High Quality Emergency Care for Children:
Optimal Global Care of Children in Acute Care Settings
A White Paper from the Paediatric Emergency Medicine Special Interest Group (PEMSIG) of the International Federation of Emergency Medicine (IFEM)

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EXECUTIVE SUMMARY/ABSTRACT

Emergency Medicine (EM) is the medical speciality that assesses and manages patients of any age with sudden onset of illnesses or injuries. There are important differences in one's approach to care of children when compared with adults. Providing excellent clinical care to children in this context deserves special mention. Children deserve standards of care that are no less than those provided for adult patients. To provide this care, basic amendments in staff training and in the layout and equipment of hospitals receiving paediatric patients are important to cover children's needs. Optimizing outcomes for children from Emergency Departments throughout the world will contribute to the foundation of a healthy society and reduce economic impact of illness and injury.

Some countries have established general emergency medicine systems and training programs with specific paediatric emergency medicine (PEM) components, whilst other countries have advanced PEM systems and training programs, which prepare providers to address these differences. However, in many other hospitals around the world, staff may not have the training or resources at their site to provide even a minimum good standard of care for children (1). Addressing these differences will contribute to better health outcomes.

SECTION 1: INTRODUCTION AND OUTLINE OF PROBLEM

Children are the future of our society, and it is incumbent upon us to provide the best medical care possible for them. Between 2017 to 2020, the global number of deaths in children under 5 years decreased from 5.4 million to 5.0 million. These deaths are unevenly distributed, with Sub-Saharan Africa and South Asia representing 81% of these deaths while only accounting for 52% of the under-5 global population (2).

Well-organised emergency care is recognised as a cost-effective public health intervention. Effective emergency care, delivered by properly trained staff, saves lives, improves the effectiveness of other components of the health system and reduces costs across all settings of high, middle, or low-income countries. Recognising this importance to strong health systems, the World Health Organisation (WHO) in its 2007 World Health Assembly (WHA) Resolution 60.22 'Health Systems: Emergency Care Systems' called for all countries to develop effective emergency care systems (3). More recently in its 2019 WHA, Resolution 72.16 'Emergency care systems for universal health coverage: ensuring timely care for the acutely ill and injured' placed Emergency Medicine as a core specialty within any healthcare system (4), and in 2021 released a practical guide and tools regarding minimum standards for emergency medicine teams (5-6).

In many receiving facilities at the "front door of the hospital" staff are predominantly adult-trained and the care of children falls below that of the adult patients. The International Federation for Emergency Medicine (IFEM) believes that unnecessary variation in standards of care can be reduced by adopting quite basic training and processes, and by having a benchmark of international standards of care. These standards have been provided by the Paediatric Emergency Medicine Special Interest Group within IFEM. (1) (**LINK**). As Dr Baljit Cheema says in chapter one of the Standards…. *'wherever you are in the world, whether you work in limited resource settings, where children's emergency care may just be starting to evolve, or if you are based in a state-of-the-art emergency facility in a high-income country, there is something in this document for you'.*

Historically, there has been a focus on strengthening public health and primary health care for children through programs such as WHO Integrated Management of Childhood Illnesses (6); these interventions are not designed to manage critical childhood illness and injury in the early days of an actual event. The Department of Economic and Social Affairs within the United Nations developed 17 Sustainable Development Goals (SDGs) (7). Goal 3 is to "Ensure healthy lives and promote well-being for all at all ages" and includes the target of "end preventable deaths of newborns and children". These need to influence paediatric emergency care delivery at a system level as well as an individual level. Regional health systems need to understand and incorporate this when developing policies for emergency health care delivery. Hospitals that provide emergency care to children should optimize the environment to the best of their abilities to meet the specific needs of children.

Within individual countries or regions there can be disparities between the quality of care that is provided in high resource urban centres and community or rural hospitals, as well as specialized paediatric versus general emergency departments (8–20). Recent literature assessing paediatric emergency care from both high- and low to middle-income countries emphasizes the varying state of paediatric emergency care between countries, as well as the impact policy and sociocultural factors can have on paediatric ED usage. This expanding literature base indicates a growing interest in assessing the readiness of emergency departments to provide high quality care for children.

