European Training Requirements for Training in Paediatric Emergency Medicine

Syllabus completed: November 2018

Approved by European Board of Paediatrics

Preface

Paediatrics is an independent medical specialty based on the knowledge and skills required for the prevention, diagnosis and management of all aspects of illness and injury affecting children of all age groups from birth to the end of adolescence, up to the age of at least 18 years. It is not just about the recognition and treatment of illness in babies and children. It also encompasses child health, which covers all aspects of growth and development and the prevention of disease. The influence of the family and other environmental factors also play a large role in the development of the child, and many conditions require life-long management and follow-up before a smooth transition of care to adult services.

This ETR complements the ETR in Emergency Medicine, approved by the UEMS in April 2019. In that ETR, it is recognised that general EM physicians will usually undertake significant work in patients who are children, and addresses the training needs for such physicians regarding their paediatric skills. **This current document is targeted at doctors who will either work entirely, or almost so, in a paediatric environment such as a dedicated paediatric Emergency Department.** In that context it is believed that the vast majority will have undertaken their early training in paediatrics. For these reasons we believe that this group of trainees require to be able to demonstrate a solid basic training in General Paediatrics, as set out by many National Training Authorities, and addressing skills and competencies recommended in the European Common Trunk Syllabus, approved by the EAP-UEMS (European

Academy of Paediatrics - Union Européenne des Medicins Specialistes). This training, which is recommended as being of 3 years minimum duration, will normally come as a prelude to specialist training, and will underpin many of the principles set out in this specialist syllabus.

However this ETR may also guide general EM physicians who wish to extend their paediatric skills. Those doctors will usually have undertaken core training in general medicine, but will have developed a number of paediatric skills and competencies as a result of the EM training, and through their work in Emergency Departments that see children. For such doctors, a repeat of their core training (this time in Paediatrics) seems unreasonable. We would recommend that for this group, evaluation by a PEM trainer at the start of their paediatric training should identify what competencies from the Paediatric Core syllabus need addressing, and suitable specific paediatric training in these areas should be arranged. It is expected that this would be a minimum of 1 year in an accredited centre.

PEM was recognised as a specialist area within paediatrics by the Confederation of European Specialists in Paediatrics (CESP) and latterly by the EAP and is a subsection of the Tertiary Care Group of the European Academy of Paediatrics (EAP), itself a section of the European Union of Medical Specialists (UEMS) through the European Board of Paediatrics (EBP).

PEM is concerned with providing highly specialised acute health care to children of all ages.

Methodology for generating the syllabus

This syllabus is a revised version of the European Syllabus for PEM 2011.

This syllabus has been created by the Curriculum Development Special Interest Group of the Paediatric Section of the European Society of Emergency Medicine (EUSEM):

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Contents

A. Introduction

This syllabus intends to:

- Harmonise training programmes in PEM between different European countries.
- Establish clearly defined standards of knowledge and skill required to practice PEM at the tertiary care level.
- Foster the development of a European network of competent tertiary care centres for PEM.
- Improve the level of care for children who attend Emergency Departments (EDs).

B. Aim of tertiary care training

The aim of tertiary care training in PEM is to provide training to allow competent practice to be undertaken as a tertiary care specialist whose practice would be expected to deal with complex problems in PEM.

The end result of the training programme envisaged and detailed below will provide for the needs of Paediatric Emergency Medicine Physician (PEMP) who is a tertiary care specialist and whose scope of practice would be expected to encompass:

- The PEMP is able to look after patients with a wide range of pathologies, from the life threatening to the self-limiting, within all paediatric age groups in the ED setting.
- Essential to the work of the PEMP is the principle that all decisions should be made in the best interests of the child or young person in their care.
- The PEMP is able to safely and effectively identify those children needing admission and those that can be discharged.
- The PEMP is able to conduct a primary assessment and take appropriate steps to stabilise and treat critically ill and injured children.
- The PEMP is able to work in the difficult and challenging environment of the ED and is able to re-prioritise and respond to new and urgent situations.
- The PEMP is an expert at directing and co-ordinating medical, surgical and trauma resuscitations involving children.
- The PEMP is skilled at practical procedures especially those needed for resuscitation.
- The PEMP is able to interact with, co-ordinate, educate and supervise all members of the ED team.
- The PEMP is able to understand the unique interaction of the ED with every part of the hospital and its significant role in interacting with the external community.

