



European Academy of Paediatrics

Paediatric Section of U.E.M.S.
Union Européenne des Médecins Spécialistes



Curriculum for Common Trunk Training in Paediatrics

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INTRODUCTION

Paediatricians practise in many different settings, including primary, secondary and tertiary care. All need 'specialist' skills pertinent to that work, and thus specialist training. The EAP strongly supports this, but also the need for a common training that all paediatricians should undertake. For many countries, completion of this core training will be a prelude or even prerequisite to specialist training, whether that further training is in primary care, acute or general paediatrics, or in a subspecialty.

This syllabus seeks to set out a road map to aid both trainees and their supervisors in this quest. It focuses on hospital-based paediatrics but clearly interfaces with both primary care and tertiary paediatrics.

The purpose of this syllabus is to ensure that those completing common trunk training in Europe have excellent communication and interpersonal skills, display paediatric expertise in terms of history taking, examination and performance of procedures, are professional and focussed on patient safety and harm reduction, develop leadership and teamwork skills and a commitment to lifelong learning.

Core paediatric training has three key elements:

1. Clinical experience gained from **direct patient care**, supervised by **senior clinicians** and based on a **clinical curriculum** and with a focus on **excellent clinical skills, sound decision making** and the **judicious use of investigations**. On completion of the training, the candidate should be competent to look after most common paediatric conditions.
2. Professional and ethical practice learnt through mentorship by senior clinicians with a commitment to quality improvement and harm reduction in both the inpatient and ambulatory settings.
3. Academic knowledge and proof of clinical ability as determined by various assessment tools. Trainees will be assessed at intervals throughout the Programme in the workplace. These assessments must be recorded.

Training Programme Requirements:

- Training must take place within a postgraduate training programme accredited by the national training body.
- Experience is required in both the inpatient and ambulatory settings.
- Paediatric training must include experience in preventive, acute and chronic paediatrics, neonatology, behavioural/developmental and emergency medicine.
- The candidate must have achieved the competencies as set out by their respective national bodies.

Duration of Training

- European medical specialty training is governed by the EU Directive 2001/19/EC and is set at **a minimum of 5 years of full-time training** as a primary medical specialty.¹
- According to the UEMS Charter on Training, the duration of training of medical specialists **must** be sufficient to ensure training for independent practice of the specialty after the completion of training.²
- Thus, the EAP/paediatric section of the UEMS recommends that the Common Trunk Curriculum training in general paediatrics is 3 years followed by 2-3 years for paediatric speciality training.
- However, National Training Authorities (NTA) may decide how they wish to organise the recommended Curriculum within this generally accepted time frame.

¹ Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications. Official Journal of the European Communities L255/22–142, 30.9.2005.

² UEMS Charter on Training of Medical Specialists in the European Community. <http://www.uems.net/uploadedfiles/176.pdf> Accessed 26.11.2014.

GENERAL GOALS OF COMMON TRUNK TRAINING IN PAEDIATRICS

The **general goals** of core training include the acquisition of skills, knowledge and attitudes in relation to seven key areas:

1. Communication and interpersonal skills
2. Ethics and professionalism
3. Patient safety and quality improvement
4. Paediatric expertise (clinical skills / procedures / investigation / interpretation)
5. Teamwork and collaborative skills
6. Leadership, management skills and a commitment to lifelong learning
7. Health advocacy and global health awareness

1. Communication and interpersonal skills

Good communication is a core clinical skill for paediatricians, utilising effective listening and nonverbal cues.

Trainees should learn to:

- 1.1. Establish a positive therapeutic relationship with children/adolescents and their families in an age appropriate manner.
- 1.2. Respect patient confidentiality, privacy, autonomy and ability to consent.
- 1.3. Communicate relevant understandable information and provide support in a crisis situation.
- 1.4. Elicit and draw together relevant information and perspectives of children, families, colleagues and other professionals/caregivers; taking into account factors such as age, gender, disability, ethno cultural background, social support and emotional influences, and appropriately respecting the child and family's different value systems.
- 1.5. Develop a common understanding on issues, problems and plans with patients, families, and other professionals to develop a shared plan of care.
- 1.6. Convey effective oral and written information about a medical encounter, both to families and to other professionals.

