

Services for Children in Emergency Departments

April 2007

Report of the Intercollegiate Committee for
Services for Children in Emergency Departments

Association of Paediatric Emergency Medicine
British Association of Emergency Medicine
British Association of Paediatric Surgeons
College of Emergency Medicine
Joint Royal Colleges Ambulance Liaison Committee
Royal College of General Practitioners
Royal College of Nursing
Royal College of Paediatrics and Child Health



Services for Children in Emergency Departments

April 2007

Report of the Intercollegiate Committee for Services for Children in Emergency Departments

Representative bodies:

Association of Paediatric Emergency Medicine
British Association of Emergency Medicine
British Association of Paediatric Surgeons
College of Emergency Medicine
Joint Royal Colleges Ambulance Liaison Committee
Royal College of General Practitioners
Royal College of Nursing
Royal College of Paediatrics and Child Health



Royal College of Paediatrics and Child Health

www.rcpch.ac.uk

This document is available electronically at
<http://www.rcpch.ac.uk/Health-Services/Emergency-Care>

CONTENTS

Foreword.....	7
Terms of reference and membership of the committee.....	8
Executive Summary: Complete list of recommendations.....	9
1. Purpose and scope of this document.....	16
2. Current challenges facing paediatric emergency medicine.....	18
3. Service design: an integrated urgent care system.....	20
Reconfiguration of local services.....	20
Provision of urgent care.....	21
Liasion with General Practitioners.....	23
Liasion with ambulance services.....	23
Follow-up in community or ambulatory care settings.....	24
4. Child and family-friendly care in Emergency Departments.....	26
5. Initial assessment of sick children.....	28
6. Treating the sick child.....	29
Airway, anaesthetic and critical care skills.....	29
Surgical support.....	31
Paediatric support.....	31
Safe discharge from Emergency Departments.....	32
7. Staffing and training issues.....	34
Nursing skills.....	34
Medical skills.....	35
8. Training of doctors sub-specialising in paediatric emergency medicine..	37
Paediatric EM with a CCT in EM.....	37
Paediatric EM with a CCT in paediatrics.....	38
Recognition of an ED for paediatric EM sub-specialty training.....	38
9. Child protection in Emergency Departments: safeguarding children.....	40
10. Major incidents involving children.....	42
11. Death of a child.....	43

12. Information systems and data analysis.....	44
Information systems.....	44
Injury surveillance.....	45
Research in paediatric emergency medicine.....	45
References.....	47
Appendix 1:	
Abbreviations.....	50
Appendix 2:	
An example of a tiered model of emergency care for children and young people.....	51
Appendix 3:	
Drugs and equipment for resuscitation and stabilisation areas.....	52

Foreword

Around 3.5 million children per year attend Emergency Departments (EDs) in the UK. This equates to around 28% of the child population each year. Children usually constitute 25-30% of all ED attendances. For any hospital, this represents three times the number of children attending paediatric outpatient clinics. About 90% of the children attending an ED will be seen and discharged without involvement of any in-patient team. *Accident and Emergency Services for Children*¹ was a document written in 1999 by representatives of several Royal Colleges and national organisations, that made recommendations on the services and skills which EDs should provide in order to safeguard the care of children.

The original “red book”, as it became known, was widely used in the UK to improve the care of children in emergency settings. Since 1999, improvements have been achieved in the majority of EDs, particularly in terms of facilities. The Intercollegiate Committee for Services for Children in Emergency Departments has remained active since its inception in 1999. It sits within the committee structure of the Royal College of Paediatrics and Child Health (RCPCH). It has published two further documents since 1999, *Children’s Attendance at a Minor Injury/Illness Service*² and *The Designated Liaison Paediatrician*³.

Despite improvement in many areas, some of the standards recommended for implementation by 2004 have failed to be fully implemented in many EDs. Particular difficulties have been experienced in recruiting sufficient numbers of medical and nursing staff with paediatric training. A recent Healthcare Commission review, *Improvement Review into Services for Children in Hospital*⁴ rated 28% of acute Trusts in England as “weak” for emergency services for children. A further 46% scored “fair”. The availability of trained staff was a large factor in many cases.

This second edition of the 1999 guidance brings the recommendations up to date with current practice, taking account of an evolving political climate and an inexorable rise in children’s attendances to EDs. It has been renamed *Services for Children in Emergency Departments* in accordance with the change in name of the speciality of Emergency Medicine (EM). The committee hopes that readers find these recommendations practical, helpful and realistic.

Dr Ffion Davies, FRCPCH, FCEM

Chair, Intercollegiate Committee for Services for Children in Emergency Departments

April 2007

Terms of reference of the committee

- a) To act as an expert advisory group on the emergency care of children.
- b) To influence policy development proactively at national level.
- c) To respond reactively to consultation documents relevant to the emergency care of children.
- d) To support practitioners and inspection agencies in the improvement of services by developing standards and measurements of those standards.
- e) To identify and disseminate best practice.

Membership of the committee

Dr Ffion Davies	Chair
Dr Alison Smith	Association of Paediatric Emergency Medicine
Dr Martin Smith	British Association of Emergency Medicine
Mr Stephen Donnell	British Association of Paediatric Surgeons
Dr John Bache	College of Emergency Medicine
Dr Fiona Jewkes	Joint Royal Colleges Ambulance Liaison Committee
Dr Tina Ambury	Royal College of General Practitioners
Ms Janet Youd	Royal College of Nursing
Dr Tina Sajjanhar	Royal College of Paediatrics and Child Health
Dr Ian Maconochie	Royal College of Paediatrics and Child Health
Dr Kathleen Berry	Royal College of Paediatrics and Child Health
Dr Simon Lenton	Royal College of Paediatrics and Child Health

Co-opted advisors

Prof Matthew Cooke	Consultant in Emergency Medicine and Advisor to DH (England) for Emergency Care
Dr Edward Wozniak	Consultant in Paediatrics and Advisor to DH (England) for Children and Young People

Executive Summary

Complete list of recommendations

Recommendations	Action	Page No.
3. Service design: an integrated urgent care system		24-25
1. All front-line staff delivering urgent care to children must be competent in the basic skills required for safe practice, in whichever setting they work.	P	
2. Commissioners and providers must work together to provide safe urgent care for children in a geographical network, taking local needs into account.	CP	
3. If paediatric on-site support is lost, the paediatric skills of the ED staff must be enhanced, or additional paediatrically-trained staff employed.	CP	
4. In the absence of on-site, 24-hour paediatric services, development of short-stay or observation units should be considered as an alternative to transfer of low-risk children to the main paediatric centre.	CP	
5. The skills of the whole network should be utilised with a flexible approach to traditional professional, organisational and/or managerial boundaries.	C	
6. Where service reconfiguration takes place, commissioners and providers should ensure that the safety and efficiency of the new arrangements are audited, and clinical risks are fully assessed.	CP	
7. In order to smooth the interface between organisations, Trusts should encourage shared or rotational posts, or regular secondments to the acute unit.	P	
8. Notification of the child's attendance at any urgent care setting should be made in a timely way to their primary care team.	P	

Services for Children in Emergency Departments, Report of the Intercollegiate Committee for Services for Children in Emergency Departments, published by the Royal College of Paediatrics and Child Health, 2007

Definitions: C = Commissioners P = Providers CP = both Commissioners and Providers

Complete list of recommendations

Recommendations	Action	Page No.
9. The primary care team should have systems in place to collate attendance data from different urgent care providers.	CP	
10. GPs should ensure their competence and confidence in managing acutely ill children is maintained.	P	
11. Ambulance services should examine their practice for children against national guidelines, standardise their paediatric equipment, and ensure their staff have basic paediatric competencies.	P	
12. EDs should prevent unnecessary hospital admissions by being aware of alternative options, and developing care pathways for common conditions with community and paediatric colleagues.	P	
4. Child and family-friendly care in Emergency Departments		27
1. EDs must accommodate the needs of children and accompanying families as far as is reasonably possible.	P	
2. As well as audio-visual separation from adults, consideration must be given to security issues, availability of food and drink, and breast-feeding areas, and hygienic, safe play facilities.	P	
3. At least one clinical cubicle or trolley space for every 5,000 annual child attendances should be dedicated to children.	P	
4. Teenagers should have access to quieter waiting and treatment areas, and age-appropriate toys, music or films.	P	
5. EDs seeing more than 16,000 children per year should employ play specialists at peak times.	P	
6. Comments should be sought from children to improve services or facilities.	P	

Services for Children in Emergency Departments, Report of the Intercollegiate Committee for Services for Children in Emergency Departments, published by the Royal College of Paediatrics and Child Health, 2007

Definitions: C = Commissioners P = Providers CP = both Commissioners and Providers

Complete list of recommendations

Recommendations	Action	Page No.
5. Initial assessment of children		28
1. All children attending EDs must be visually assessed within minutes of arrival, to identify an unresponsive or critically ill child.	P	
2. A brief clinical assessment should occur within 15 minutes of arrival.	P	
3. A system of prioritisation for full assessment must be in place if the waiting time exceeds 15 mins.	P	
4. Initial assessment must include a pain score when appropriate.	P	
5. Registration details must include specific additional information (e.g. health visitor, school, accompanying adult).	CP	
6. Treating the sick child		33
1. All facilities receiving sick or injured children must be equipped with an appropriate range of drugs and equipment.	P	
2. All staff working in facilities where children present must be trained in paediatric basic life support. ED nursing staff should be PILS/PLS or equivalent trained. Senior trainees and consultants in EM, paediatrics and anaesthetics dealing with acutely unwell children should be APLS/EPLS trained.	P	
3. Urgent help must be available for advanced airway management.	CP	
4. Paediatric anaesthesia should only be carried out by competent staff.	P	
5. All hospitals receiving acutely ill or injured children must have the facilities and staff required to establish high dependency care, and intensive level care for airway and respiratory support.	CP	

Services for Children in Emergency Departments, Report of the Intercollegiate Committee for Services for Children in Emergency Departments, published by the Royal College of Paediatrics and Child Health, 2007

Definitions: C = Commissioners P = Providers CP = both Commissioners and Providers

Complete list of recommendations

Recommendations	Action	Page No.
6. Regional networks must be in place to develop protocols to stabilise and transfer children to a PICU.	C	
7. Regional networks must be in place to provide early advice and transfer for trauma	C	
8. All EDs should have a named paediatrician with designated responsibility for ED liaison.	P	
9. All paediatric departments supporting an on-site ED seeing more than 16,000 children per annum should aim to appoint a paediatrician with sub-specialty training in paediatric EM.	CP	
10. Systems must be in place to ensure safe discharge of children, including advice to families on when and where to access further care if necessary.	P	
11. All urgent care attendances in children must be notified to the primary care team: ideally both the GP and the health visitor/school nurse.	P	
7. Staffing and training issues		36
1. Nurses working in emergency care settings in which children are seen require at least basic competence in both emergency nursing skills and in the care of children.	P	
2. All EDs receiving children should have an RN [Children] lead nurse for the care of children and young people and a lead nurse responsible for safeguarding children.	P	
3. Acute Trusts should employ sufficient RN [Children] nurses to provide one per shift in EDs receiving children.	P	
4. Acute Trusts should facilitate additional training in paediatric skills amongst the nursing staff of the ED, and have a long-term strategy for recruitment and retention of paediatrically-skilled nurses.	P	

Services for Children in Emergency Departments, Report of the Intercollegiate Committee for Services for Children in Emergency Departments, published by the Royal College of Paediatrics and Child Health, 2007

Definitions: C = Commissioners P = Providers CP = both Commissioners and Providers

Complete list of recommendations

Recommendations	Action	Page No.
5. All ED nurses and doctors should have the same basic competencies in caring for children as they do for adults, e.g. recognition of serious illness, basic life support, pain assessment, and identification of vulnerable patients.	P	
6. In EDs where nurses work autonomously to see and treat patients (usually called ENPs), these nurses must have had specific education in the anatomical, physiological and psychological differences of children.	P	
7. ED doctors and nurses should be familiar with departmental guidelines and know when and how to access more senior or specialist advice promptly for children.	P	
8. Training of doctors sub-specialising in paediatric emergency medicine		38-39
1. EDs seeing more than 16,000 children per annum should employ a consultant with sub-specialty training in paediatric EM.	CP	
2. Hospital paediatric departments with an on-site ED seeing more than 16,000 children per annum should aim to appoint a paediatrician with sub-specialty training in paediatric EM.	CP	
3. The appointment of consultants from both backgrounds is an advantage, and is essential for larger EDs.	CP	
9. Child protection in Emergency Departments: safeguarding children		41
1. All EDs should follow the recommendations of the Laming enquiry.	P	
2. All ED staff (clinical and non-clinical) must receive training in safeguarding children appropriate to their posts.	P	

Services for Children in Emergency Departments, Report of the Intercollegiate Committee for Services for Children in Emergency Departments, published by the Royal College of Paediatrics and Child Health, 2007

Definitions: C = Commissioners P = Providers CP = both Commissioners and Providers

Complete list of recommendations

Recommendations	Action	Page No.
3. All EDs should nominate a lead consultant and lead nurse responsible for safeguarding children within the ED.	P	
4. All EDs must have guidelines for safeguarding children, specific to the ED.	P	
5. All EDs must be able to access child protection advice 24 hours a day, from a paediatrician and social services. Direct or indirect access to the child protection register should be available.	CP	
6. Systems must be in place to identify children who attend frequently.	P	
7. The child's primary care team, including GP and health visitor/school nurse, should be informed of each attendance.	P	
10. Major incidents involving children		42
1. All EDs must ensure children are included in the Trust's major incident plan.	P	
2. In establishing a local network of hospitals and other services, children should be specifically considered.	C	
11. Death of a child		43
1. The recommendations of the Kennedy Report should be adopted.	P	
2. Parents witnessing resuscitation must be supported by a member of staff.	P	
3. A consultant in paediatrics or EM should receive early information about the death of a child.	P	
4. One to three months after the death, the parents should be offered an appointment to see a relevant consultant.	P	

Services for Children in Emergency Departments, Report of the Intercollegiate Committee for Services for Children in Emergency Departments, published by the Royal College of Paediatrics and Child Health, 2007

Definitions: C = Commissioners P = Providers CP = both Commissioners and Providers

Complete list of recommendations

Recommendations	Action	Page No.
12. Information systems and data analysis		46
1. The needs of patients, clinicians, managers, commissioners and regulators need to be defined, and used to inform the development of ED information systems.	CP	
2. ED staff should participate in the national information technology agenda, and engage proactively with local service providers to design local systems.	P	
3. There should be a minimum dataset, which incorporates the specific needs of children.	C	
4. ED information systems should link up with other health information systems, so that data on all local health service contacts are available within the ED.	C	
5. A child's attendance at an ED or Urgent Care Centre should be notified to their primary health care team (ideally both GP and health visitor or school nurse).	CP	
6. Surveillance of local patterns of injury should be possible.	P	
7. Hospitals are encouraged to subscribe to the Trauma Audit and Research Network (TARN), to assess their own outcomes for patients with major trauma.	P	
8. Research is a core element of paediatric EM. EDs should utilise the resources of recently developed research networks to participate in and plan research projects.	P	

Services for Children in Emergency Departments, Report of the Intercollegiate Committee for Services for Children in Emergency Departments, published by the Royal College of Paediatrics and Child Health, 2007

Definitions: C = Commissioners P = Providers CP = both Commissioners and Providers

1. Purpose and scope of this document

The purpose and scope of this document is to improve the experience and outcomes of children and families in Emergency Departments (EDs). However, this care should not be seen in isolation, but as part of a network of services providing “urgent care”. Care before and after the emergency visit is also considered. While the remit of this document is centred on EDs, it would be impossible, and inappropriate, to ignore issues in the patient’s journey that involve other emergency settings in the community, and the ambulance service.

The word “children” should be taken as meaning “children and young people”. The term “child” refers to infants, children and young people up to the age of 16 years. Different EDs will have different upper age limits for determining when young people are serviced by adult-based services. Many of the recommendations in this document apply to children up to the age of 18 years.

All the principles of this document apply to the NHS in Scotland, Wales and Northern Ireland but for sake of ease the organisations described are in NHS (England) terminology (e.g. NHS Trusts, Strategic Health Authorities, Local Safeguarding Children Boards). Acute NHS Trusts in England are providers of emergency care. Primary Care Trusts may be providers or commissioners. It is hoped that the meaning is clear from the context. Readers in Scotland should be aware of the recent document, *Emergency Care Framework for Children and Young People in Scotland*⁵.

This report seeks to inform the following:

- **Policymakers:**
 - Departments of Health (for services to children and young people, emergency and urgent care, and primary care branches)

- **Commissioners of emergency services and urgent care:**
 - Primary Care Trusts (PCTs)
 - Practice Based Commissioners
 - Children’s Trusts
 - Workforce Development

- **Providers of services, in particular Chief Executives, Medical Directors and clinicians in:**
 - Acute Trusts
 - Ambulance Trusts
 - Walk-in centres, out-of-hours primary care centres, minor illness and injury centres

- **Regulators of services:**
 - The Healthcare Commission
 - The National Audit Office
 - Professional organisations

There is a glossary of abbreviations in Appendix 1.

2. Current challenges facing paediatric emergency medicine

Much has changed in EDs since the first edition of this document was published in 1999, when there were thirty-two recommendations, which represented the minimum standard for the delivery of care to children.

A survey in 2005⁶ showed that the key areas of improvement have been in the provision of facilities to allow audio-visual separation of children from adults (64% most areas, 94% waiting areas), the use of a paediatric pain score at triage (76%), the provision of a resuscitation area for children (78%), employment of a senior nurse to lead on paediatric issues (72%), and employment of a designated liaison paediatrician (78%).

There has been less success in the provision of a play specialist at peak times (52%), ability to maintain level 2 intensive care (15%), provision of at least one children's trained nurse on duty at all times (32%), having a consultant trained in paediatric EM (30% of EDs seeing over 18,000 children annually) and provision for children in the hospital major incident plan (11%). Similar findings were made in the Healthcare Commission's *Acute Hospitals Portfolio 2005*⁷ and *Improvement Review into Services for Children in Hospital 2006*⁴.

For EDs to be training departments for paediatric EM, the College of Emergency Medicine (CEM) recommends an annual attendance of at least 16,000 children. For this reason, this edition recommends a revised cut-off of 16,000 children per annum as defining a medium-sized ED.

Many other things have changed since 1999. Deaths from trauma and Sudden Infant Death Syndrome (SIDS) have decreased. Advanced Paediatric Life Support (APLS) and equivalent courses are now prevalent. In EDs the most noticeable change is the increased efficiency of throughput that performance targets have achieved. Children now spend less time in better designed, and less crowded environments. Since 1999 paediatric attendances to EDs have increased annually. Some departments have seen an increase of 20% in the last two years. Admissions to hospital have also increased, while the average length of stay has decreased. The increase in ED attendances shows no sign of abating, as the expectations of families continue to rise. Worried parents want help quickly, but the availability of General Practitioners (GPs) has decreased due to the change in out-of-hours provision since 2004.

As a result, other sources of help are now being accessed. Current government policy aims to provide access to urgent care closer to patients' homes, in designated urgent care centres (UCCs), and to transfer the care historically delivered in hospitals to out-patient or community care^{8,9}. Some

EDs and paediatric departments are being closed, while there is a proliferation of less traditional venues for seeing children with acute conditions, such as walk-in centres, urgent or primary care centres, minor injury units, etc. The NHS Direct advice line was introduced in 2000 and is now linked into emergency call-handling centres.

Since 1999, the front-line workforce in the acute setting has changed. The speciality of Emergency Medicine (EM) has evolved, with an expansion of fully trained senior doctors, and greater supervision of doctors in training. Training of doctors in EM has, for a number of years, included assessment of competencies in managing acutely ill and injured children. Consultants with a special interest in paediatric EM are gradually being appointed to new posts, including a growth in the number of paediatricians trained in paediatric EM. Similarly there is a trend towards improved training in paediatric skills and greater standardisation in the acute management of children by the ambulance services.

This front-line workforce for urgent care now also comprises nurses with expanded skills, Emergency Nurse Practitioners (ENPs), Emergency Care Practitioners (ECPs), and GPs employed on a shift basis to staff out-of-hours centres. This diversity in the many access points for parents with sick children risks variation in clinical care, as the organisations responsible for these centres go beyond traditional boundaries (geographical, political and professional) of service provision and workforce training. There are challenging times ahead in ensuring competency for front-line staff in differentiating sick from well children, and looking after sick children.

3. Service design: an integrated urgent care system

It is essential that all front-line staff delivering urgent care to children are competent in the basic skills required for safe practice, in whichever setting they work (the home, the street, the UCC or the ED). These skills are usefully described in the document *Emergency Care Framework for Children and Young People in Scotland*⁵.

However, it is not possible for every ED or hospital to offer full paediatric services including in-patient services or critical care^{5,10}.

Reconfiguration of local services

The aim of providing expert help as early as possible in a child's illness, in order to improve clinical outcome, has to be balanced by the apparently opposing aim of providing care as close as possible to home^{8,9}. This can only be achieved if commissioners and providers work together to clarify the roles of different access points, define patients who should be referred to larger, more specialist centres, and identify staff able to take these decisions.

The Scottish Executive has described a tiered model of emergency care for children and young people⁵, which is reproduced at Appendix 2. The DH (England)¹⁰ is proposing that very sick or seriously injured patients are taken directly to larger centres.

It would be naïve to propose a single solution that would be fit for purpose and achievable throughout the UK. The committee therefore recommends that commissioners consider the best interests of children in the populations they serve, in consultation with local PCTs, ambulance Trusts, acute Trusts, Patient Advice and Liaison Services (PALS), the public (including parents and carers) and neighbouring acute Trusts, taking into account the geography, transport, demography and workforce characteristics of their local areas. Special arrangements must be made for departments in geographically isolated areas.

Whenever services are provided at facilities on a part-time basis, Trusts and Health Authorities must ensure the public are fully informed of the opening hours and know how to access alternative care in a safe and timely way.

The majority of children have minor injuries or illness and can safely be treated close to home. If no appropriate local facilities are available, large numbers of families will be faced with long journeys. Ambulance services may need to provide for an increased number of journeys due to inter-hospital transfers.

If EDs in the UK lose on-site, 24-hour paediatric services, commissioners may plan to divert paediatric attendances to other centres. However, EDs will continue to receive very sick children even in centres where “bypass” arrangements have been made with the ambulance service, because parents with very sick children (particularly babies and infants) will attend the nearest facility.

If paediatric on-site support is lost, the paediatric skills of the ED staff must be enhanced. This applies particularly to distinguishing minor from more serious illness, life support skills, stabilisation and transfer skills, and child protection awareness. These skills are covered in more detail in Section 6.

Acute Trusts in this situation should consider the employment of senior paediatrically-trained doctors and nurses, for example registrars in EM (ST4, or equivalent experience in a non-training grade), consultants with sub-specialty training in paediatric EM (see Section 8), sessions from an appropriately trained consultant paediatrician, and/or Paediatric Nurse Practitioners (PNPs). Anaesthetic and surgical competencies must be safeguarded (see Section 6).

Where paediatric advice is not available on site, a balance has to be struck between referral to a paediatric centre for assessment and/or admission, or later out-patient management. The development of an observation area can assist in this decision and avoid unnecessary transfers. Such short-stay units can successfully replace in-patient units, and in some areas have proved popular with families^{11, 12, 13, 14}. Opening hours should reflect attendance patterns and those of surrounding units. Collaboration between senior doctors and nurses in the ED and the in-patient children’s services ensures optimum functioning of such units.

The development of managed clinical networks, community children’s nursing teams^{4, 8, 9}, a flexible approach to traditional professional, organisational and managerial boundaries^{9, 15}, and an emphasis on the competencies of the ED team^{16, 17, 18}, are key elements in designing a safe service. Cross-site or hospital/community arrangements should be regularly reviewed, to ensure that the service is safe, and to identify issues for further improvement.

When service reconfiguration takes place, commissioners and providers should ensure that the safety and efficiency of the new arrangements are audited, and clinical risks are fully assessed.

Provision of urgent care

Traditional provision of General Practice has changed considerably since the introduction of the new General Medical Services (nGMS) contract in April 2004, with a consequent impact on paediatric attendances to EDs. A new strategy for urgent care is currently being developed by the DH (England).

Various sites for provision of urgent care in the community have proliferated. These sites have numerous names: NHS walk-in centres, minor illness and injury centres, etc. For the purposes of this document all such centres will be described as Urgent Care Centres (UCCs).

The GP is in the optimum position to assess the impact of illness on the family, with their background knowledge of the context of the family's health, their social situation and their ability to cope with illness.

Front-line children's care should be predominantly provided in two settings: primary care (the family's own General Practice in-hours, or UCCs out-of-hours) and EDs. Staff at UCCs should be aware of their limitations in not knowing the full context of the family. ED staff are in a similar position. Therefore consulting with, or referring back to the GP may be appropriate.

Children with illnesses are more likely to be taken to UCCs or GP surgeries, and those with injuries to EDs. However there is much overlap. Both General Practices and UCCs will see potentially seriously ill children, even if "telephone triage" is utilised first. Telephone triage is difficult and risky for children, especially the younger child.

UCCs and EDs need access to paediatric medical advice, and observation / assessment units. The baseline clinical competencies of staff in UCCs (GPs, nursing staff, ENPs and ECPs) must be the same as those in EDs. These skills should include recognition of the well and the sick child, and recognition of child protection concerns.

Due to limitations on the availability of competent paediatric staff, not all these centres will be able to provide care for children. Co-location of UCCs and EDs often carries a number of benefits for children, especially if a period of observation would be beneficial. If the UCC is not adjacent to an ED, basic first aid, basic life support, paediatric resuscitation equipment etc, are required (see Section 6). The DH (England) has commissioned an interactive DVD *Spotting the Sick Child*¹⁹, which is targeted at such professionals.

A whole-systems approach to the provision of urgent care should be taken to ensure a smooth patient journey. Shared protocols, shared training, staff rotations, and quality improvement programmes should operate across the whole geographical area covered by the network. Clinical guidelines and referral pathways should be consistent. The best way of achieving harmonisation of skills and referral patterns is by developing link posts between these centres and the acute Trust. Rotation of staff is the best way of achieving this. Clinical Directors of children's services in acute Trusts should develop ways to make this possible. Where this is not currently possible, regular secondments are an alternative. A useful document is *Children's Attendance at a Minor Injury/Illness Service*². All such centres must ensure a suitable physical environment for children (see Section 4).

Notification of the child's attendance to the primary care team (GP and health visitor or school nurse) should take place, as recommended in *Working Together to Safeguard Children*²⁰. Minor illness/injury units and UCCs should have ways of identifying frequent attendances, and should ensure that the primary care team is notified.

Liaison with General Practitioners

The child's GP should be notified of any attendance to another health care provider in a timely manner²⁰. Different urgent care attendances can form pieces of a jigsaw from which an overall pattern emerges: for example, deterioration of an illness, inability of the family to cope, and child protection concerns. GPs should have systems in place to collate information from different sources.

As urgent care is increasingly provided by other groups of staff, GPs will have reduced exposure to sick children. They should take steps to ensure that their competence and confidence in managing acute paediatric cases is maintained, using the Royal College of General Practitioners (RCGP) competencies.

Liaison with ambulance services

Emergency paediatric care may start with the ambulance service, although less frequently than for adult emergency care, as critically sick children are often brought to the ED by car. It is estimated that 5-10% of 999 calls will be to a child, and only a small proportion of these will actually have a condition requiring urgent intervention²¹. Skill maintenance may therefore be difficult. The ED lead consultant for paediatrics should be familiar with the local ambulance training and equipment for paediatrics, and give advice where possible, to help ambulance personnel maintain confidence in their skills.

There should be uniformity in the provision of drugs and equipment suitable for children across all ambulance Trusts. All ambulance services should comply with the Joint Royal Colleges Ambulance Liaison Committee (JRCALC) guidelines for clinical practice²². Considerable improvement will be necessary from the current situation²³. All immediate care practitioners must be competent in caring for sick and injured children, whether they are ambulance technicians, paramedics or ECPs. For those personnel working in urgent care settings, the PCT should ensure that competencies are appropriate and consistent across the local network when defining the boundaries of paediatric practice.

*Taking Healthcare to the Patient*²⁴ has emphasised the importance of reducing hospital admissions and treating patients at the point of contact. The role of the ECP is to enable the

patient to have treatment or advice at home, avoiding attendance at EDs. While this policy is in line with the *National Service Framework (NSF) for Children*⁸, it is essential that ECPs are competent in assessment and treatment of children. When ECPs attend children and do not bring the child to hospital, there should be a system in place to notify the GP and/or health visitor of the consultation, in the same way as for attendances at an ED.

Follow-up in community or ambulatory care settings

There is now an increased emphasis on community-based health care delivery for all, including children. Ambulatory care refers to the management of an illness outside traditional hospital settings. The greater scope of community services following ED care is welcome. Hospital outreach teams, out-patient or day-case care may be available. Children may be discharged from EDs to the care of community children's nurses, for wound dressings, to check their medical condition is improving (asthma, bronchiolitis, gastroenteritis etc), or for monitoring and managing acute exacerbations of long-term conditions.

ED staff should be aware of the services available locally for follow-up of children, to help avoid admissions, and make care more family-friendly. ED staff should liaise with paediatric colleagues to construct ambulatory care pathways for suitable conditions. Joint referral protocols should be agreed and their use audited for outcome and safety.

Recommendations

1. All front-line staff delivering urgent care to children must be competent in the basic skills required for safe practice, in whichever setting they work.
2. Commissioners and providers must work together to provide safe urgent care for children in a geographical network, taking local needs into account.
3. If paediatric on-site support is lost, the paediatric skills of the ED staff must be enhanced, or additional paediatrically-trained staff employed.
4. In the absence of on-site, 24-hour paediatric services, development of short-stay or observation units should be considered as an alternative to transfer of low-risk children to the main paediatric centre.
5. The skills of the whole network should be utilised with a flexible approach to traditional professional, organisational and/or managerial boundaries.
6. Where service reconfiguration takes place, commissioners and providers should ensure that the safety and efficiency of the new arrangements are audited, and clinical risks are fully assessed.
7. In order to smooth the interface between organisations, Trusts should encourage shared or rotational posts, or regular secondments to the acute unit.

8. Notification of the child's attendance at any urgent care setting should be made in a timely way to their primary care team.
9. The primary care team should have systems in place to collate attendance data from different urgent care providers.
10. GPs should ensure their competence and confidence in managing acutely ill children is maintained.
11. Ambulance services should examine their practice for children against national guidelines, standardise their paediatric equipment, and ensure their staff have basic paediatric competencies.
12. EDs should prevent unnecessary hospital admissions by being aware of alternative options, and developing care pathways for common conditions with community and paediatric colleagues.

4. Child and family-friendly care in Emergency Departments

All EDs accepting children should consider the needs of the child, and accompanying parents and siblings. All grades of staff should be able to, and should aim to, communicate with children of all ages at an appropriate level. Children like to be involved in discussions and decisions, and can be very perceptive.

Parents will generally be anxious, and must have an opportunity to share their concerns and questions. Families will often be juggling priorities such as the care of other children, and may have practical needs such as food and drink for the children, or breast-feeding, nappy-changing, and bottle-warming facilities if they have left home in a rush.

Useful recommendations on the environment can be found in the NHS Estates *HBN 22: Accident and Emergency Facilities for Adults and Children*²⁵. In general, children's treatment areas require more space per patient than adult areas, for medical equipment, floor space for the child, toys, and space for family members. Children usually prefer being in a larger waiting room with more space, than being in a cubicle.

The ambience and furniture of the children's area should be child-friendly; local charities, donors or media campaigns often assist with this. Murals, mobiles, posters and colourful decoration help allay anxiety and make clinical assessment and treatments much easier for all concerned.

Wherever possible, consideration should be made for older age groups. Teenagers may prefer quieter, more private, surroundings. Provision of appropriate DVDs, CDs or electronic toys for this age group is as important as age-appropriate toys for younger children. EDs should use the opportunity to offer wide-ranging advice for teenagers' wellbeing. Connexions is a useful source of advice for drugs, alcohol, family problems and health²⁶.

Ideally, children should be provided with waiting and treatment areas that are audio-visually separated from the potential stress caused by adult patients. Although this is not possible at all times, every effort must be made to find a reasonable compromise.

Children's areas should be monitored securely and zoned off, to protect children from harm. Toys and books must comply with health and safety regulations, and the hospital's play specialists or children's wards can provide appropriate advice.

In addition to these basic elements, EDs treating more than 16,000 children per year should have:

- a waiting area dedicated to children
- provision of facilities for children of all age groups
- one or more child-friendly clinical cubicles or trolley spaces per 5,000 annual child attendances, some with solid walls
- a route to the imaging department which avoids other areas of the ED if possible
- an area suitable for breast-feeding and nappy-changing
- a play specialist to cover peak times, including weekends

The NSF for Children⁸ states that, “Play is an essential part of the services provided to children in hospital”. In smaller departments this service may be shared with in-patient services. Larger EDs should recruit play specialists in sufficient numbers to cover peak times. Other departments should at least link with the children’s department play specialists to gain advice on play and play materials. The role of a play specialist in the ED includes:

- providing distraction therapy for potentially distressing procedures
- enhancing nursing and medical skills to involve play in the management of procedures in children
- maintenance of a child-centred environment, including advising on safe and appropriate toys and facilities
- supervision of play in the department

However EDs are configured, improvements can always be made by listening to the views of the children themselves. Surveying children at the end of their visit can yield informative feedback, and prompt changes which can often be very simple.

Recommendations

1. EDs must accommodate the needs of children and accompanying families as far as is reasonably possible.
2. As well as audio-visual separation from adults, consideration must be given to security issues, availability of food and drink, and breast-feeding areas, and hygienic, safe play facilities.
3. At least one clinical cubicle or trolley space for every 5,000 annual child attendances should be dedicated to children.
4. Teenagers should have access to quieter waiting and treatment areas, and age-appropriate toys, music or films.
5. EDs seeing more than 16,000 children per year should employ play specialists at peak times.
6. Comments should be sought from children to improve services or facilities.

5. Initial assessment of sick children

Multiple re-assessments are best avoided. The receiving area of the ED should not be unattended for more than a short period, as critically ill children are often brought in by car, rather than by ambulance. All new arrivals must be greeted and not kept waiting out of sight, so that an unresponsive or critically ill child will be identified immediately.

If the waiting time for full clinical assessment exceeds 15 minutes, an interim, brief assessment by a competent and appropriately trained nurse or doctor should take place. This assessment should identify serious illness or injury, using a standardised system. The Manchester Triage System is one such guide²⁷. Requirements for analgesia should be assessed at this stage, using an appropriate pain score, and treatment of pain delivered within 20 minutes²⁸. Priorities for further treatment should be identified, and first aid treatments (such as dressings and splintage) applied. The same principles of assessment apply to urgent care settings.

Registration details should contain information important for child attendances, as described in Section 12.

Recommendations

1. All children attending EDs must be visually assessed within minutes of arrival, to identify an unresponsive or critically ill child.
2. A brief clinical assessment should occur within 15 minutes of arrival.
3. A system of prioritisation for full assessment must be in place if the waiting time exceeds 15 minutes.
4. Initial assessment must include a pain score when appropriate.
5. Registration details must include specific additional information (e.g. health visitor, school, accompanying adult).

6. Treating the sick child

It is incumbent upon individuals, the ED team, and the employing Trust to ensure any child is reliably cared for by staff with the necessary competencies, at any time of day.

Airway, anaesthetic and critical care skills

Rapid airway management by competent practitioners is essential in EDs. ED staff should liaise with their anaesthetic colleagues (doctors and Operating Department Practitioners (ODPs)) to ensure that an adequate range of equipment and drugs are readily available, familiar to all personnel, and regularly checked. Age and weight-based calculating tools, such as emergency charts or tapes, should be available to assist in the selection of equipment and drug doses. A useful checklist of equipment for areas receiving acutely unwell children is provided in Appendix 3²⁹.

EM, anaesthetic and senior paediatric trainees and consultants should be competent to provider level in Advanced Paediatric Life Support (APLS), European Paediatric Life Support (EPLS) or equivalent, if they deal with acutely unwell children. Nursing staff should be trained to at least Paediatric Intermediate Life Support (PILS) or Paediatric Life Support (PLS) level. Medical and nursing staff should be familiar with the principles of advanced airway support, and induction and maintenance of anaesthesia, and should also be able to assist advanced practitioners competently when required.

The Healthcare Commission recently found in hospitals in England, that 5% of EDs had insufficient cover for serious paediatric emergencies in the daytime, and 16% out of hours⁴.

Children's wards should be deemed safe places for the initial reception of emergency admissions only if they have an appropriately equipped and staffed emergency area for reception, triage and resuscitation.

Airway skills: basic and advanced

Basic airway skills may be urgently required in any ED or UCC, because parents of extremely sick infants and children often transport themselves to the nearest facility without calling an ambulance. Receiving units should ensure that staff on duty at any time have the generic skills required to recognise the child who needs, or is likely to need, airway or critical care skills. Staff must be able to institute immediate basic airway management.

The lead nurse and consultant should ensure staff are taught, assessed and maintain competence in basic airway skills. These skills include:

- assessment of patency
- use of supplemental oxygen
- choking child manoeuvres
- airway opening manoeuvres
- use of airway adjuncts
- provision of assisted ventilation (mouth-to-nose, mouth-to-mouth, bag-valve-mask ventilation)

All receiving units must have a system for summoning urgent help for advanced airway skills, which may include calling 999 for UCCs. Competent staff may come from a number of specialities but the most experienced person should perform the procedure. Usually this would be a senior anaesthetist. In complex situations, where time allows, personnel may be drawn from a network of staff involving more than one hospital.

Anaesthetic skills

Induction and maintenance of general anaesthesia in children in EDs requires specially trained clinical staff, together with a range of appropriate equipment and drugs. In most places this will only be provided by anaesthetic specialists, although larger EDs may have EM consultants and trainees who are competent and experienced in paediatric anaesthesia.

Emergency stabilisation skills should be within the remit of all anaesthetists attending EDs. Hospitals with a low throughput of children should ensure that these skills are maintained. This can be achieved by staff secondments or rotations to other centres (30).

Staff assisting with paediatric anaesthesia must be adequately trained; these will usually be ODPs (31). ED nurses and doctors should be familiar with the principles of emergency airway management, so that they can work effectively in the team. Competence to provide paediatric anaesthesia will need to be maintained through regular exposure, Continuing Professional Development (CPD) and/or refresher courses (31).

Critical care skills

Paediatric Intensive Care (PIC) is usually provided in regional centres in an organised local / regional network (32). For airway or respiratory support, hospitals should ensure that high dependency and intensive care level support can be delivered to the child within a safe period of time. Protocols should be agreed within the hospital to ensure rapid availability of skilled personnel. The equipment in the resuscitation area of any ED should include end-tidal CO₂ and invasive blood pressure monitoring (29). There should be standardised arrangements for transfer within the hospital (e.g. to medical imaging, operating theatres, or other critical care areas).

In many instances, following initial stabilisation the child will be transferred to a regional centre. EDs should use guidelines (usually already in place within the region), for contacting the regional PIC centre. Contact should be made early in these situations, in order to reduce time to transfer and to optimise clinical outcomes (32). The regional centre will usually despatch a retrieval team. In some hospitals the initial receiving hospital performs the transfer. At times the retrieval team may be unavailable or delayed, which may be important in time-critical conditions such as head injury. This situation should be anticipated, and a written policy agreed between the relevant units.

Regional networks should include EDs, ambulance Trusts, the Paediatric Intensive Care Unit (PICU) and all UCCs. Each network should audit all critical care management to improve the care of children within the network, and to share their experiences with other networks.

Surgical support

The availability of paediatric surgical expertise has decreased in many general hospitals in the last decade. While occasional practice in the continuing care of critically ill children is best avoided by surgeons and anaesthetists who do not usually care for children, immediate stabilisation skills and life-saving surgical skills must be within the competencies of surgeons taking part in an on-call rota covering the ED. Steps should be taken by those individuals to avoid deskilling (30).

The Healthcare Commission (4) found that in 2006 28% of acute Trusts in England and Wales reported their availability of trained staff (anaesthetists and surgeons) for emergency paediatric surgery as “poor”. As expertise in the care of children by anaesthetists and general surgeons in general hospitals has diminished, the importance of effective networking with regional and sub-regional paediatric surgeons increases.

Surgeons involved in occasional paediatric practice should be PILS or PLS providers, or equivalent. Those providing regular front-line care should be EPLS, APLS or Advanced Trauma Life Support (ATLS) providers. Fortunately there are few indications for immediate surgical intervention in childhood. Careful selection of cases can determine surgical success. Careful selection of imaging and its timing should be decided by joint protocols and case-by-case discussion.

A regional network should be established, so that early expert advice is sought appropriately for acute cases. Co-operation between acute Trusts, EDs, ambulance Trusts and regional centres is essential. Effective systems for trauma have been developed in some regions, with the aid of joint educational meetings and outcome audits (33).

Paediatric support

All EDs should have a named consultant paediatrician with designated responsibility for ED liaison. Their role will usually involve assisting with training, and giving advice on guidelines and protocols. This consultant should have an adequate number of protected sessions in their job plan. The absence of on-site children's services does not preclude this arrangement. EDs should work closely with local children's services to ensure harmonisation of clinical guidelines and patient pathways, and to share training of staff.

All paediatric departments supporting an on-site ED seeing more than 16,000 children per year should aim to appoint a paediatrician with sub-specialty training in paediatric EM (see Chapter 8). Their role will be to work in the ED as well as in paediatric assessment/admission units.

Safe discharge from Emergency Departments

Discharge of children from any facility inevitably carries a risk that some may subsequently deteriorate. Therefore safety nets must be in place, clinical governance systems applied, and monitoring of outcomes performed. The family must always be advised to return if the child's condition deteriorates. For safe discharge, the environment to which a child is being discharged must be taken into account, particularly if there are issues around supervision, child welfare, or the ability to return to the ED easily.

Clinical guidelines for any condition must include parameters for safe discharge, for example, ensuring that a child who is tachycardic is not discharged without discussion with a senior doctor. Clinical risk management studies show that children presenting for a second time with the same illness or injury should not be discharged without review by a senior doctor. In some EDs there may be a blanket safety policy of senior medical review of any small infant (e.g. less than three months old) before discharge. Such guidelines should exist, but parameters should be defined locally according to ED staff skill-mix, specialist availability, and evidence-based practice.

Advice leaflets should be available about common conditions, and should be specific to children and their parents and guardians. It may be advisable to have different leaflets for adults, older children, and younger children. If the centre discharging the child is not always open, verbal and written instructions should be given on how the family should access further advice if necessary.

Notification of attendance must be sent to the child's primary care team (GP and health visitor or school nurse) (20). The community teams must have systems in place to collate information on attendances from different urgent care providers. A liaison health visitor can be employed to assist with communication to the community and/or screen attendances for child welfare concerns.

Recommendations

1. All facilities receiving sick or injured children must be equipped with an appropriate range of drugs and equipment.
2. All staff working in facilities where children present must be trained in paediatric basic life support. ED nursing staff should be PILS/PLS or equivalent trained. Senior trainees and consultants in EM, paediatrics and anaesthetics dealing with acutely unwell children should be APLS/EPLS trained.
3. Urgent help must be available for advanced airway management.
4. Paediatric anaesthesia should only be carried out by competent staff.
5. All hospitals receiving acutely ill or injured children must have the facilities and staff required to establish high dependency care, and intensive level care for airway and respiratory support.
6. Regional networks must be in place to develop protocols to stabilise and transfer children to a PICU.
7. Regional networks must be in place to provide early advice and transfer for trauma and surgical patients.
8. All EDs should have a named paediatrician with designated responsibility for ED liaison.
9. All paediatric departments supporting an on-site ED seeing more than 16,000 children per annum should aim to appoint a paediatrician with sub-specialty training in paediatric EM.
10. Systems must be in place to ensure safe discharge of children, including advice to families on when and where to access further care if necessary.
11. All urgent care attendances in children must be notified to the primary care team: ideally both the GP and the health visitor/school nurse.

7. Staffing and training issues

Nursing skills

Nurses caring for sick and injured children in an emergency setting require both competence in emergency nursing, including organisational and clinical skills, and in the care of children. A nurse in any ED which receives children should be competent in:

- communicating with children and their families
- the assessment and recognition of the sick child
- basic life support skills
- recognition of vulnerable children, the ability to identify when safeguarding procedures are necessary, and the ability to implement the ED's child protection policy
- pain assessment and management
- administration of medication, ideally by Patient Group Directives (PGDs) for analgesia
- the current legal and ethical issues pertaining to children, including consent and confidentiality issues

Following the ED visit, communication with other professionals involved in the care of children can be vital, to ensure appropriate continuity of care, or that welfare concerns are addressed.

There are issues for nurses who work outside their registration status, i.e. registered adult nurses (RN [Adult]) caring for children, and registered children's nurses (RN [Children]) caring for adults. The Nursing and Midwifery Council (NMC) provides clear statements to guide practitioners who work in fields outwith their initial registration status³⁴. The NMC Code states, "If an area of practice is beyond your level of competence or outside your area of registration, you must obtain help and supervision from a competent practitioner until you and your employer consider that you have acquired the requisite knowledge and skill". Therefore RN [Adult] nurses must have supervision until deemed competent to care for children, and RN [Children] nurses must have supervision until deemed competent to care for adults.

All EDs seeing children should appoint an RN [Children]-trained lead nurse for children, responsible for developing policy and practice³⁵. There should also be a lead nurse for child protection (see Section 9), and consideration should be given to having a liaison health visitor (see Section 6). The lead nurse with overall responsibility for the ED should also have explicit responsibility for developing and maintaining a suitable environment and ensuring the provision of appropriate equipment (see Section 4).

The Royal College of Nursing (RCN) recommends a minimum of one registered children's nurse to be present at all times. However, the ability to provide a registered children's nurse does not detract from the ED's responsibility to ensure that all staff have the minimum competence to care for children. Indeed, it is acknowledged that many departments are unable to provide sufficient children's nurses to ensure that one is on duty at all times. In these departments, it is essential to have nurses who have undertaken more detailed education in the care of children and young people, to be able to offer advice and support to other staff.

Minimum competencies in relation to caring for children and young people have been defined by: *Skills for Health*³⁶, the Department for Education and Skills³⁷, the RCN³⁴, the Faculty of Emergency Nursing (FEN)³⁸, the *Emergency Care Framework for Children and Young People in Scotland*⁵. Many of these are broad, general competencies. The FEN competencies are more detailed³⁸. The FEN defines three levels of competence. Individual departments should consider the level of service they are providing, and therefore the levels of nursing competence they require. This approach has been taken by the NHS Executive for Scotland⁵.

Several universities now offer accredited post-registration modules in emergency care of the child and younger people for both RN [Adult] and RN [Children] nurses. However, Trusts should have in place a long-term strategy for recruitment and retention of registered children's nurses, and the secondment of RN [Adult] nurses to undertake training to become registered children's nurses.

In EDs where nurses work autonomously to see and treat patients (usually called ENPs), these nurses must have had specific education in the anatomical, physiological and psychological differences of children. They must also have specific training in history taking, examination skills and diagnostic reasoning in children, including interpretation of investigations. When nurses prescribe medication for children, they must have the necessary knowledge of paediatric pharmacology.

Medical skills (for non-specialists)

All doctors delivering ED care to acutely ill or injured children should be competent in assessing whether a child is reasonably well, potentially seriously unwell, or has a limb-threatening or life-threatening condition. They should at least be able to institute basic and advanced life support, according to the Resuscitation Council guidelines. They should have received training in child protection issues, and be able to identify different types of child welfare concern. Sections 6 and 9 cover these issues in more detail.

All doctors working in EDs should be familiar with departmental guidelines and have ready access to them. They must know when and how to access more senior or specialist advice promptly.

Foundation doctors and those in basic specialist training will come from different backgrounds, and will usually need to improve their emergency paediatric skills. This can be achieved by attending a one-day PLS or PILS course, or the longer APLS or EPLS courses. The DH (England) has commissioned an interactive DVD, *Spotting the Sick Child*, which is targeted at doctors at this level of training¹⁹.

For doctors in higher specialist training in EM, paediatric EM will be taught in stem year three of training, and around six months of that year will focus on paediatric EM skills. Non-consultant career grade doctors with regular exposure to sick children should attain the same competencies as stem year three trainees.

Recommendations

1. Nurses working in emergency care settings in which children are seen require at least basic competence in both emergency nursing skills and in the care of children.
2. All EDs receiving children should have an RN [Children] lead nurse for the care of children and young people and a lead nurse responsible for safeguarding children.
3. Acute Trusts should employ sufficient RN [Children] nurses to provide one per shift in EDs receiving children.
4. Acute Trusts should facilitate additional training in paediatric skills amongst the nursing staff of the ED, and have a long-term strategy for recruitment and retention of paediatrically-skilled nurses.
5. All ED nurses and doctors should have the same basic competencies in caring for children as they do for adults, e.g. recognition of serious illness, basic life support, pain assessment, and identification of vulnerable patients.
6. In EDs where nurses work autonomously to see and treat patients (usually called ENPs), these nurses must have had specific education in the anatomical, physiological and psychological differences of children.
7. ED doctors and nurses should be familiar with departmental guidelines and know when and how to access more senior or specialist advice promptly for children.

8. Training of doctors sub-specialising in paediatric emergency medicine

Paediatric EM is a recognised Certificate of Completion of Training (CCT) sub-specialty of both EM and paediatrics. The duration and format of this additional training has been agreed between the College of Emergency Medicine (CEM) and the RCPCH. Information about training and departmental accreditation is available on the CEM website www.emergencymed.org.uk/CEM. The document “A Framework of Competences for Sub-Specialty Training in Paediatric Emergency Medicine” forms the basis of the training programmes and is available at www.emergencymed.org.uk/CEM/Curriculum.

EDs seeing more than 16,000 children per annum should employ a consultant in the ED with sub-specialty training in paediatric EM. Hospital paediatric departments with an on-site ED seeing more than 16,000 children per annum should aim to appoint a paediatrician with sub-specialty training in paediatric EM. The appointment of consultants from both backgrounds is an advantage, and is essential for larger EDs.

Paediatric EM with a CCT in EM

A doctor holding a CCT in EM with registered sub-specialty training in paediatric EM can expect to be able to undertake duties as a consultant in the ED of a general hospital or of a children’s hospital. Demand for consultants with this additional training substantially outstrips supply. There are eighteen departments accredited by the CEM and the Postgraduate Medical Education and Training Board (PMETB) for sub-specialty training in paediatric EM. Most deaneries have at least one accredited department and therefore interested EM trainees can usually obtain this training locally.

A trainee in EM who seeks to register paediatric EM as a sub-specialty will usually need to undertake at least one year of training in the care of children, over and above that which is required for general EM higher specialist training. The training required to achieve the competencies would usually consist of:

- six months in paediatric EM: this must be in a department approved by the CEM for sub-specialty training in paediatric EM
- six months of ward-based paediatric specialities: at least three months of this should be in ward-based general paediatric medicine, including involvement in the care of emergencies

Training in the care of unconscious and critically ill children is required. All trainees in EM will have completed twelve months training in anaesthetics and intensive care during the acute care common stem rotation, in years one and two of their specialist training. If this attachment has not included training in the care of children, time must be allowed for this in the course of additional training for

paediatric EM as a sub-specialty. Many trainees will need at least three months training in a PICU to attain the necessary competencies.

Paediatric EM with a CCT in paediatrics

Trainees in paediatrics seeking registration in paediatric EM as a sub-specialty will need to undertake a two-year training programme. This is undertaken after core higher specialist training. Paediatric trainees wishing to pursue this sub-specialty training will need to apply for a national training grid post in paediatric EM. This ensures equity, as opportunities in paediatric EM are not available to paediatric trainees in every region. Information on this process is available from <http://www.rcpch.ac.uk/education/training/hst/subspecialty.html>.

The training programme for “run-through” trainees in paediatric EM is two years in duration and comprises two years of paediatric EM, including achievement of competencies in paediatric orthopaedics, paediatric surgery, and paediatric intensive care (normally around three months’ equivalent time in each, which may be attained on a modular basis).

Recognition of an ED for paediatric EM sub-specialty training

All specialist paediatric EDs receiving injured and acutely ill children are eligible for CEM/PMETB recognition. General EDs that offer high standards of training and good experience in the care of children may be recognised by the CEM, on the basis of the following criteria:

- numbers of children seen and paediatric case-mix: suitable departments will usually receive at least 16,000 new child patients each year, and in approving a general ED for paediatric EM training, the CEM should seek to ensure that a wide range of paediatric problems, medical as well as traumatic, is seen
- adequate facilities for the care of children
- specialist paediatric support: there must be paediatric in-patient facilities on the same site as the ED, and a consultant paediatrician must be identified as having special responsibility for the ED
- a paediatric EM trainer: a general or paediatric ED offering paediatric EM sub-specialty training must have at least one whole-time equivalent trainer, who is a consultant in paediatric EM

Recommendations

1. EDs seeing more than 16,000 children per annum should employ a consultant with sub-specialty training in paediatric EM.

2. Hospital paediatric departments with an on-site ED seeing more than 16,000 children per annum should aim to appoint a paediatrician with sub-specialty training in paediatric EM.
3. The appointment of consultants from both backgrounds is an advantage, and is essential for larger EDs.

9. Child protection in Emergency Departments: safeguarding children

The term “safeguarding children” places an emphasis on detection of vulnerable families and children, as well as those children who are subject to abuse. Since the Laming report on the case of Victoria Climbié, published in 2003³⁹, there has been an increasing emphasis on child protection and the report’s recommendations are a part of the Children Act 2005. This includes the development of Local Safeguarding Children’s Boards (replacing Area Child Protection Committees) with senior multi-agency membership, in the hope that this will encourage a more proactive approach to protecting the vulnerable child. The “Working Together to Safeguard Children” document²⁰ also makes recommendations affecting EDs. The NSF particularly states that all departments dealing with children should have access to child protection advice 24 hours a day, agreed child protection procedures, and training for all staff.

All ED staff should have access to adequate training in child protection appropriate to their posts, including all nursing, medical and non-clinical staff. Each Trust should provide basic and advanced training. A national course is now also available⁴⁰. The Healthcare Commission recently showed that in EDs in England, 85% were not up to standard in child protection training for their nursing staff⁴.

All EDs should have a lead consultant and lead nurse with responsibility for child protection, within the ED.

All EDs should have agreed protocols, relevant specifically to the ED, on how to access advice, and actions to take when welfare concerns are raised. There must be access to child protection advice 24 hours a day, from a paediatrician and from social care, with clear guidelines on how these services are accessed out-of-hours. Access to the up-to-date child protection register should be possible at all hours, either by direct link (e.g. password-controlled computer link) or via a named person (e.g. duty social worker). There should be a system in place to identify children who present frequently. These cases should be examined at regular intervals and appropriate action taken.

Translation can be a problem in EDs. Where there is a risk that information may be missing or misleading, every effort should be made to obtain a translator³⁹, or else consideration given to admitting the child for translation during normal working hours.

Robust systems are required to inform the primary care team about each child’s attendance at the ED in a timely fashion: ideally both the GP and health visitor/school nurse. Exceptions can be locally agreed, for example sexual health issues. Sharing of information is enhanced by appointing a liaison health visitor. The role and scope of work of the liaison health visitor varies, but must be matched to

the number of children requiring safeguarding, the availability of the Trust's named doctor and named nurse for safeguarding children, and the availability of information from social services. Liaison will be required with the PCT regarding the joint role of the health visitor in safeguarding children.

Recommendations

1. All EDs should follow the recommendations of the Laming enquiry³⁹.
2. All ED staff (clinical and non-clinical) must receive training in safeguarding children appropriate to their posts.
3. All EDs should nominate a lead consultant and lead nurse responsible for safeguarding children within the ED.
4. All EDs must have guidelines for safeguarding children, specific to the ED.
5. All EDs must be able to access child protection advice 24 hours a day, from a paediatrician and social services. Direct or indirect access to the child protection register should be available.
6. Systems must be in place to identify children who attend frequently.
7. The child's primary care team, including GP and health visitor/school nurse, should be informed of each attendance.

10. Major incidents involving children

All acute Trusts must cater for children in their hospital major incident plan. It is not possible to exclude children from arriving in these situations⁴¹. At a regional level, provision for children is required within a network arrangement, for ambulance arrivals and for continuing care.

The needs of children in a major incident can be considered in terms of the following groups:

- children who are directly injured; these may be from a variety of age groups or, in the case of an incident involving groups of children, may include many children of a similar age, which has implications for equipment
- children traumatically bereaved, children whose friends or family have been injured, or children affected by scenes they have witnessed
- children who may be brought to the hospital as part of family groups

If a hospital is overwhelmed with attendances, and in particular if there is limited access to paediatricians, paediatric intensivists, paediatric anaesthetists or paediatric surgeons, there should be provisions in the hospital major incident plan to utilise the services of a local network to support the hospital. This may include special arrangements for transportation of seriously injured children by the ambulance Trusts to designated centres. Consideration must also be given to ensuring less seriously injured children are taken to the centre where relatives are being treated or will arrive.

In responding to a major incident, the roles and responsibilities of the acute Trust are described in the DH's *Emergency Planning Guidance*⁴¹. Regarding children, the Trust should:

- provide a safe and secure environment for the assessment and treatment of children
- ensure staff are equipped to assess the severity of injuries in children
- provide decontamination facilities and personal protective equipment suitable for children
- ensure less seriously injured children are reunited with family members as soon as possible, and are protected from publicity
- ensure that notification of attendance is communicated to the primary care team, and relevant hospital staff, so that follow-up arrangements can be made
- ensure that children of ill or injured adults, and indeed of attending hospital staff, can be accommodated in a suitable reception/play area

Recommendations

1. All EDs must ensure children are included in the Trust's major incident plan.
2. In establishing a local network of hospitals and other services, children should be specifically considered.

11. Death of a child

The sudden and unexpected death of an infant or older child has a devastating effect on the family. Staff may also need informal support from their colleagues after such an event. *The Kennedy Report*⁴² makes recommendations for Sudden Unexpected Death in Infancy (SUDI). The RCPCH is currently considering the practical implications of these recommendations. Many EDs find it helpful to have a checklist of tasks, which can be complex and wide-ranging.

It is best practice for ambulance services to bring a dead child to the ED, unless there is a clear scene of crime, which should be preserved, and the child is obviously dead. Children should not be taken directly to the mortuary, bypassing the ED, or many of the Kennedy recommendations are at risk of being omitted.

If a child is being resuscitated, the parents should usually be allowed to stay with the child if they wish, as long as a member of staff is free to support them and explain what is happening.

Breaking bad news should follow normal ED procedures, but it is common for parents to wish to stay longer with the body. This should be anticipated and accommodated. Before leaving the department, parents should be provided with sufficient information to understand legal procedures, and know how to seek support and advice.

If the SUDI guidance⁴² does not apply or is not being used locally, information about the child's death should be passed at an early stage to a consultant in paediatric EM or a consultant paediatrician. This will help in addressing issues such as accident prevention, and in detecting examples of poor supervision, resulting in trauma, or diseases which may affect siblings.

One to three months after the death, the parents should be offered an appointment to see a relevant consultant⁴³, in order to explain the medical facts and offer support. This also provides valuable feedback to the ED on the handling of the situation. At this stage, the ability of the parents and siblings to cope with the psychological effect of the death is evolving, and problems are sometimes becoming apparent. Liaison with the GP may be needed for referral to counselling or clinical psychology services.

Recommendations

1. The recommendations of the Kennedy Report should be adopted (42).
2. Parents witnessing resuscitation must be supported by a member of staff.
3. A consultant in paediatrics or EM should receive early information about the death of a child.
4. One to three months after the death, the parents should be offered an appointment to see a relevant consultant .

12. Information systems and data analysis

Information systems

ED information systems should be designed to provide basic demographic and episode-related information, facilitate good practice, and minimise the administrative burden on clinical staff. They should meet the needs of patients, clinicians, managers, commissioners and regulators.

The system should encompass, or at least be able to link with, all sites in the local network which provide urgent care to children. All current health care of children should be available on the system, to facilitate appropriate communication and follow-up. Hospitals should also ensure that all episodes of care of children are available, including, for example, maternity clinics, fracture clinics, genitourinary clinics, and mental health episodes.

Representatives of the ED need to engage with “Connecting for Health” to influence the national agenda, and with local service providers to influence the design of their local systems.

Functions of an ideal information system should include:

1. A record function, including:
 - demographic data (name, address, date of birth)
 - name of person with parental responsibility
 - name of person accompanying child
 - mode of transport to hospital
 - name of nursery/school/college, if applicable
 - name of midwife/health visitor/school nurse, as applicable
 - presenting complaint
 - previous attendances to the same ED
 - the location, if an accident has occurred, for injury prevention surveillance
2. A communication system, including linkages to the hospital’s systems for recording hospital episodes, and regional/national data, as well as an automated process for informing the child’s primary care team of the attendance.
3. A real-time service delivery function, such as patient tracking within the ED, electronic ordering of tests, prescribing, etc.

4. Real-time clinical support, including alert categories, linkages to individual care plans, and a method of identifying previous attendances and frequent attenders.
5. A reporting system with good clinical coding, the ability to break down patient categories (e.g. by age), sufficient information to facilitate audit and clinical governance within the ED (e.g. national recommendations, and injury surveillance), and information about service provision (e.g. timings of the patient journey, and staff performance statistics).

Ideally, the system should also include, or be linked to, other sources of information (e.g. the Toxbase website, local clinical or operational guidelines, decision support software, on-line medical information services, and search engines), and be able to link to clinicians' personal CPD data.

Injury surveillance

Injuries are the commonest cause of death and preventable morbidity in the population below the age of approximately 30 years. Injury prevention is one of the least well researched, and underdeveloped elements of children's services. Knowledge of the epidemiology of injury is critical to prevention. Information about accidents in the local area should be available from the ED database, and can be used to inform local government policy, the media, and the police, within the limits of patient confidentiality. Advice is available at <http://www.dh.gov.uk/assetRoot/04/07/22/26/04072226.pdf>.

The Trauma Audit and Research Network (TARN) is the recommended method of assessing the quality of trauma care, and outcomes following severe injury (44).

Research in paediatric emergency medicine

EDs of any size can participate in, or organise, research studies. This should be regarded as a core activity, as there is a poor evidence-base for many aspects of paediatric EM. Departments should share good practice, and take part in research projects, using the recently developed research networks. These include the Medicines for Children Network (45), The College of Emergency Medicine (46) <http://www.emergencymed.org.uk/CEM/Research/Contents.asp>, and the British Association of General Paediatrics Research Network, (47) <http://www.bagp.org.uk>.

Recommendations

1. The needs of patients, clinicians, managers, commissioners and regulators need to be defined, and used to inform the development of ED information systems.
2. ED staff should participate in the national information technology agenda, and engage proactively with local service providers to design local systems.
3. There should be a minimum dataset, which incorporates the specific needs of children.
4. ED information systems should link up with other health information systems, so that data on all local health service contacts are available within the ED.
5. A child's attendance at an ED or UCC should be notified to their primary health care team (ideally both GP and health visitor or school nurse).
6. Surveillance of local patterns of injury should be possible.
7. Hospitals are encouraged to subscribe to the Trauma Audit and Research Network (TARN), to assess their own outcomes for patients with major trauma.
8. Research is a core element of paediatric EM. EDs should utilise the resources of recently developed research networks to participate in and plan research projects.

References

1. RCPCH. *Accident and Emergency Services for Children: Report of Multidisciplinary Working Party*. Royal College of Paediatrics and Child Health. June 1999.
2. RCPCH. *Children's Attendance at a Minor Injury/Illness Service (MIS)*. Royal College of Paediatrics and Child Health. February 2002.
3. RCPCH. *General Paediatrician with responsibilities for the child in A/E – The designated liaison paediatrician*. Joint Intercollegiate Working Party on A/E services for Children Royal College of Paediatrics and Child Health: July 2004.
4. Healthcare Commission. *Improvement review into Services for Children in Hospital*. Commission for Healthcare Audit and Inspection. February 2007. <http://www.healthcarecommission.org.uk/serviceproviderinformation/reviewsandinspections/improvementreviews/servicesforchildreninhospital.cfm>
5. *Emergency Care Framework for Children and young people in Scotland*. Scottish Executive. 2006, Edinburgh: <http://www.scotland.gov.uk/Publications/2006/09/19153348/0>
6. Salter R, Maconochie IK. Implementation of recommendations for the care of children in UK emergency departments: national postal questionnaire survey. *BMJ*. 330(7482):73-4, 2005 Jan 8.
7. Healthcare Commission's Acute Hospitals Portfolio 2005: <http://www.healthcarecommission.org.uk/serviceproviderinformation/reviewsandinspections/acutehospitalportfolio.cfm>
8. DoH. *National Service Framework for Children and Young People and Maternity Services* Department of Health 2004: <http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/ChildrenServices/ChildrenServicesInformation/ChildrenServicesInformationArticle>
9. DoH. *Our Health, our care our say: a new direction for community services*. Department of Health. January 2006: <http://www.dh.gov.uk/PolicyAndGuidance/OrganisationPolicy/Modernisation/OurHealthOurCareOurSay/fs/en>
10. DoH. *Emergency Access – clinical case for change: Report by Sir George Alberti, the National Director for emergency access*. Department of Health. 2006, London : http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4140903&chk=mXL0z4
11. Guglia E, Marchi AG, Messi G, et al. Evaluation of temporary observation and short hospital stay pediatric emergency department. *Minerva Pediatr* 1995;47:533-9
12. Mace SE. Pediatric observation medicine *Emerg Med Clin North Am* 2001; 19:239-54
13. LeducK, Haley-Andrews S, Rannie M. An observation unit in a pediatric emergency department: one children's hospital's experience. *J Emerg Nurs* 2002;28:407-13
14. Cooke MW, Higgins J and Kidd P. Use of emergency observation and assessment wards: a systematic literature review. *Emerg Med J* 2003;20:138-142.

15. Strengthening Local Services: The Future of the Acute Hospital. The Report of the National Leadership Network Local Hospitals Project 2006: www.nationalleadershipnetwork.org
16. RCPCH. *Old Problems, New Solutions*. Royal College of Paediatrics and Child Health. 2002, London.
17. RCPCH. *A framework of competences for Basic specialist training in Paediatrics*. Royal College of Paediatrics and Child Health. October 2004.
18. RCPCH. *Guidance on Safe Cover arrangements for Paediatric departments out of hours* Royal College of Paediatrics and Child Health: 2005, London.
19. Davies F and Department of Health (England). *Spotting the sick child* [DVD] 2004. ISBN 1 904039 11 1. Available from www.ocbmedia.com
20. DfES. *Working Together to Safeguard Children: A guide to inter-agency working to safeguard and promote the welfare of children*. Department for Education and Skills: 2006 <http://www.everychildmatters.gov.uk/resources-and-practice/IG00060/>
21. Su E, Mann NC, McCall M, Hedges JR. Use of resuscitation skills by paramedics caring for critically injured children in Oregon. *Prehospital emergency care* 1997;1:123-127
22. University of Warwick. *UK Ambulance Service Clinical practice Guidelines* (2006) Joint Royal colleges Ambulance Liaison Committee and The Ambulance Service Association, University of Warwick: 2006: http://www2.warwick.ac.uk/fac/med/research/hsri/emergency_care/jrcalc_2006/clinical_guidelines_2006
23. Roberts K, Jewkes F, Whalley H, Hopkins D, Porter K. A review of emergency equipment carried and procedures performed by UK front line paramedics on paediatric patients. *Emergency Medicine Journal*. 22(8):572-6, 2005 Aug.
24. DOH. *Taking Healthcare to the Patient: Transforming NHS Ambulance Services*. Department of Health, London: 2005: http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=114269&chk=bgRnxO
25. DoH *HBN 22 Accident and emergency facilities for adults and children* 2nd edition. Department of Health Estates and Facilities Division. 2005, London.
26. Connexions: <http://www.connexions-direct.com/index.cfm?pid=1>
27. Manchester Triage Group. *Emergency Triage* 2nd edition: Blackwell BMJ Books. 2005.
28. British Association for Emergency Medicine, Clinical Effectiveness Committee. *Guideline for the management of pain in children*. London 2004: http://www.emergencymed.org.uk/BAEM/CEC/assets/cec_pain_in_children.pdf
29. West Midlands Strategic Commissioning Group. *Standards for the care of the Critically Ill and Critically injured Child in the West Midlands*. 2004.
30. DoH. *The acutely or critically sick or injured child in the District General Hospital: A team response*. Department of Health. 2006: <http://www.dh.gov.uk/assetRoot/04/14/04/06/04140406.pdf>

31. RCoA. *Guidelines on the Provision of Anaesthetic Services*: Chapter 7. Royal College of Anaesthetists, 2004 : <http://www.rcoa.ac.uk/docs/GPAS-Paeds>
32. DoH. *Paediatric intensive care: a framework for the future. Report the National Co-ordinating Group on Paediatric Intensive Care the Chief Executive of the NHS Executive*. Department of Health. 1997, London: <http://www.dh.gov.uk/assetRoot/04/03/43/42/04034342.pdf>
33. Patterson M, Jones M, Lloyd DA, Development, implementation and prospective evaluation of guidelines for transfer of severely injured children to specialist centres. *British Journal of Surgery* 2006;93:1418-1423.
34. Royal College of Nursing. *Services for Children and Young People; Preparing Nurses for Future Roles*. 2004, London: RCN
35. BAEM Way Ahead 2005: www.emergencymed.org.uk/BAEM/Publications%20Committee/Publications.asp
36. Skills for Health – National Workforce competencies - www.skillsforhealth.org.uk/frameworks
37. DfES. *Common core of skills and knowledge for the Children's Workforce*. Department for Education and Skills. 2004, London: <http://www.dfes.gov.uk/commoncore/back.shtml>
38. Faculty of Emergency Nursing- www.facultyofemergencynursing.org
39. HMSO. *The Victoria Climbié Inquiry. Report of an Inquiry by Lord Laming*. The Stationery Office. 2003, London: <http://www.victoria-climbié-inquiry.org.uk/>
40. RCPCH/NSPCC/ALSG. *Safeguarding Children – Recognition and Response in Child Protection: An educational programme for doctors in training*. Royal College of Paediatrics and Child Health. 2006, London.
41. Department of Health NHS Emergency Planning Guidance: www.dh.gov.uk/PolicyAndGuidance/EmergencyPlanning/fs/en
42. RCPCH, RCPPath. *Sudden Unexpected Death in Infancy. Report of a working party convened by the RCP and RCPCH. Chair: Baroness Helena Kennedy QC*. Royal College of Pathologists. September 2004, London: www.rcpath.org
43. Cook, P. White, D K. Ross-Russell, R I. Bereavement support following sudden and unexpected death: guidelines for care. *Archives of Disease in Childhood*. 87(1):36-8, 2002 Jul.
44. www.tarn.man.ac.uk
45. <http://www.mcrn.org.uk>
46. <http://www.emergencymed.org.uk/CEM/Research/Contents.asp>
47. <http://www.bagp.org.uk>

Appendix 1

Abbreviations

APLS	Advanced Paediatric Life Support
ATLS	Advanced Trauma Life Support
CCT	Certificate of Completion of Training
CEM	College of Emergency Medicine
CPD	Continuing Professional Development
DH	Department of Health
ECP	Emergency Care Practitioner
ED	Emergency Department
EM	Emergency Medicine
ENP	Emergency Nurse Practitioner
EPLS	European Paediatric Life Support
FEN	Faculty of Emergency Nursing
GP	General Practitioner
JRCALC	Joint Royal Colleges Ambulance Liaison Committee
nGMS	new General Medical Services (contract)
NHS	National Health Service
NMC	Nursing and Midwifery Council
NSF	National Service Framework
ODP	Operating Department Practitioner
PALS	Patient Advice and Liaison Service
PCT	Primary Care Trust
PGD	Patient Group Directive
PIC	Paediatric Intensive Care
PICU	Paediatric Intensive Care Unit
PILS	Paediatric Intermediate Life Support
PLS	Paediatric Life Support
PMETB	Postgraduate Medical Education and Training Board
PNP	Paediatric Nurse Practitioner
RCGP	Royal College of General Practitioners
RCN	Royal College of Nursing
RCPCH	Royal College of Paediatrics and Child Health
RN	Registered Nurse
SIDS	Sudden Infant Death Syndrome
SUDI	Sudden Unexpected Death in Infancy
TARN	Trauma Audit and Research Network
UCC	Urgent Care Centre*

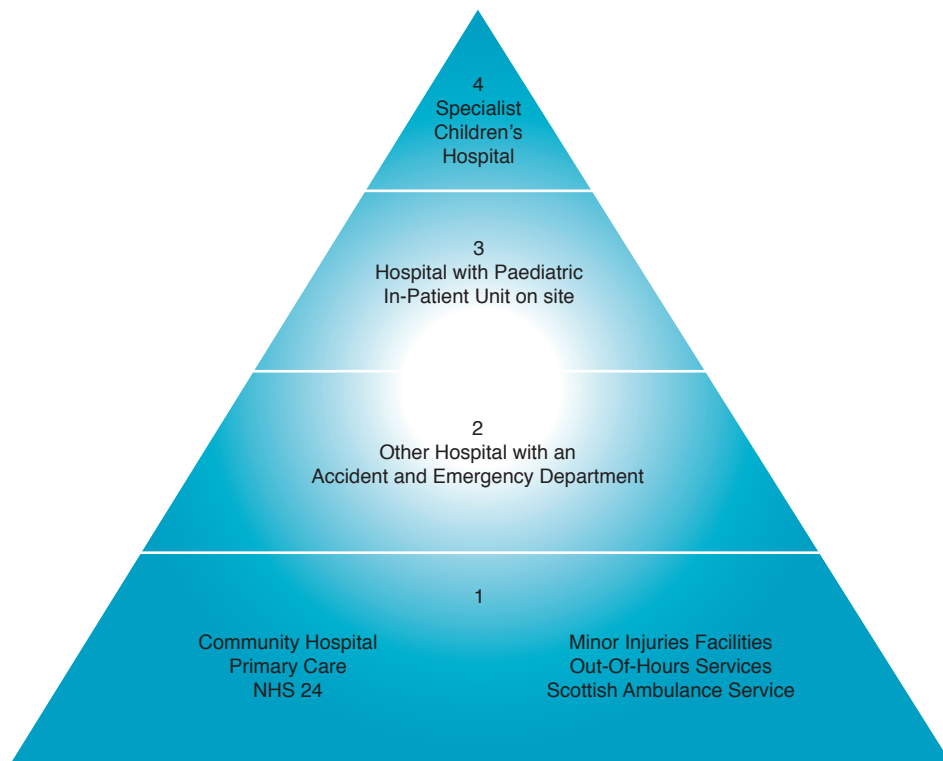
* In this document, the term Urgent Care Centre includes NHS walk-in centres, minor illness and injury centres, etc.

Appendix 2

An example of a tiered model of emergency care for children and young people.

Adapted with permission from “Emergency Care Framework for Children and Young People in Scotland”.
Scottish Executive 2006 (5).

Figure 1. Tiered Framework for Emergency Care for Children and Young People



Appendix 3

Drugs and equipment for resuscitation and stabilisation areas.

Reproduced in full with permission from “Standards for the care of critically ill and critically injured children in the West Midlands” (29)

Immediate Availability

Epinephrine (Adrenaline)	1:10,000
Epinephrine (Adrenaline)	1:1,000
Atropine sulphate	
Lidocaine 1% (lignocaine)	10mg/ml
Amiodarone	50mg/ml
Calcium chloride 10%	100mg/ml
Sodium bicarbonate	4.2% and 8.4%
Nebulisable beta agonist (salbutamol or terbutaline)	
Nebulised Budesonide	
Hydrocortisone	
Furosemide (frusemide)	20mg/ml
Antibiotics customised to local microbiology	
Rectal diazepam	5mg and 10mg
IV diazepam	5 mg/ml
IV lorazepam	4 mg/ml
Paraldehyde	
Phenytoin sodium	50mg/ml
Dextrose 10%	
Chlorphenamine (chlorpheniramine)	10mg/ml
Naloxone	400mcg/ml

Drugs available in the department

Anaesthetic Drugs

Thiopental (thiopentone)	Suxamethonium
Propofol	Rocuronium, Vecuronium
Ketamine	Atracurium

Other Drugs

Adenosine	3mg/ml
Alprostadil (prostaglandin E1)	0.5mg/ml
Aminophylline	25mg/ml
Amiodarone	50mg/ml
Dobutamine	250mg vials
Dopamine	40mg/ml
Flecainide	10mg/ml
Flumazenil	100mcg/ml
IV Salbutamol	500 mcg/ml
Mannitol	10% and 20%
Midazolam	5mg/ml
Morphine	10mg/ml
Norepinephrine (noradrenaline)	
Propranolol	1mg/ml

Equipment List for A&E and High Dependency areas

	In A&E		In HD	
	Essential	Desirable	Essential	Desirable
Dry white board and markers	•		•	
APLS/good practice algorithms	•		•	
Organized emergency trolley	•		•	
Printed drug doses/tape	•		•	
Clock	•		•	

Monitoring Equipment

	In A&E		In HD	
	Essential	Desirable	Essential	Desirable
ECG monitor/defibrillator with paediatric paddles 0-400 joules and hard copy capabilities	•		•	
Pulse oximeter (adult/paediatric probes)	•		•	
Blood pressure cuffs (infant, child, adult, thigh)	•		•	
A method of measuring core temperature, covering both hypo- and hyper-thermia (eg. rectal, tympanic membrane, naso-pharyngeal thermometer)	•		•	
Otoscope, ophthalmoscope, stethoscope	•		•	
Cardiopulmonary monitor with capability to monitor	•		•	
Invasive arterial and central venous pressure	•		•	
Noninvasive blood pressure monitoring (infant, child, adult cuffs)	•		•	
Portable capnograph	•		•	
Arterial/capillary blood glucose monitor	•			•
Access to blood gas machine	•		•	
Access to 12 lead ECG	•		•	

Airway Control/Ventilation Equipment	In A&E		In HD	
	Essential	Desirable	Essential	Desirable
Bag-valve-mask device: paediatric (500 mL) and adult (1000/2000 mL) with oxygen reservoir	•		•	
Infant, child, and adult masks	•		•	
Oxygen delivery device with flow meter	•		•	
Clear oxygen masks, standard and non-rebreathing (neonatal, infant, child, adult)	•		•	
Nasal cannula (infant, child, adult)	•		•	
Oral airways (sizes 0–5)	•		•	
Suction devices-catheters 6–14 fr yankauer-tip	•		•	
Nasal airways (infant, child, adult)	•		•	
Nasogastric tubes (sizes 6-16 fr)	•		•	
Laryngoscope handle and blades: curved 2,3; straight or Miller 0,1,2,3	•		•	
Endotracheal tubes: uncuffed (2.5-5.5), cuffed (6.0-9.0)	•		•	
Stylets for endotracheal tubes (paediatric, adult)	•		•	
Lubricant, water soluble	•		•	
Magill forceps (various sizes)	•		•	
Laryngeal masks (size 0–3)		•		•
Tracheal guide		•		•
Tracheostomy tubes (shiley sizes 0–6)		•		•
Oxygen blender	•		•	
Paediatric ventilators		•		•
Chest drain set	•		•	
Cricoidotomy set		•		•

	In A&E		In HD	
	Essential	Desirable	Essential	Desirable
Butterflies (19–25 gauge)	•		•	
Needles (18–27 gauge)	•		•	
Intraosseous needles	•		•	
Catheters for intravenous lines (16–24 gauge)	•		•	
IV administration sets and extension tubing with calibrated chambers	•		•	
Paediatric infusion pumps	•		•	
Syringe drivers	•		•	
I.V. fluids	•		•	
Lumbar puncture set	•		•	
Urinary catheters: Foley 6–14 Fr	•		•	
Fracture immobilisation	•			•
Cervical Collar – hard and soft	•		•	
Spinal board (child/adult)	•			•
Femur splint	•			•
Extremity splints	•		•	

Miscellaneous	In A&E		In HD	
	Essential	Desirable	Essential	Desirable
Weighing scale	•		•	
Heating source (for infant warming)	•		•	