SECTION 2: CURRENT POLICIES/MODELS OF CARE FOR PAEDIATRIC EMERGENCY MEDICINE

A well staffed department should pool together the skills of three types of staff: a combination of (medical and nursing) skills in general paediatric medicine and general emergency medicine are required to provide optimal care. For example, pediatric staff have a strong understanding of children's physiology, anatomical, and development, as well as a holistic family-centered approach to care. Emergency medicine clinicians are proficient in rapid clinical decision-making, prioritisation of resources, stabilization and resuscitation including critical procedural skills, point of care ultrasound, and other areas which complement the care of critically ill children. Merging these aspects delivers the best emergency care for children.

Emergency systems around the world need consensus guidelines and standards regarding what clinicians should be able to do and provide, what sites should be able to deliver, and what training should be provided to deliver optimal emergency care to children. There has been work published from individual countries (21-22). It is in response to this that the IFEM Paediatric Emergency Medicine Special Interest Group exists, and developed the IFEM Paediatric Standards of Care (Version 3) [Standards-of-Care-for-Children-in-Emergency-Departments-V3-2019.pdf (ifem.cc)]. (1) These standards consolidate the best available evidence and contributions from the wide range of general emergency physicians and sub-specialist PEM physicians of IFEM from countries around the world. There are Spanish and Chinese translations of these standards, and it is freely available.

SECTION 3: RECOMMENDATIONS

For this white paper, we have summarized the content from the IFEM standards of care document in consultation with our members in all regions of the world to develop the following recommendations to improve care of children in the ED, and address the question: '*How can you optimize paediatric emergency care in your region?*'

RECOMMENDATION 1: DEVELOP POLICIES AND PROCEDURES TO SUPPORT DEFINED STANDARDS FOR PAEDIATRIC EMERGENCY CARE AT HOSPITAL AND HEALTH SYSTEM LEVELS

- Establish policies and procedures about the general assessment and management of paediatric patients in the ED, based on departmental, hospital, regional and international references and incorporate evidence-based clinical care/practice guidelines as the department matures.

- Integrate the paediatric ED with pre-hospital, primary and in-patient hospital care within the region and define clear, agreed upon patient pathways within this system. Communicate clearly to stakeholders and Emergency Medical Service (EMS) the role and capabilities of individual EDs within a regional network.
- Incorporate within health care system policies who treat children the principles of the UN Convention on the Rights of the Child (23), as well as relevant national protective legal provisions applying to children and young people.
- Establish procedures to provide immediate resuscitation, including administer CPR initially (until information is verified) unless there are unmistakable signs of death or there is a legally valid written directive stating not to initiate CPR or other forms of life saving treatment.
- Ensure emergency departments 24-hour access to specialist paediatric advice by telephone, telemedicine, internet or in person.
- Implement procedures to identify and manage specific scenarios including the adolescent child, the child experiencing child abuse or neglect, the child with injuries sustained from trauma, scenarios of Major Critical Incidents, and the scenario of a child dying despite adequate treatment. Ensure there are supportive medical, social, and legal services within their location to allow for consultation and referral to ensure appropriate care, follow-up, and safekeeping of children with all these scenarios.

RECOMMENDATION 2: PREPARE EMERGENCY DEPARTMENT WITH EQUIPMENT, SUPPLIES & MEDICATIONS SUITABLE FOR PAEDIATRIC POPULATIONS

- Appoint a lead doctor and/or nurse who act as Paediatric Emergency Care Coordinators to lead efforts in meeting the specific needs of children in mixed EDs. **This is the single most important process change to improve paediatric emergency care** (24).
- Ensure a resuscitation area is prepared at all times for initial resuscitation of a child brought in unexpectedly and establish a 'Resuscitation Team' or identified staff from within the ED or hospital.
- Provide easily accessible equipment, supplies and medications for the care of acutely ill/injured children of all ages on a 24-hour basis in a standardised and logical layout, to ensure familiarity for staff. It should also ideally match those used in allied departments (e.g. operating theatres, intensive care unit).
- Provide alterations to the emergency care environment that allow optimal delivery of paediatric emergency care such as rooms large enough to hold parents and child, and tools used to decrease anxiety in patients from strange surroundings.