2. Ethics and professionalism

Trainees must learn to display the following:

- 2.1. Compassion, integrity, and respect for others
- 2.2. Sensitivity and responsiveness to a diverse patient population, including diversity in gender, age, culture, race, religion, and disability
- 2.3. Responsiveness to situations where the wellbeing of the child is endangered/compromised
- 2.4. Accountability to patients, society and the profession
- 2.5. Compliance with all legal and moral obligations for reporting disease and potential or real abuse/neglect
- 2.6. Recognition of special issues pertaining to children participating in research

3. Patient safety and quality improvement

Trainees should

- 3.1. Participate in activities that contribute to effectiveness/quality of the healthcare system and patient safety.
- 3.2. Commit to quality assurance through systemic quality process evaluation and improvement.
- 3.3. Maintain their own health and that of the team they work with.

4. Paediatric expertise

This is covered in the syllabus below.

5. Teamwork and collaborative skills

Trainees should:

- 5.1. Participate appropriately in a professional healthcare team to achieve optimal patient care.
- 5.2. Maintain respect for the views of colleagues in a range of paediatric roles.
- 5.3. Maintain effective time management skills.
- 5.4. Ensure proper handover, referral and discharge planning.
- 5.5. Understand the effects of national and international policies on child health.

6. Leadership, management skills and a commitment to lifelong learning

Trainees should learn to:

- 6.1. Effectively delegate and follow-up on tasks, be able to manage stressful situations and know when to ask for help.
- 6.2. Deliver the highest quality of care.
- 6.3. Manage tasks including prioritizing, and assigning
- 6.4. Maintain comprehensive, timely, and legible medical and hospital records and legal documents.
- 6.5. Make a lifelong commitment to learning by accepting responsibility for developing implementing and monitoring a personal continuing education strategy.
- 6.6. Conduct a systematic review of the literature in search for evidence.
- 6.7. Use a range of sources of research publications and electronic literature databases.

7. Health advocacy and global health awareness

Paediatric trainees, as Health advocates, must responsibly use their influence and expertise to advance child health as well as the well-being of individual patients, families, communities and populations.

GENERAL COMPETENCES

The **general competences** a paediatrician should acquire at the end of this 3-year European Curriculum Training in general paediatrics would be:

1. To understand the roles and responsibilities of paediatricians.
2. To acquire the generic competencies (knowledge, skills and behaviour) that relate to clinical practice.
3. To maintain Good Medical Practice.
4. To promote Teaching, Training, Assessing, and Appraising.
5. To achieve good relationships with patients.
6. To be able to work with colleagues as a multidisciplinary team.

Duties of a doctor

Trainees should understand the roles and responsibilities of paediatricians:

- In the safeguarding of babies, children and adolescents.
- To support and enable parents and carers to be effective in caring for their children.
- To know where and when to ask for help, support, and supervision.
- To begin to understand their role in the management of chronic illness in children.
- To follow the principle that all decisions are to be made in the best interests of the child.

To acquire the generic competencies that relate to clinical practice

Trainees should acquire the knowledge, skills and behaviour that relate to clinical practice.

- Skills in advanced neonatal and paediatric life support.
- History taking, clinical examination, effective skills in paediatric assessment and formulating an appropriate differential diagnosis in paediatrics
- Initial management of ill-health and clinical conditions in paediatrics, seeking additional advice and opinion as appropriate.
- Recognition of behavioural, emotional and psychosocial aspects of illness in children and families.
- Safe practical skills in paediatrics.

