifts in support for emergency medicine. The particular areas of concern are: 1) increase in road traffic accidents, trauma and violence - necessitating emergency interventions; 2) increase in non-communicable diseases such as ischemic heart disease necessitating rapid treatment; 3) continuing high burden of communicable diseases, maternal and neonatal illnesses in developing countries and world's poorest and underserved places. The authors of the global burden of disease study have called for "evidence-based health care policy" based on their predicted changes and support of emergency medical services is justified.[10] There are a multitude of issues which add a sense of urgency to this perspective on emergencies - we move at a great speed through our day to day lives and that exposes us to greater risk of trauma; the provision of international travel has the possibility to bring infectious illnesses to a city; different kinds of violence perpetuated by natural and man-made causes is an ever-present danger;in addition, the health care and economic disparities are worsening and as a result, those without health insurance, find their first point of contact, and most likely continuing care , to be the emergency department; we now have exceptionally good novel surgical, medical including interventional approaches to treat urgent conditions. The onus is on us and we have a collective medical and social responsibility to make these emergency services available to our patients in a timely, appropriate and adequate manner.[11]In this context, the role of Emergency Physicians is or paramount importance.

The American medical Association in 1975 defined the emergency physician as a physician trained to engage in – The immediate initial recognition, care, evaluation, disposition of patients with injury and acute illness; the teaching, research and administration of all aspects of emergency medicine care; the direction of the evaluated patient to sources of follow-up care inside or outside the hospital as and when required; the provision when requested of emergency, but not continuing, care to in-hospital patients and also the management of the emergency medical system for the provision of prehospital emergency care.[1]

Publications that supported the importance of EM as a medical specialty and of the importance of clinical care delivered by trained emergency physicians have been identified by Holliman et al. in 2011.The review came to the conclusion that EM is a recognized, distinct specialty with its own specialist training residency programs and that, there is supportive literature for the following statements –EM is an indispensable key component for all national healthcare systems; EM and the care provided in emergency departments offer efficiencies and cost effectiveness of care delivery within the broader healthcare system; a number of public health interventionsand measures related to preventive medicine can be provided by EM and emergency departments;the residency training in EM leads to better patient care in the ED; the faculties of EM can contribute through delivery of high-quality medical training and patient care and these faculties play an effective role in patient safety; the trained emergency physicians can effectively provide critical care; the trained emergency physicians can safely and effectively perform selected invasive procedures; the trained emergency physicians can effectively manage patients of trauma and also effectively perform advanced airway management.[12] The core of modern health care is comprised of emergency care systems, and providing a high-quality care to patients has always been a primary role. However, in reality, we are not adequately resourced to achieve these goals, which consequently leads to tension between patients and health care workers.[13]

HYBRID INTERNATIONAL EMERGENCY MEDICINE (HIEM) TRAINING PROGRAM IN NEPAL: A PARADIGM SHIFT

The specialty of EM is still a nascent specialty in Nepal. Currently in Nepal, a growing number of hospitals have well-structured EM departments, but they often still lack formally qualified EM faculty. As the establishment of Emergency Department (ED) in various public and private hospitals is increasing in Nepal, the need for physicians specifically trained in EM is also accelerating. Effective emergency care systems are a cost-effective and viable means of care delivery.[7]As the specialty development of emergency medicine (EM) continues to expand worldwide, it is proving to be an essential component of the health care system in the Nepali context. Development of faculty and mentoring are important steps in promoting the development and maturation of EM in countries where the specialty is nascent.[14] Emergency medicine as a discipline needs nurturing as a medical specialty in Nepal.Introduction of training and development programs is a highly important need because there are very few physicians specifically trained as Emergency Physicians in Nepal.

The undergraduate medical students in Nepal are posted to Emergency Medicine during various phases of their study duration, including internship. The MDGP curriculum of Nepal also makes it mandatory for MDGP residents to have postings in Emergency Medicine. In Nepal, in 2011, TUTH started offering a 3-year sub-specialty program in EM leading to the title of Doctor of Emergency Medicine. BPKIHS runs an18-month Fellowship in Emergency Medicine since 2013. Patan Academy of Health Sciences has also initiated an 18-month Fellowship in Emergency Medicine since 2013. In 2018, Grande International Hospital started a 24-month Fellowship in Emergency Medicine.[15]

The Hybrid International Emergency Medicine (HIEM)is a post graduate level programme in Emergency Medicine and isthe first collaborative international Emergency Medicine (EM) training developed in the UK. The collaborative HIEM Training has been developed with consultations and advice from multiple stakeholders over the period of almost two years. A Memorandum of Understanding has been signed among Doncaster& Bassetlaw Teaching Hospital, UK, International Centre for Emergency Medicine (ICEM) UK, International Academy of Medical Leadership (IAML), UK and Chitwan Medical College, Nepal. The HIEM program has been executed by Chitwan Medical College in Nepal, from November 15, 2018 and is the first of its kind in the country. HIEM is the first post graduate emergency medicine program in Nepal which also has an international recognition and is unique in the sense that the HIEM training programme is integrated with leadership quality. Chitwan Medical College has collaborated with the HIEM concept and has met the basic requirements of faculty development, systems improvement, clinical and educational supervisions, weekly teachings from UK and change in management culture (focussing on collaborative leadership) to deliver patient-centred emergency care. This HIEM training model is designed to be more holistic

and attractive, offering enhanced skills in leadership, management and quality improvement.

