

The Health Research Stakeholder Consultation on a new Strategy for Science, Technology and Innovation
Submission from the Irish Association for Emergency Medicine (IAEM) on Emergency Medicine Research in Ireland

Emergency Medicine (EM) is a relatively young and evolving specialty. It is the field of medical 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 episodic undifferentiated physical and behavioural 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. Emergency Departments (EDs) provide continuous round-the-clock availability of diagnostic and therapeutic services. EDs have therefore been called society's healthcare safety net of last resort. In Ireland, approximately 1.2 million people attend EDs every year. Providing timely, safe and evidence-based care, and minimising clinical risk, in this large patient population is the essence of the specialty of EM.

Healthcare managers and policymakers need to pay attention to ED processes, particularly the role that EDs play in facilitating needed hospital admissions and avoiding those that are preventable. More than half of all inpatient admissions enter hospitals through the ED. ED doctors are therefore serving as the primary decision makers for more than half of all hospital admissions. Furthermore, EDs play a constructive role in constraining the growth of preventable hospital admissions; for example, through the implementation of hospital admission avoidance strategies for the management of some clinical conditions such as deep vein thrombosis (abnormal blood clots in the deep veins of the leg). This means that decisions made in the ED have a profound impact on the financial fortunes of hospitals on one hand, and the aggregate costs of health care on the other. Due to this critical role of EDs in the healthcare system, EM research can play an important role in conserving resources and improving health care delivery.

The need to better understand, document, and monitor the events encountered in the "bellwether" environment of the ED have resulted in the development of new EM research units in Ireland. One such unit is the Paediatric Emergency Research Unit (PERU) in the National Children's Research Centre, Our Lady's Children's Hospital, Crumlin; others are the Centre for Prehospital Research (CPR)

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at the University of Limerick, the Emergency Care Innovation and Research Centre (EIR) at University College Cork, and the Emergency Care Research Unit (ECRU) at the Royal College of Surgeons in Ireland (RCSI).

Nevertheless, for a variety of reasons, progress in EM research in Ireland has been slower than the need. Research in the ED setting is a challenging task compared to other specialties, because patients present in an unpredictable and uncontrollable fashion, 24 hours a day, 7 days a week, every day of the year. In addition, compared to other healthcare settings, the critical nature of their presentations poses more problems with respect to ethics and consent. While these issues create challenges for conducting research in the emergency care setting, EM doctors have learned to accept and overcome them.

Still, there are several issues hampering a more timely resolution to the important problems facing the delivery of optimal patient care in Irish EDs:

1. Firstly, the lack of trained EM researchers has slowed the development of the critical mass of EM researchers required to provide valid solutions to the unique problems of providing optimal emergency care.
2. Secondly, Irish EM researchers typically conduct research without the same infrastructural support of other medical specialty groups. For example, there is no equivalent of the Irish Heart Foundation or Irish Cancer Society for EM research in Ireland, and most EM researchers do not receive government or university support, and have no protected time for research. Current Consultants in Emergency Medicine with a research interest frequently compete with full-time researchers and clinicians from specialties with long-standing research infrastructural support who have more time and resources to compete successfully. This inhibits the development of EM research in Ireland more than a lack of training.
3. Thirdly, while we know much about patients who die or are admitted to hospital through hospital information databases (for example, the Hospital In-Patient Enquiry [HIPE] database) hospitals collect little or no data on the majority of patients who are treated and discharged from EDs (80-90% in most EDs). There are unsophisticated collections of local, unlinked, non-standardised data systems to capture the work that EDs do, assess the impact of care and quantify eventual patient outcomes. Without standardised data collection and linkages, much time is wasted and ED surveillance is virtually impossible.
4. Fourthly, much of the focus of emergency care research does not fit into traditional clinical research domains. For example, a main focus of EM research is how the current lack of resources, such as beds, staff and diagnostics, impairs the ability of EDs to manage patients in a timely and effective manner. Currently in Ireland, there is only international evidence and anecdotal evidence to draw from in relation to how delays have resulted in poor patient outcomes. Local research is required to create an Irish evidence base to guide policy regarding emergency care in Ireland. For EDs to function as universally accessible, efficient, evidence-based sites of care, EM needs to be provided with the research resources to evaluate the current system and the vision to apply the results to improve the services provided.
5. Finally, there has been a lack of coordination within the specialty in relation to research development. Individual EDs often conduct small-scale studies that lack the power to solve the major pressing and common questions facing the delivery of emergency care nationally. While these local efforts are commendable and their research interest is necessary, a nationally focused research agenda is required to solve the main challenges facing the delivery of optimal patient care in Irish EDs (for example, patient flow and ED crowding) on a daily basis.

Despite these challenges, solutions to them are being sought by EM doctors in Ireland. For example, many EM specialist registrars are currently pursuing advanced research degrees such as MDs and PhDs. Irish EM researchers have recently been internationally recognised for their excellence in research. A research group headed by an Irish Consultant in Emergency Medicine, Professor Ronan O'Sullivan, has just been awarded two prestigious awards (the *SPR Clinical Research Fellows' Award from the Society for Pediatric Research* and the *American Pediatric Association Ludwig-Seidel Award for Best Research Project in Pediatric Emergency Medicine*) which will be presented at the upcoming 2015 Pediatric Academic Societies (PAS) Annual Meeting in San Diego, USA, which is the premier paediatric academic meeting globally. Irish EM researchers have also successfully obtained competitive grant funding from the Health Research Board (HRB) after competing with researchers from disciplines with more longstanding research infrastructure support. The playing field is therefore being levelled to a certain extent, but there is still much to do in establishing an EM research infrastructure comparable to those that currently exist in other medical specialties in Ireland and commensurate with the pressing problems encountered daily in EDs nationally.

With the number of ED attendances continuing to increase year-on-year, EM will continue to play an increasingly important role in the future of health care delivery in Ireland and in conserving healthcare resources. However, EM needs assistance from the government, the Department of Health, the Health Service Executive (HSE) and the Health Research Board (HRB) to move forward and solve the problems that exist in the emergency care system through evidence-based policy-making. Without research and surveillance the current health system problems, which manifest as crisis in Irish EDs, will persist and continue to compromise patient care. This should not be allowed to happen. The recommendations outlined below represent some possible solutions for the future of EM research in Ireland.

Recommendations

1. EM research should be placed higher on the Department of Health's agenda, and supported with sufficient funds to make it successful. We propose the creation and funding of an EM research network in Ireland. At the very least, the Department of Health should consider an enhanced link between the HRB and EM. One option would be to ensure EM representation on key Department of Health RD & I initiatives (for example, the National Health Innovation Hub).
2. A separate HRB grants competition scheme for EM research should be developed. The success of the Ontario Emergency Health Services Research Advisory Committee (EHS-RAC) model in Canada suggests that this is a cost-effective method to enhance productivity and interest in EM research. Solutions to problems affecting ED (for example, the association between hospital patient flow, ED crowding and trolley waits) cannot be answered by researchers from other disciplines. EM needs the ability to ask the questions and solve the problems that are important to the delivery of optimal emergency care in Ireland.



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