TRAINEES WILL BE ABLE TO PERFORM INDEPENDENTLY	Common Trunk General Paeds.
Capillary or peripheral blood samplings	✓
Electrocardiogram	✓
Lumbar puncture	✓
Urethral catheterisation, supra-pubic aspiration of urine	✓
Collection of blood from central lines	✓
Umbilical venous and artery cannulation and sampling	✓

Bag, valve and mask ventilation	✓
External chest compression	✓
Tracheal intubation of term newborn babies	✓
Tracheal intubation of preterm babies and older children	✓
Administration of exogenous surfactant	✓
Needle thoracocentesis for pleural effusion or pneumothorax	*
Administer intradermal, subcutaneous, intramuscular & intravenous drugs	✓
Insertion of intraosseous needle	*
Percutaneous long line insertion	*
Abdominal paracentesis	*

* may need supervision

- Clear record-keeping and report-writing.
- Order the appropriate investigations in paediatrics: blood tests, imaging and know how to interpret them.
- Safe prescribing of common drugs in paediatrics: appropriate indications, dosages in babies, children and adolescents, drug interactions, how to use formulary, guidelines and recognise adverse events.
- Understanding of safeguarding and vulnerability in paediatrics.
- Effective responses to challenge, complexity and stress in paediatrics.

Maintaining Good Medical Practice

Trainees must ensure they are up-to-date, conform with highest standards of practice, and promote evidence-based medicine where possible.

Trainees should demonstrate:

- Knowledge of the science-base for paediatrics.
- Knowledge of common and serious paediatric conditions and their management.
- An understanding of growth, development, health and well-being in paediatrics.
- An understanding of health promotion and public health issues in paediatrics.
- An understanding of an evidence-based approach to paediatric practice.
- A reflective approach to improvement of equality and diversity in paediatric practice.
- Knowledge of the law regarding paediatric practice.

Teaching, Training, Assessing and Appraising

Trainees should achieve:

- An understanding of effective teaching in paediatrics.
- A positive approach to receiving mentoring and educational supervision.
- An understanding of the need for an ethical and rigorous approach to research in paediatrics.

Relationships with patients and families

Trainees should learn how to effectively communicate with children, young people and their families.

Trainees should learn throughout their 3-year training programme in general paediatrics:

- An understanding of effective communication and interpersonal skills with children of all ages.
- Manifest empathy and sensitivity and skills in engaging the trust and consent from children and their families.
- Understanding of listening skills and basic skills in giving information and advice to young people and their families.
- Respect the religious beliefs and behaviours of foreign children and families.

Working with colleagues

Trainees should develop during their 3-year programme of Common Trunk in general paediatrics:

- Effective communication and interpersonal skills with colleagues.
- Professional respect for the contribution of colleagues in a range of roles in paediatric practice.
- Effective time management skills.
- Effective handover, referral and discharge procedures in paediatrics.
- An understanding of the effects of local, national and international policies on their work and on the health of children.

Probity

Trainees should respect the high standards of care and professional behaviour within paediatrics and the medical profession as a whole:

- Ethical personal and professional practice in providing safe clinical care.
- Reliability and responsibility in ensuring their accessibility to colleagues and patients and their families.
- An understanding of the importance of self-awareness and a responsible approach to personal health, stress and well-being.

GENERAL SKILLS AND COMPETENCIES

NORMAL AND ABNORMAL DEVELOPMENT

Knowledge

- Normal and abnormal gross and fine motor-, cognitive-, social and emotional-, receptive and expressive language development of infants and young children
- Pre-, peri- and postnatal risk factors and causes of delayed- or abnormal development
- Common patterns of developmental abnormality (gross motor-, speech- and language, global)
- Range of deficits in common genetic syndromes (eg, fragile X, trisomy 21, fetal alcohol syndrome)
- Current neonatal and childhood screening tests used in respective national child health visits
- Screening- and diagnostic assessment instruments for developmental delay and mental retardation
- Indications for imaging tools (ultrasound, MRI), metabolic and genetic testing
- Indications for physio-, educational-, occupational- and/or speech therapy
- Indications for referral of a child to a paediatric neurologist, speech pathologist

Skills

- Taking a history of developmental milestones reached
- Developmental assessment of a child 5 years AND under.
- Basic assessment of hearing and vision
- Initiation of appropriate investigations to make a diagnosis based upon the history and pattern of abnormal development observed
- Communication of findings and implications of developmental assessment to parents

NORMAL AND ABNORMAL GROWTH (SEE ALSO ENDOCRINE DISORDERS)

Knowledge base

- