RCPCH Progress

Paediatric curriculum for excellence

RCEM CURRICULUM

Paediatric Emergency Medicine

Sub-specialty Syllabus

Version 2
Approved by the GMC for implementation from 1 September 2021

The Royal College of Emergency Medicine

RCPCH
Royal College of Paediatrics and Child Health
Leading the way in Children's Health

This document outlines the syllabus to be used by doctors completing Paediatric Emergency Medicine training in the United Kingdom (UK).

RCPCH / RCEM trainees should use the Assessment Strategy pertaining to their college, ie for RCPCH trainees it accompanies the RCPCH Progress curriculum and for RCEM trainees it accompanies the RCEM Emergency Medicine curriculum.

This is Version 2 as the document is updated, version numbers will be changed and content changes noted in the table below.

Version number	Date issued	Summary of changes
Version 1.2	July 2018	Amendment to page 1, paragraph 1 Amendment to wording on page 8 & 16 – learning outcome 4
Version 2	September 2021	Document reviewed as part of the Shape of Paediatrics Training review. 'Using the Syllabus with ePortfolio' (page 5) updated.

Introduction

Paediatric Emergency Medicine (PEM) is a sub-specialty of both Paediatrics and Emergency Medicine and aims to provide highly specialised acute health care to children and young people of all ages. This document is intended for doctors in Higher Specialty Training in Paediatrics or Emergency Medicine who wish to sub-specialise in PEM.

RCPCH - Curriculum

This syllabus supports the completion of the RCPCH Progress curriculum and should be used with the curriculum document and Assessment Strategy.

The purpose of the curriculum is to train doctors to acquire a detailed knowledge and understanding of health and illness in babies, children and young people. The curriculum provides a framework for training, articulating the standard required to work at Consultant level, through key progression points during their training, as well as encouraging the pursuit of excellence in all aspects of clinical and wider practice.

The curriculum comprises Learning Outcomes specifying the standard trainees must demonstrate to progress in training and attain a Certificate of Completion of Training (CCT). The syllabi supports the curriculum by providing further instructions and guidance on how the Learning Outcomes can be achieved and demonstrated.

RCPCH - Using the Syllabus

Paediatric trainees are required to demonstrate achievement of generic and sub-specialty or General Paediatric Learning Outcomes throughout their training period.

For all Level 1 and Level 2 trainees, there are 11 generic paediatric Learning Outcomes for each level. At Level 3, there are a further 11 generic paediatric Learning Outcomes for all trainees and several additional Learning Outcomes in either General Paediatrics or the sub-specialty to which the trainee has been appointed.

This syllabus contains five interlinked elements, as outlined in Figure 1 which illustrates how each element elaborates on the previous one.

RCEM - Curriculum

This syllabus supports additional sub-specialty training in PEM. It should be read with the parent Emergency Medicine curriculum, where learning and teaching methods and the assessment system are described.

RCEM - Using the Syllabus

Emergency Medicine trainees will have acquired many of the PEM capabilities in this syllabus during the third year of core training and in higher specialty training and it is expected that these will be mapped to PEM sub-specialty training. During PEM sub-specialty training the EM trainee may revisit these capabilities under the supervision of a Paediatric Emergency Medicine lead trainer with the trainee seeing more complex and challenging cases, as well as covering new areas described in this PEM syllabus.

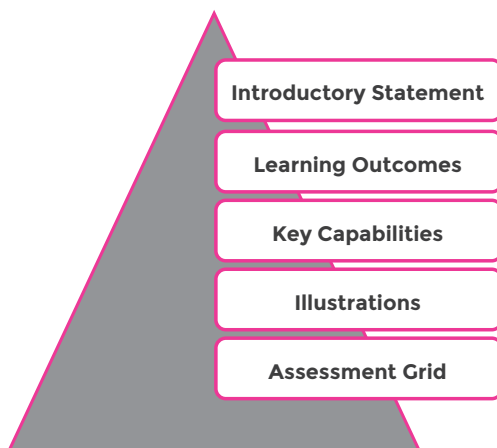This syllabus contains five interlinked elements, as outlined in Figure 1.

