



Research Seminar

The importance of developing global emergency medicine research network☆



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ABSTRACT

Despite the fact that emergency care can impact health of populations, the global epidemiology of emergencies in children and adults is unknown and substantial variation exists in emergency infrastructure among different nations, especially among the low and middle income countries. Various research networks which are etiology specific or subspecialty specific, including emergency care based networks have positively impacted the health of populations. However, emergency departments (ED) in low and middle income countries are underrepresented in most international networks. Creation of a global ED based research network will help generate generalizable evidence that can then be translated into locally relevant evidence-based guidelines, nurture future researchers in emergency medicine, standardize training/education and improve patient outcomes by reducing variation in clinical care.

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Emergency care extends from pre-hospital settings to the emergency department (ED) and defined as a system designed to organize “personnel, facilities, and equipment for the effective and coordinated delivery of health-care services” to individuals and populations who are acutely ill or injured, whether surgical, medical or as a result of largescale man-made or natural disasters [1,2]. EDs, an integral part of healthcare systems worldwide, provide vital, uninterrupted, and universal access to healthcare for all patients. EDs are the first point of contact and often serve as a safety net for the disadvantaged. Emergency medicine is increasingly recognized as an independent medical specialty globally, although, primarily in developed countries, with standardized curricula and comprehensive training [3–5]. However, there is substantial variation in the organization of emergency services, resource allocation, and provider training, all of which negatively impact the quality of care and patient outcomes across the world.

Inattention to research in emergency medical services globally has resulted in a scarcity of evidence necessary to guide aspects of emergency care that could be locally applicable [6]. Data on ED-based patient outcomes is available for higher-income countries, but epidemiology of ED visits globally is unknown, especially in lower- and middle-income Countries (LMICs) [7]. The Global Emergency Medicine Think Tank has identified limited numbers of trained personnel, non-standardized data collection, ethical constraints and insufficient funding as major barriers to performing research in LMICs [7], all of which must be addressed systematically. There is an urgent need for current data on emergency disease burdens and common taxonomies that can be used to compare different populations seeking and receiving emergency care in order to develop global evaluation metrics [7,8].

Many of these barriers have been overcome in other medical specialties through the creation of local and international health research networks [9]. The Global Health Advocacy and Policy Project defines such networks as “webs of individuals and organizations linked by a shared concern” that serve in critical “agenda-setting and policy development roles, particularly by influencing how problems and solutions are understood and by recruiting new actors to address the issues that concern them.” [10] The World Health Organization’s World Health Report, called for research networks to enhance population health, equity, and development [11].

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The ability to impact emergency care by research networks is substantial as evidenced by the impact of the research generated and implemented by U.S. based networks such as Strategies to Innovate Emergency Care Clinical Trial Network (SIREN) and Pediatric Emergency Care Applied Research Network (PECARN) and international networks such as the Pan Asian Resuscitation Outcome Registry (PAROS) and the Pediatric Emergency Research Networks (PERN) [12–15].

EDs in LMICs are underrepresented in most international networks. However, the RIDEPLA pediatric emergency research network in Argentina and Uruguay, is one such network, but is challenged by fewer financial resources than its counterparts in North America, Europe, and Australia, New Zealand [16]. Development of an ED research network involving LMICs will require cross-disciplinary collaboration between emergency care providers including physicians, nurses and paramedics, scientists, administrators, and policy experts [17]. As a first step, pertinent stakeholders need to convene in a global forum to draft a mission statement and identify experts and academic institutions in participating countries to coordinate collective efforts to highlight the need for emergency collaborative research. Global in-person summits could help establish country-specific and common research priorities, and advocacy strategies to secure funding from local and global agencies public and private (philanthropic) sources. To develop the next generation of global emergency medicine investigators, robust mentoring programs on various research methods, data analyses, good clinical practices and ethical principles will need to be an integral part of such a network [17]. Additionally, data coordinating centers will be essential and serve as central repositories to ensure data quality and uniformity. A Global ED-research network should demonstrate the ability to conduct retrospective and prospective studies with reliable, valid data and publish their findings in emergency and non-emergency, peer reviewed journals and use innovative dissemination techniques such as use of educational websites (e.g. Academic Life In Emergency Medicine – www.aliem.com or Twitter) [18,19]. Such efforts are imperative as it will inspire policymakers to include emergency medicine research, and the potential network, in national healthcare agendas.

A global emergency medicine research network must remain patient-centric and adhere to fundamental ethical principles. This can be complicated if countries, regions lack formal ethics committees that meet international guidelines. Building a model of using data to improve patient care which impacts the health of populations in all regions of the globe should be the mission of this network. The steps towards advancement for harnessing of clinical data will be incremental and may first involve determining feasibility in collecting baseline data prospectively using electronic data capture via secure web and or mobile applications, given that many LMICs countries already have robust mobile technology infrastructure. The long term goal should be a collaborative partnership between high income countries and LMICs to gather, mine, and use data to generate evidence, disseminate knowledge and implement changes to improve local emergency health systems. Although few, some examples of such collaborations have already resulted in some joint statements or consensus guidelines for condition-specific evaluation and management [8] and for development of training programs [17,18]. It is also important to seek and incorporate innovative technologies that might be cost effective, especially in resource constraint settings.

The ultimate goal of an emergency research network is to improve the care of acutely ill and injured patients, build a body of knowledge by collecting the necessary data to guide population health efforts and nurture researchers in emergency care. Indeed, the potential benefits, i.e. improving care of individuals, communities and nations far exceed

the substantial challenges involved in developing successful research networks.

Conflicts of interest

The authors have no conflicts of interest relevant to this article to disclose.

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