An international training in Emergency Medicine equips physicians with the knowledge and skills necessary to help develop health systems in their respective countries.[16] An international rotation allows the trainee to gain clinical experience in a country that is different from one's country of origin and allows the trainee with an opportunity to observe or practice in a new environment and also provides an opportunity to see a spectrum of diseases and illness unique to a particular country.[17]HIEM trainees will go through 4 years of training (1st and 4th year training is designed to take place entirely in Nepal at Chitwan Medical College and 2nd and 3rd year training is designed to take place entirely in the UK at the Doncaster& Bassetlaw Teaching Hospital). Trainees will follow the Royal College of Emergency Medicine (RCEM) curriculum and Fellowship in Quality improvement (FQim) modules as part of the training. QiMET Nepal makes the roster and there is provision for clinical supervision in each rotation. Educational Supervisor (UK Based) assures that workplace-based training and assessments are taking place uniformly and regularly. The training program director (UK Based) oversees the program. By induction to NHS in the 1st year itself, the training delivers around the communication, cultural differences, patient-centred care, communication skills, ownership of patient and overall focus on good quality care. Though these are the backbone to the NHS system, they are necessary for anyone to be a good doctor delivering patient –centred care. At the end of the training process, trainees will appear for Member of Royal College of Emergency Medicine MRCEM exam, and will receive two qualifications (MRCEM and FQim). The degree of MRCEM will be awarded by Royal College of Emergency Medicine. The degree of FQim will be awarded by International Academy of Medical Leadership (IAML). HIEM training is recognized by RCEM-UK. The trainees on successful completion of the process will be able to work as specialists in Nepal. Trainees will be recruited through Quality improvement Medical Education Training centers (QiMET) worldwide. In Nepal, Chitwan Medical College (CMC) has been recognized as the QiMETcenter.

The HIEM trainees while going through the 1st and 4rth Year of training in Nepal, will receive continuous support from Chitwan Medical College, Teaching Hospital and from Doncaster & Basset law Teaching Hospital, UK. Clinical supervision will be given by Consultants from Chitwan Medical College, educational supervision will be given by UK consultant team (DBTH). The theoretical teaching sessions are carried out over skype such that all the clinical supervisors in Chitwan Medical College and the educational supervisors in DBTH can attend the sessions along with the HIEM Trainees.Trainees will go through ARCP (Annual Review of Competency Progression) process every year, which will be arranged by Post Graduate Medical Education and Training Department at Doncaster and Bassetlaw Teaching Hospitals NHS Trust. Work Place Based Assessments (WPBAs) will be done in the same way as UK based trainees. The HIEM Trainees maintain a logbook in the form of eportfolio. Regular mentor guided reflective practice is encouraged around the practice and training so that learning becomes a continuous process.

A joint and integrated curriculum was developed using RCEM 2015 curriculum and adding important aspects like: Introduction to NHS module in the first year; some anaesthesia and ITU competencies before the candidates go to UK;local emergencies in the fourth year;competencies in leadership and quality improvement and requirement for thesis.

The HIEM Training Model is outlined in Table No. 3

Table 3.The HIEM Model.

Year of Training	Country of Training	Clinical and Leadership Curricula Learning Objectives
I	Nepal	Emergency Medicine-(6 months) (ITU -Intensive Treatment Unit) - (3 months) Anaesthesia - (3 months) Induction to NHS (National Health Service), UK Fellowship in Quality Improvement (Module 1)
II	UK	Clinical Attachment -1 month (ACCS - Acute Care Common Stem) EM (5 months) (ST3 - Specialty Training 3) AEM -Trauma (6 months)
III	UK	(ST4- Specialty Training 4) Emergency Medicine - 12 months Fellowship in Quality Improvement (Module 2)-Leadership & Management
IV	Nepal	Acute Medicine (3 months) Pediatric Emergency Medicine (3 months) Emergency Medicine - Local competency Fellowship in Quality Improvement (Module 3 & 4) (6 months)

The exposure to and interaction with other cultures is an advantage offered by international clinical rotations and it allows the clinician to learn more about the historical

background of other cultures and may lead to a better understanding of emergency department patients from other cultures in one's home country.[17] This in turn, would reinforce the greater awareness of cultural diversity and sensitivity. It allows physicians to better comprehend the influence of culture in the compliance with medical care.[14] Following the general trend in medical education, emergency medicine training now also explicitly includes 'professional' domains of learning, including communication, ethics, leadership, teamwork, management and systems-based practice.[18] The HIEM training model embodies all these professional domains.

The HIEM trainees will also receive an attractive stipend in the 2nd and 3rd year of training in the UK - £35,000/ annum + 50% banding £17,500 /annum

THE WAY FORWARD

Various efforts throughout the country have worked to further develop EM and toincrease the pool of specialty trained EM physicians in Nepal. Recognition by the Nepal Medical Council has demonstrated a 'snowball' effect, with medical institutions starting training programmes in EM. Steadily, the specialty of emergency medicine is gaining national acceptance and this has been possible because of the efforts of emergency physicians, local advocates of the specialty, national, regional and international organizations. The emergency physicians of Nepal can make an effort to influence relevant stakeholders and collaborate with key international institutions to further advance EM initiatives in curriculum development, educational methodologies, vital emergency health policy issues and clinical care delivery.

CONCLUSIONS

Chitwan Medical College has committed to improving Emergency Care in Nepal by pioneering the Hybrid International Emergency Medicine Training Program. We are committed to fulfilling our moral and social responsibility to improve emergency care systems in the country through building up of a cadre of adequately trained Emergency Physicians.

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