Introductory Statement

Learning Outcomes

Key Capabilities

Illustrations

Assessment Grid

Figure 1: The five elements of the syllabus

Elements of the Syllabus

The **Introductory Statement** sets the scene for what makes a Paediatric Emergency Medicine doctor.

The **Learning Outcomes** are stated at the beginning of each section.

RCPCH - These are the outcomes which the trainee must demonstrate they have met to be awarded their Certificate of Completion of Training (CCT) in Paediatrics. Progress towards achievement of the Learning Outcomes is reviewed annually at the Annual Review of Competence Progression (ARCP). Each Learning Outcome is mapped to the General Medical Council (GMC) Generic Professional Capabilities framework. Each trainee must achieve all the Generic Professional Capabilities to meet the minimum regulatory standards for satisfactory completion of training.

RCEM - These are the outcomes which the trainee must demonstrate they have met to be awarded additional Certificate of Completion of Training (CCT) in Paediatric Emergency Medicine Sub-Specialty. Progress towards achievement of the Learning Outcomes is reviewed at the Annual Review of Competence Progression (ARCP).

The **Key Capabilities** are mandatory capabilities which must be evidenced by the trainee, in their ePortfolio, to meet the Learning Outcome.

The **Illustrations** are examples of evidence and give the range of clinical contexts that the trainee may use to support their achievement of the Key Capabilities. These are intended to provide a prompt to the trainee and trainer as to how the overall outcomes might be achieved. They are not intended to be exhaustive and excellent trainees may produce a broader portfolio or include evidence that demonstrates deeper learning. It is not expected that trainees provide ePortfolio evidence against every individual illustration (or a set quota); the aim of assessment is to provide evidence against every Key Capability.

The **Assessment Grid** indicates suggested assessment methods, which may be used to demonstrate the Key Capabilities. Trainees may use differing assessment methods to demonstrate each capability (as indicated in each Assessment Grid), but there must be evidence of the trainee having achieved all Key Capabilities.

Using the Syllabus with ePortfolio

The ePortfolio is used to demonstrate a trainee's progression using assessments, development logs and reflections. Events should be linked to the Progress curriculum specifically against the key capabilities at the appropriate level.

Further guidance on using the ePortfolio is available on our website: https://www.rcpch.ac.uk/resources/rcpch-eportfolio-kaizen-guidance-trainees

Paediatric Emergency Medicine Introductory Statement

Introductory Statement

A Paediatric Emergency Physician is a doctor who specialises in the initial management of children and young people of all ages presenting with a wide range of undifferentiated conditions. They need to make pragmatic and rapid decisions using a wide breadth of knowledge across a vast range of paediatric presentations.

They need to be adaptable in order to be able to switch immediately from managing minor conditions to leading the resuscitation of children and young people. They are equally at home dealing with minor and major trauma, and minor and serious illness, as well as the worried well.

Paediatric Emergency Physicians must also acquire a wide range of non-clinical skills and abilities, both inward and outward looking. These may revolve around process management, either in the Emergency Department (ED), the hospital as a whole, or the wider community and interfaces of care. They must also learn to take care of themselves and the emergency team, developing skills to counteract the high-pressure nature of the workload through, for example, communication, debriefing and resilience training.

They gain their skills by working in Paediatric Emergency Departments (PEDs), Paediatric Intensive Care Units (PICUs) and alongside colleagues from other specialties including emergency medicine, paediatrics, general paediatric surgery and other surgical specialties, mastering both the diagnostic challenge and the practical skills required to treat this diverse population. As consultants, Paediatric Emergency Physicians may work in designated PEDs or alongside adult colleagues, taking on the care of children and young people in mixed EDs.