RECOMMENDATION 3: ENSURE STAFF ARE AVAILABLE, ADEQUATELY TRAINED AND SUPPORTED TO CARE FOR CHILDREN

- Ensure competency of all pre-hospital responders in first aid and BLS for infants, children and adolescents and require suitable equipment for children of all ages in all EMS vehicles.
- Ensure all ED clinical staff are highly competent in providing basic paediatric life support and resuscitation until therapeutic goals of hypoxia, shock, cardiac or neurological dysfunction are resolved. Train all staff members including reception, security and other non-healthcare workers to recognize seriously ill/injured children.
- Incorporate fundamental principles of general paediatric care into training of staff in paediatric emergency care including child and family centred care within clinical practice, communication matched to the patient's stage of development, legal principles surrounding consent, confidentiality, and mental capacity for patients under the legal age of adulthood.

RECOMMENDATION 4: ESTABLISH CONTINUOUS QUALITY IMPROVEMENT AND DOCUMENTATION SYSTEMS

- Actively seek out opportunities within the paediatric ED to optimize patient outcomes and quality of care. Include paediatric patient factors and disease-specific indicators in the quality improvement plan of the ED.
- Institute a structured review process and audit cycle should be instituted early on to ensure ongoing performance improvement of all policies and procedures dealing with children.
- Adapt the design and implementation of an Emergency Department Information System (EDIS) within the overall ED organisation (processes, planning, workflow) to meet the needs of paediatric patients (e.g. prescribing alerts built in to guard against paediatric dosing errors), and to support data retrieval for the structured review process.

SECTION 4: CONCLUSION

In many countries and regions, emergency care systems already exist or are developing rapidly. As these systems develop, critical importance should be placed in understanding the specific needs required to care for critically ill and injured children. Children's needs must be incorporated within the framework of emergency care including pre-hospital care and transport services, receiving health care facilities.
Understanding children's differences ranging from anatomic, physiologic, and behavioral development is key as well as a family centered approach to care. Building awareness at each level by strengthening pediatric based knowledge, technical and procedural skills, developing guidelines and pathways that can be integrated into the education of health care providers. Guidelines for pediatric triage, trauma assessment, basic stabilization and transport should be included. Awareness of basic equipment and supplies, provider competencies, and staffing needs should be addressed. These can be converted into tools to assess readiness for paediatric patients (25-34).

Advanced training in pediatric emergency care needs to expand. Training programs that are built to identify healthcare gaps in delivering high quality pediatric care, which can be integrated into existing educational systems and that can bring scholarly activity and research further advancing pediatric based knowledge and skills, and ideally eventually bring systematic change to current health care approach (35).

Acknowledging that research in pediatric emergency medicine is difficult to produce at a single site, the involvement of Pediatric Emergency Research Networks (eg PERN). PERN and PEMSIG are well positioned to support research activities and quality improvement globally. (36-37) The IFEM PEMSIG numbers more than 100 people, all highly committed to high-quality care for children who experience an emergency illness or injury. The group is very happy to support any enquiry for help and advice. Please contact admin@ifem.cc if you would like to know more.

AUTHORS (ALPHABETICAL) AND REFERENCES:

Principal authors:
Alyssa Abo, Simon Chu, Rodrick Lim, Colin Powell, Victoria Sanderson

Reviewing authors:
Titiosi Adegbija, Franz Babl, Isabel Barata, Meredith Borland, Silvia Bressan, Liliana Caceres, Simon Craig, Randy Cordle, Ffion Davies, Stephanie Doniger, Mohamed El Sherbiny, Camillo E Gutiérrez, Radhika Raman, Robert Schafermeyer, John R Tsiperau, Rahim Valani, Patrick Van de Voorde, Adriana Yock-Corrales

Correspondence Author: Dr Simon Chu. Email: simon.chu@sa.gov.au

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