Paediatric emergency medicine

This issue of the journal is dedicated to paediatric emergency medicine (PEM). It provides a broad overview of some common clinical and diagnostic issues, and highlights some key areas of research and education. Innovations in PEM are occurring at a rapid pace and many are described here; increasing use of respiratory support in the emergency department (ED), ultrasound by PEM clinicians, use of clinical scoring systems to identify children at risk of deterioration, simulation for education and training and alternatives to traditional ward admission. The issue of knowledge translation is discussed and some of the evidence gaps in PEM care are addressed.

The origins of emergency medicine derive from the battlefield and military medicine. The French military surgeon Dominique Jean Larrey is sometimes called the father of emergency medicine. The speed of the French flying artillery gun carriages he witnessed during the late 18th century wars of the French revolution stimulated his imagination to develop "flying ambulances" to transport wounded soldiers to the relative safety of health facilities (Figure 1). The outdated early name of casualty department derives from the war connection.

Hospital emergency medicine has only developed as an independent medical specialty since the 1950s and is younger than this journal. Until then it was primarily staff physicians, general surgeons, family physicians and other specialists who staffed hospital emergency departments, while nurses played an important triage role in many smaller emergency departments. The US led the way with the development in the 1970s of emergency medicine residency programmes and medical student training, and emergency medicine became a recognised medical specialty in the US in 1979. Other Western countries followed, first in adult and subsequently in paediatric emergency medicine, and their children’s hospitals almost all have emergency departments staffed by trained emergency medicine specialists.

The Australasian College for Emergency Medicine (ACEM) was established in 1984, although emergency medicine was only recognised as a medical specialty in Australia in 1993 and in New Zealand in 1995. PEM has only been recognised as an independent entity over the last 10 to 15 years. However, a formal joint training program has been established, administered by ACEM and the Royal Australasian College of Physicians, and paediatric EDs have flourished in all major cities.

Like other paediatric specialties, paediatric emergency medicine has important differences from its adult counterpart. Givens outlined ten ‘commandments’ of paediatric emergency medicine. Children are not small adults, Givens says: anatomy, physiology, understanding and emotion vary with age. Ill and injured children regress. The ‘patient’ might be the one holding the child. Children’s symptoms are rarely factitious. A good history and physical examination is paramount, and investigations are often not needed. Get help with procedures. Check and recheck things carefully, especially drug doses. Treat pain adequately. Close the loop with appropriate follow-up care. Above all, you are the child’s advocate. Who would dare challenge such erudite wisdom? Surely not even Moses.

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While it can be difficult to prove whether or not specialisation in paediatric emergency medicine has improved clinical care, it can certainly contribute to knowledge through collaborative research. The Paediatric Research in Emergency Departments International Collaborative (PREDICT) network founded in 2004, with researchers from 14 EDs in Australia and New Zealand, brings together multidisciplinary teams for multicentre paediatric emergency research projects. The network also facilitates professional development through opportunities for higher degree studies, post-doctoral mentoring and funding research training. It is currently a National Health and Medical Research Council (NHMRC) funded Centre of Research Excellence (http://www.predict.org.au/). Studies recently commenced or nearing completion across the PREDICT network include a randomised controlled trial (RCT) comparing levetiracetam and phenytoin for status epilepticus, a placebo controlled RCT of prednisolone for Bell’s palsy, an RCT comparing high flow nasal cannula oxygen therapy in bronchiolitis, and an observational study of 20,000 head injured children assessing clinical decision rules for computerised tomography (CT). A study will also explore the best strategies on how new evidence should be implemented in the acute care setting. PREDICT is also collaborating with overseas paediatric emergency centres in a global research network, the Pediatric Emergency Research Network (PERN). Initial completed PERN projects include a case control study of the influenza H1N1 epidemic from 79 EDs and a survey of child traumatic stress with the participation of 2500 ED staff from 87 countries.

PEM clinicians have taken a lead role in the development of Advanced Paediatric Life Support (APLS) courses in Australia and New Zealand which provide the de facto national standards for the initial assessment and resuscitation of acutely sick and injured children. APLS also organises the annual Paediatric Acute Care conference, the premier educational conference for PEM and related specialties in the region.

PEM has come of age; it is now a mature specialty whose clinicians are advocating for children through their clinical work, education and research.

References


Mike Starr, Emergency Medicine, Royal Children’s Hospital, Parkville Vic 3052
(mike.starr@rch.org.au)

Dr Franz Babl, Emergency Medicine, Royal Children’s Hospital, Parkville Vic 3052

Professor David Isaacs, Children’s Hospital at Westmead, Westmead NSW 2145

Figure 1: Larrey’s “flying ambulance”. Author unknown, National Library of Medicine
Author/s:
Starr, M; Babl, F; Isaacs, D

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