- The PEMP is able to critically evaluate evidence and engage in continuous quality improvement in the department for the benefit of patients
- The PEMP is able to work alongside EM trained specialists, collaborating to maximise the benefit for all children
- As well as providing clinical care, the PEMP is able to act as co-ordinator in the ED during a major incident.

C. Training period

A clinical training period of full-time employment of 24 months (or equivalent duration of part time training) is considered appropriate.

D. Research training

Whereas there are no active guidelines at present for prosecution of a research programme within the European Syllabus of tertiary training, research training (clinical or laboratory based) of at least 6 months is recommended. We recognise that not all trainees will want/be able to undertake original research, but feel that all trainees should be able to critically appraise research they encounter and training to do this should be part of their course. These arrangements will need to be negotiated at the national level.

E. Requirements for training institutions

The recognition of training institutions will ultimately be part of a joint process involving NTAs, EAP-UEMS and EUSEM (Paediatric Section). It is anticipated that the Paediatric Section of EUSEM will act as the agent for EAP-UEMS and CESP in executing this task. A list of the names and characteristics of existing national training centres will be created and held by the Paediatric Section of EUSEM and EAP-UEMS which will oversee quality assurance of the recognised centres at periodic intervals every 5 years

using the guidelines suggested by the UEMS.

a. Accreditation of centres

i. For each European Union (EU) Member country, a list of centres, units, training directors, tutors and teachers should be compiled and updated on an annual basis. Each centre is characterised by the available modules (e.g. does it have a burns unit, PICU, etc?) or areas of teaching activity, tutors and teachers available and the size of the clinical practice as defined by the needs of the trainee.

ii. Accreditation will initially be given by the NTA and ultimately approved by EAP-UEMS. The approval process will follow the EU Guidelines (currently in preparation). At present Paediatric Section of EUSEM will simply review national inspections and act as arbiter in situations of disagreement.

iii. A training centre can be a single institution or a group of related establishments.

b. Fully-accredited training centre

i. The centre must provide adequate experience in all fields of PEM. It is expected to provide all training modules. The number of activities must be sufficient to provide the required experience for a trainee.

ii. A group of related establishments can be considered a centre and each component considered as a unit contributing one or more modules.

iii. The centre must have easy access and close relationships with other relevant specialities. Specifically the centre should be accredited to provide both general paediatric training, as well as general EM training.

iv. Demonstration of involvement of other care teams particularly specialised nurses, paediatric nutritionists, physiotherapists, social workers and psychologists is essential for recognition. The centre must provide evidence of on-going clinical research and access to basic research. In countries that have approved centres for PEM care then the fully-accredited training centre must be one of these.

v. The centre will be responsible for weekly clinical staff/seminar teaching and participation in regional/national meetings. Basic textbooks in PEM should be immediately available and there should be easy access to a comprehensive reference library either in paper or electronic format.

c. Training unit

Training units are institutions that provide training in one or more aspects (modules) of the PEM curriculum. They must provide adequate exposure in the defined area and a teacher who is deemed competent in these areas.

F. Requirements for Trainers in PEM

a. The training staff in a centre should include at least two trainers. The Training Programme Director (TPD) must have been practising PEM for at least 5 years.

b. There should be additional Educational Supervisors/Trainers who should provide training across all aspects of the speciality and be research active in PEM. When an aspect of training cannot be provided in one centre it will be necessary for the trainee to be taught at another suitable centre by a trainer approved for that purpose.

c. A trainer is a person who holds acknowledged expertise in one or several aspects

of PEM. This person's contribution may be restricted to these areas of expertise.

Both educational supervisors and trainers must have practised PEM for a minimum of 2 years.

d. Trainers should work out a training programme for the trainee in accordance with the trainee's own qualities and the available facilities of the institution. Regular review will be required to allow for flexibility and for early identification of problems/deficiencies. The trainer should work with the trainee to create a Personal Development Plan (PDP).

e. Trainers are expected to provide appraisal and assessment of progress. Appraisal consists of determining what is needed and what evidence is required to show that this has been achieved. Assessment evaluates progress against objectives.

f. Trainee assessment should be provided in terms of:

    i. Training and career ambitions;

    ii. Training experience related to syllabus;

    iii. Achievements related to current plan.

g. In order to provide a close personal monitoring of the trainee during his/her training, the number of paediatric trainees should not exceed the number of paediatric teachers in the centre.

h. Trainers will meet the trainee at the beginning of the programme to define the educational contract for that trainee. Reviews of progress should take place at 3 monthly intervals during the first year of training to appraise the individual.

i. An annual assessment should be undertaken, ideally at a regional or national level, to review competencies achieved and to allow progress within the teaching

programme. Assessments should be detailed and contain statements of theoretical and practical experience accumulated by the trainee. It is expected that the trainee will also provide an account of the training received and problems encountered (portfolio). Reports will be submitted to the TPD or national body.

G. Requirements of Trainees

a. In order to gain the necessary depth of experience each trainee should be actively involved in the management care of a range of patients during the whole period of his/her speciality training.

b. Many countries have recently reformed their postgraduate medical education. New pedagogic initiatives and blueprints have been introduced to improve quality and effectiveness of the education in line with outcome-based education using the CanMEDS framework[1]. Competency based assessment, as an adjunct to knowledge assessment and portfolio completion, is an important aspect of evaluation. We would also recommend that reflective learning should be undertaken by all trainees. CanMEDS consists of the following competencies:

- Medical expert: integration of all CanMEDS roles applying medical knowledge, clinical skills and professional attitudes.
- Communicator: effectively facilitates doctor-patient relationship and dynamic exchanges before, during and after medical encounter.
- Collaborator: effectively work within healthcare system to achieve optimal patient care.
- Manager/integral participant in health care organisations, allocating resources and contributing to health care system.
- Health advocate: responsibly use expertise and influence to advance the

[1] http://www.royalcollege.ca/rcsite/canmeds/about-canmeds-e (accessed 7 Nov. 18)

health of individual patients, communities or populations.

- Scholar: demonstrates lifelong commitment to reflective learning and to creation, dissemination, translation of medical knowledge.
- Professional: committed to the health and wellbeing of individuals and society through ethical practice, professional led regulation and high personal standards of behaviour.

c. Logbook

i. The trainee should keep a written logbook of patients they have seen, procedures conducted, diagnostic and therapeutic interventions instigated and followed up. This will constitute part of their portfolio.

ii. The trainee will be required to keep his/her personal logbook or equivalent up-to-date according to national guidelines and European Union directives. The logbook must be endorsed by his/her tutor or authorised deputy. The trainee should attend and provide evidence of attendance at local, regional and national meetings.

iii. Attendance at international meetings is considered essential for tertiary care training in general. It is highly recommended to give presentations at these meetings.

d. Competency assessment

Competencies should be evaluated throughout the training period. There are a number of different tools for this, describing different aspects of training. Some of these are set out below. Formal and informal reflection on these assessments is an important aspect of their success.

Assessment	Purpose	Method

Mini-CEX (Mini-Clinical	Provides feedback on skills needed in clinical care	Trainer observes a trainee examining a patient and

EXamination)		explaining the management plan to the parents
CbD (Case-based Discussion)	Assesses clinical reasoning or decision making	Trainee presents a more complex case to the trainer and has a discussion about the evidence or basis for diagnosis or treatment.
DOPS (Directly Observed Procedural Skills)	Assesses practical skills	Trainee undertakes a practical skill whilst being observed
LEADER	Focuses on one or two of the following domains: ▪ Leadership in a team ▪ Effective services ▪ Acting in a team ▪ Direction setting ▪ Enabling improvement ▪ Reflection	A trainee is observed leading a team (e.g. during a resuscitation)
HAT (Handover Assessment Tool)	Evaluates handover skills	Handover episodes are supervised and discussed

DoC (Discussion of Correspondence)	Assesses letter writing skills	Clinic letters or discharges are reviewed and discussed
MSF (Multi-Source Feedback)	Provides wider feedback on the performance of the trainee	Confidential comments from a wide range of colleagues, patients and the trainee are sought

An example of a workplace-based assessment framework can be found here.

i. **Participation in audit project**

The trainee should conduct at least one systematic style review of a topic and in addition prepare a detailed evidence-based appraisal of a diagnostic test or a therapeutic intervention.

ii. **Competencies,** which are comprised of generic competencies, speciality-specific competencies and procedural skills.

a) **Generic competencies:**

1. History taking.
2. Clinical examination.
3. Therapeutics and safe prescribing.
4. Time management and decision making.
5. Decision making and clinical reasoning.
6. The patient as central focus of care.
7. Prioritisation of patient safety in clinical practice.
8. Team working and patient safety.

9. Principles of quality and safety improvement.
10. Infection control.
11. Managing long term conditions and promoting patient self-care.
12. Relationships with patients and communication within a consultation.
13. Breaking bad news.
14. Complaints and medical error.
15. Communication and cooperation with colleagues.
16. Health promotion and public health.
17. Principles of medical ethics and confidentiality.
18. Valid consent.
19. Legal framework for practice
20. Ethical research.
21. Evidence and guidelines.
22. Clinical audit.
23. Teaching and training.
24. Personal behaviour.

b) Speciality-specific competencies: Degree of required competency:	
H = High	Up to date speciality-specific knowledge and skills.
B = Basic	Core-training knowledge and skills.

H	1. Child protection and children in special circumstances. Including:

	a. Physical and emotional abuse; b. Sexual abuse; c. Neglect. d. Exploitation and Trafficking
H	2. Child and Adolescent Mental Health, including self-harm.
H	3. Acute Life Support / resuscitation, including: a. Heart failure; b. Arrhythmia; c. Syncope; d. Cardiac inflammation; e. Apnoeic episodes in an infant.
B	4. Dermatology, including: a. Eczema; b. Bites and infestations.
H	5. Endocrinology and metabolic medicine, including: a. DKA (Diabetic Keto-Acidosis); b. Hypoglycaemia; c. Adrenal insufficiency; d. Acid Base balance.
H	6. Acute and recurrent abdominal pain.
H	7. Diarrhoeal illness.
H	8. Constipation.
B	9. Gastrointestinal bleeding.
B	10. Acute liver failure.
B	11. Ectopic pregnancy.

B	12. Sexually transmitted infections (STIs).
B	13. Haematology and Oncology, including: a. Sickle cell disease and crisis; b. Anaemia; c. Purpura; d. Leukaemia/ lymphoma; e. The management of the immunocompromised patient.
H	14. Infection, Immunology and Allergy, including: a. Septic shock; b. Febrile child; c. Common exanthems; d. Inoculation injuries; e. Anaphylaxis.
B	15. Neonatology, including: a. Congenital heart disease; b. Jaundice; c. Sepsis.
H	16. Nephro-urology, including: a. Urinary tract infections (UTI); b. Acute scrotal pain.
H	17. Neurological conditions, including: a. Altered consciousness; b. Meningitis;

	c. Seizures; d. Headache; e. Blocked shunt.
B	18. Ophthalmological injuries and infections.
H	19. The management of poisoning.
H	20. Accidents including burns and (near) drowning.
B	21. Major incident management and support.
H	22. Respiratory medicine and otorhinolaryngology, including: a. Asthma; b. Acute stridor; c. Pneumothorax; d. Bronchiolitis; e. Pneumonia; f. Pertussis; g. Earache and discharge; h. Traumatic ear conditions; i. Epistaxis; j. Nasal trauma; k. Acute throat infections.
B	23. Dental problems.
H	24. Trauma, including: a. Head injury; b. Abdominal injury;

c) Procedural skills:

c. Chest injury;
d. Pelvic injury;
e. Crush injury;
f. Major burns;
g. Spinal injury.

1. Advanced life support/resuscitation procedures:
   i. Manual airway clearance manoeuvres;
   ii. Airway insertion;
   iii. Heimlich manoeuvre;
   iv. Oxygen delivery techniques;
   v. Orotracheal and nasotracheal intubation;
   vi. Mechanical ventilation;
   vii. Use of Continuous Positive Airways Pressure;
   viii. Replacement of tracheostomy tube;
   ix. Cricothyrotomy and percutaneous trans-tracheal ventilation;
   x. Needle thoracentesis;
   xi. Tube thoracotomy;
   xii. Intraosseous line insertion;
   xiii. Direct current electrical cardioversion defibrillation;
   xiv. External cardiac pacing;
   xv. Pericardiocentesis;
2. Dentistry:

i. Re-implantation of tooth;

ii. Splinting of tooth;

iii. Reduction of temporomandibular joint dislocation.

3. Ear Nose and Throat (ENT) procedures:

i. Control of epistaxis with cautery, anterior packing, posterior packing and balloon replacement:

ii. Cerumen removal;

iii. Incision and drainage of auricular haematoma;

iv. Aural wick insertion.

4. Foreign body removal:

i. Nose;

ii. Ear;

iii. In soft tissue;

iv. Eye;

v. Ring removal

vi. Wound

5. Gastrointestinal procedures:

i. Oro/nasogastric tube replacement;

ii. Gastrostomy tube replacement;

iii. Gastric lavage;

iv. Hernia reduction;

v. Reduction of rectal prolapse.

6. Genitourinary:

i. Paraphimosis reduction;

ii. Urethral catheterisation.

7. Minor surgical procedures:
    i. Infiltration of local anaesthetic;
    ii. Incision and drainage of abscesses;
    iii. Incision and drainage of paronychia;
    iv. Evacuation of subungual haematoma;
    v. Wound exploration and irrigation;
    vi. Wound repair with glue, adhesive strips and sutures;
    vii. Fingernail/nailbed injuries;
    viii. Emergency management of amputation.
8. Musculoskeletal techniques:
    i. Immobilisation techniques;
    ii. Application of broad arm sling;
    iii. Application of collar and cuff sling;
    iv. Application of Thomas Splint;
    v. Pelvic stabilisation techniques;
    vi. Spinal immobilisation/log rolling.
9. Fracture/dislocation reduction techniques:
    i. Shoulder dislocation;
    ii. Elbow dislocation;
    iii. Phalangeal dislocation;
    iv. Supracondylar fracture with limb-threatening vascular compromise;
    v. Patellar dislocation;
    vi. Ankle reduction.

10. Plaster techniques:
    i. Back slabs;
    ii. Splints;
    iii. Plaster of Paris.
11. Neurological procedures: Lumbar puncture.
12. Ophthalmic procedures:
    i. Conjunctival irrigation;
    ii. Contact lens removal;
    iii. Eversion of eyelids;
    iv. Use of slit lamp.
13. Pain relief and sedation:
    i. Pain scoring;
    ii. Non-pharmacologic measures;
    iii. Pharmacologic approaches;
    iv. Local anaesthetics;
    v. Regional nerve blocks;
    vi. Procedural sedation techniques.

Glossary

CanMEDS	http://www.royalcollege.ca/rcsite/canmeds/about-canmeds-e
CbD	Case-based Discussion
CESP	Confederation of European Specialists in Paediatrics
DKA	Diabetic Keto-Acidosis
DoC	Discussion of Correspondence
DOPS	Directly Observed Procedural Skills
EAP	European Academy of Paediatrics
EBP	European Board of Paediatrics
ED	Emergency Department
ENT	Ear Nose and Throat
EU	European Union
EUSEM	European Society of Emergency Medicine
HAT	Handover Assessment Tool
Mini-CEX	Mini-Clinical EXamination
MSF	Multi-Source Feedback
NTA	National Training Authority
PDP	Personal Development Plan
PEM	Paediatric Emergency Medicine
PEMP	Paediatric Emergency Medicine Physician
PICU	Paediatric Intensive Care Unit
STI	Sexually Transmitted Infection
TPD	Training Programme Director
UEMS	Union Européenne des Medicins Specialistes
UTI	Urinary Tract Infection