Sub-specialty Learning Outcomes

	Sub-specialty Learning Outcomes	GMC Generic Professional Capabilities
1.	Recognises, assesses and manages the full range of paediatric emergency conditions.	GPC 1, 3, 5, 6
2.	Assumes the role of paediatric emergency team leader and takes responsibility for this domain of service.	GPC 3, 5
3.	Performs high-level clinical and technical skills and procedures in the paediatric emergency setting.	GPC 3
4.	Liaises effectively with pre-hospital, hospital and community specialist teams.	GPC 1, 5
5.	Effectively manages and coordinates patient flow, staffing, safety and quality in a PED.	GPC 1, 3, 5, 6
6.	Demonstrates the ability to make pragmatic and rapid decisions across a broad range of paediatric emergencies.	GPC 1, 2, 3, 5, 6, 7

Sub-specialty Learning Outcome 1

Recognises, assesses and manages the full range of paediatric emergency conditions.	GPC 1, 3, 5, 6

Key Capabilities

Manages the critically ill neonate, child and young person.	GPC 1, 2, 3, 5, 6
Assesses and manages the patient in respiratory failure.	GPC 1, 2, 3, 5, 6
Assesses and effectively manages the septic or shocked patient.	GPC 1, 2, 3, 5, 6
Assesses and manages the patient with a cardiac disorder.	GPC 1, 2, 3, 5, 6
Assesses and manages the patient presenting with a reduced level of consciousness.	GPC 1, 2, 3, 5, 6
Assesses, diagnoses and manages the patient presenting to the PED with major or minor trauma.	GPC 1, 2, 3, 5, 6
Identifies and manages acute mental health conditions in the PED.	GPC 1, 2, 3, 5, 6
Assesses and manages presentations that suggest physical or psychological abuse.	GPC 1, 2, 3, 5, 6
Manages the processes following an unexpected death in the PED.	GPC 1, 2, 3, 5, 6

Illustrations

Demonstrates knowledge of the PED management of:	
1.	Upper airway obstruction.
2.	Allergic conditions and anaphylaxis.
3.	Respiratory failure, in particular related to acute asthma, pneumonia and bronchiolitis.
4.	Sepsis, the systemic inflammatory response and shock.
5.	Hypotension and heart failure.
6.	Congenital heart disease.
7.	Cardiac arrhythmias.
8.	Myocarditis.

9.	Hypertension.
10.	Syncope.
11.	Acute neurological emergencies, including status epilepticus.
12.	Febrile and non-febrile seizures.
13.	Raised intracranial pressure and reduced level of consciousness.
14.	Headaches.
15.	The neurosurgical patient.
16.	Diabetic ketoacidosis.
17.	Hypoglycaemia.
18.	Metabolic disease.
19.	Endocrine abnormalities.
20.	Common childhood illnesses.
21.	Minor and severe infections.
22.	Upper respiratory tract infection (URTI) and lower respiratory tract infection (LRTI),
23.	Gastroenteritis.
24.	Non-blanching rash.
25.	Kawasaki disease.
26.	Upper and lower urinary tract infections.
27.	Common and emergency nephro-urological presentations.
28.	Abdominal pain, including surgical and non-surgical causes as well as functional abdominal pain.
29.	Scrotal pain.
30.	Bilious vomiting.
31.	Gastrointestinal bleeding.
32.	Inflammatory bowel disease.
33.	Common and emergency gynaecological presentations.
34.	Sexually transmitted diseases.
35.	Patients seeking emergency contraception.
36.	Life-threatening ENT emergencies, eg quinsy and post-tonsillectomy bleeding.
37.	Common ear, nose and throat (ENT) disorders, eg otitis media, nasal injuries, epistaxis and removal of foreign bodies.
38.	Common oral and dental injuries and emergencies.

39.	Common and emergency ophthalmological presentations.
40.	Common and emergency dermatological conditions.
41.	Bites and infestations.
42.	The limping child.
43.	Rheumatological and non-traumatic musculoskeletal presentations.
44.	Acute and chronic pain.
45.	Oncological conditions, including making an initial assessment and diagnosis as well as managing complications related to the disease process or its treatment.
46.	Haematological disorders, eg sickle cell disease.
47.	Immunodeficient states.
48.	Delirium and psychosis.
49.	Self-harm.
50.	Poisoning, accidental drug ingestion and overdose.
51.	Hypothermia and hyperthermia.
52.	Electrolyte abnormalities.
53.	Needlestick injuries.
Management of the injured child and young person:	
1.	Anticipates injury patterns in common trauma presentations in each age group.
2.	Demonstrates knowledge of the PED management of: • The child or young person with polytrauma and potential major trauma • Bleeding disorders in trauma and recognises and manages massive haemorrhage • Chest trauma and performs and facilitates key chest procedures, eg chest drain insertion • Abdominal and pelvic trauma, including the application of pelvic binders • Acute head and spinal injury, including spinal cord injury • Acute drowning and immersion injury • Acute burn injuries (including electrical burns) and subsequent complications • All limb-threatening injuries, including open fractures and reduces injuries compromising nerve or vascular supply • All fractures and ligamentous injuries • A dislocated joint and reduces the joint and manages the onward referral • All lacerations and open wounds • Rhabdomyolysis and compartment syndrome

Safeguarding within the PED:	
1.	Recognises presentation patterns which suggest physical or psychological abuse, stratifies risk and engages with allied professionals in accordance with national and local policies and guidance.
2.	Recognises how societal issues, such as sex trafficking, involvement with gang culture and female genital mutilation (FGM) may impact on children and young people presenting to the PED.
3.	Manages children and young people sensitively where sexual assault and sexual abuse is suspected.
Mental health:	
1.	Performs a mental health assessment relevant to PED care.
2.	Risk-stratifies children and young people attending the PED with acute mental health issues to identify those who require admission or urgent intervention.

Sub-specialty Learning Outcome 2

Assumes the role of paediatric emergency team leader and takes responsibility for this domain of service.	GPC 3, 5

Key Capabilities

Leads a multispecialty trauma team.	GPC 3, 5

Illustrations

1.	Leads a resuscitation team.
2.	Assembles and effectively prepares a multispecialty team prior to the arrival of a critically unwell or injured child and young person.
3.	Recognises the prognostic factors in resuscitation episodes, including situations when extracorporeal life support may be appropriate.
4.	Organises and leads a team to support an unexpected birth in the PED to ensure the safety of the mother and baby.
5.	Takes decisions in circumstances which present ethical issues and recognises when to cease resuscitation.
6.	Provides or signposts staff to psychological support in response to acute events or system pressures.
7.	Signposts families to sources of psychological support after traumatic events which may have precipitated the ED visit and demonstrates ability to follow the principles of psychological first aid.

Sub-specialty Learning Outcome 3

Performs high-level clinical and technical skills and procedures in the paediatric emergency setting.	GPC 3

Key Capabilities

Demonstrates the clinical knowledge necessary to manage the range of problems seen in the PED.	GPC 3, 5
Employs the technical skills required to manage patients in the PED.	GPC 3

Illustrations

1.	Uses a range of techniques, including simulation, to guide and support learning within the PED.
2.	Performs a primary and secondary survey in a patient with an acute life-threatening medical illness.
3.	Appropriately uses and interprets invasive and non-invasive physiological monitoring.
4.	Interprets the significance of changes in physiological parameters in the critically unwell patient and intervenes accordingly.
5.	Obtains vascular access and manages the complications.
6.	Interprets results of acid-base physiology in the clinical context and provides interventions where necessary.
7.	Provides adequate analgesia using different agents and administration routes.
8.	Recognises distraction techniques and their use in facilitating examination and the performance of procedures.
9.	Delivers local anaesthesia at discrete sites, eg for wound repair and for nerve blocks using a range of agents.
10.	Delivers safe, appropriate procedural sedation to the child and young person of any age in the PED for a range of procedures, by using a variety of sedation agents.
11.	Recognises appropriate pharmacological agents for use in the induction of anaesthesia.
12.	Recognises the management, including sedation, of the child and young person intubated in the PED.
13.	Follows age-appropriate algorithms for obstructed or difficult airways, including the indications and techniques for performing a surgical airway.

14.	Initiates and uses non-invasive respiratory support and applies appropriate ventilatory strategies.
15.	Manages traumatic and spontaneous pneumothoraces and recognises the indications and techniques for drainage, including needle aspiration and chest drain placement.
16.	Applies appropriate techniques to maintaining adequate cerebral perfusion.
17.	Uses vasoactive drugs appropriately and recognises their potential complications.
18.	Utilises neuroimaging appropriately in the PED environment.
19.	Selects and interprets the appropriate imaging modality and body area for patients following trauma.
20.	Uses point-of-care ultrasound as a diagnostic aid in the ED for specified conditions, eg pneumothorax, cardiac standstill and foreign body detection.
21.	Uses point-of-care ultrasound for ultrasound-assisted and ultrasound-guided procedures, eg femoral nerve block or vascular access.

Sub-specialty Learning Outcome 4

Liaises effectively with pre-hospital, hospital and community specialist teams.	GPC 1, 5

Key Capabilities

Manages a PEM department and its interactions with the hospital and community.	GPC 1, 5, 6

Illustrations

1.	Interfaces effectively with all affiliated services, including paramedic and pre-hospital, general paediatric and inpatient specialty teams.
2.	Safely transports the acutely unwell child or young person within the hospital and facilitates transport between hospitals, where necessary.
3.	Interfaces effectively with general practice and community care.
4.	Provides both written and verbal safety-netting advice to families for all conditions amenable to discharge from the ED.
5.	Recognises the roles of other professionals, agencies and the voluntary sector in the management of a child's or young person's mental health.
6.	Recognises how young people transition from paediatric to adult services and how this may impact on acute presentations to the PED.
7.	Demonstrates knowledge of the legal process if faced with objections from patients or carers to the use of blood products.
8.	Facilitates organ donation as a part of end-of-life care, including the referral to donation services.
9.	Manages the processes that take place after an unexpected death, including investigations, involvement of other healthcare professionals and engagement with other agencies, eg the coronial officer, police and child or young person death overview panel.

Sub-specialty Learning Outcome 5

Effectively manages and coordinates patient flow, staffing, safety and quality in a PED.	GPC 1, 3, 5, 6

Key Capabilities

Recognises ED crowding, and implements effective strategies to relieve it as quickly as possible while maintaining safety and quality of care.	GPC 1, 3, 5, 6

Illustrations

1.	Demonstrates an understanding of acuity scoring and triage systems.
2.	Recognises and responds to potential or real threats to patient safety in the PED.
3.	Manages conflict with staff and families.
4.	Recognises the importance and impact of human factors on the care of the acutely unwell child or young person in the PED.
5.	Recognises the importance and has an understanding of the techniques involved with quality improvement and audit in the ED setting to effectively improve care.
6.	Recognises the potential impact of existing and emerging online technology for engagement and communication, including social media and employs professional boundaries for its use.

Sub-specialty Learning Outcome 6

Demonstrates the ability to make pragmatic and rapid decisions across a broad range of paediatric emergencies.	GPC 1, 2, 3, 5, 6, 7

Key Capabilities

Leads and manages a paediatric emergency.	GPC 1, 3, 5, 6, 7

Illustrations

1.	Provides leadership in hot or cold debrief episodes and supports the PED team after a significant event, Major Incident or resuscitation.
2.	Uses national policy and targets for quality and safety of care in PEM.
3.	Recognises appropriate roles within a Major Incident response, as laid out in local and national policies.
4.	Recognises the management of all forms of Major Incidents, including chemical, biological, radiological and nuclear (CBRN) and those with mass casualties.

Assessment Grid

RCPCH

This table suggests assessment tools which may be used to assess the Key Capabilities for these Learning Outcomes. This is not an exhaustive list and trainees are permitted to use other methods within the RCPCH Assessment Strategy to demonstrate achievement of the Learning Outcome, where they can demonstrate these are suitable.

Key Capabilities	RCPCH Assessment / Supervised Learning Event suggestions										
	Paediatric Mini Clinical Evaluation (ePaed Mini-CEX)	Paediatric Case-based Discussion (ePaed CbD)	Directly Observed Procedure / Assessment of Performance (DOP/AoP)	Acute Care Assessment Tool (ACAT)	Discussion of Correspondence (DOC)	Clinical Leadership Assessment Skills (LEADER)	Handover Assessment Tool (HAT)	Paediatric Multi Source Feedback (ePaed MSF)	Paediatric Carers for Children Feedback (Paed CCF)	Other
Manages the critically ill neonate, child and young person.	✓	✓		✓		✓				
Assesses and manages the patient in respiratory failure.	✓	✓		✓						
Assesses and effectively manages the septic or shocked patient.	✓	✓		✓		✓				
Assesses and manages the patient with a cardiac disorder.	✓	✓		✓		✓				
Assesses and manages the patient presenting with a reduced level of consciousness.	✓	✓		✓						
Assesses, diagnoses and manages the patient presenting to the PED with major or minor trauma.	✓	✓		✓		✓				
Identifies and manages acute mental health conditions in the PED.	✓	✓		✓						
Assesses and manages presentations that suggest physical or psychological abuse.		✓		✓						
Manages the processes following an unexpected death in the PED.		✓		✓		✓	✓			
Leads a multispecialty trauma team.	✓			✓		✓		✓		
Demonstrates the clinical knowledge necessary to manage the range of problems seen in the PED.	✓	✓		✓						
Employs the technical skills required to manage patients in the PED.	✓		✓	✓						
Manages a PEM department and its interactions with the hospital and community.	✓	✓		✓		✓		✓		
Recognises ED crowding and implements effective strategies to relieve it as quickly as possible while maintaining safety and quality of care.	✓	✓		✓				✓		
Leads and manages a paediatric emergency.	✓	✓		✓		✓		✓		

Assessment Grid

RCEM

This table suggests assessment tools which may be used to assess the Key Capabilities for these Learning Outcomes.

Key Capabilities	RCEM Assessment / Supervised Learning Event suggestions						
	Mini Clinical Evaluation (Mini-CEX)	Case-based Discussion (CbD)	Directly Observed Procedure (DOP)	Acute Care Assessment Tool (ACAT)	Extended Structured Learning Event (ELSE)	Multi Source Feedback (MSF)	Faculty Education Statement (FES)
Manages the critically ill neonate, child and young person.	✓	✓		✓	✓		✓
Assesses and manages the patient in respiratory failure.	✓	✓		✓	✓		✓
Assesses and effectively manages the septic or shocked patient.	✓	✓		✓	✓		✓
Assesses and manages the patient with a cardiac disorder.	✓	✓		✓	✓		✓
Assesses and manages the patient presenting with a reduced level of consciousness.	✓	✓		✓	✓		✓
Assesses, diagnoses and manages the patient presenting to the PED with major or minor trauma.	✓	✓		✓	✓		✓
Identifies and manages acute mental health conditions in the PED.	✓	✓		✓	✓		✓
Assesses and manages presentations that suggest physical or psychological abuse.		✓		✓	✓		✓
Manages the processes following an unexpected death in the PED.		✓		✓	✓		✓
Leads a multispecialty trauma team.	✓			✓	✓	✓	✓
Demonstrates the clinical knowledge necessary to manage the range of problems seen in the PED.	✓	✓		✓	✓		✓
Employs the technical skills required to manage patients in the PED.	✓		✓	✓	✓		✓
Manages a PEM department and its interactions with the hospital and community.	✓	✓		✓	✓	✓	✓
Recognises ED crowding, and implements effective strategies to relieve it as quickly as possible while maintaining safety and quality of care.	✓	✓		✓	✓	✓	✓
Leads and manages a paediatric emergency.	✓	✓		✓	✓	✓	✓

Assessment Grid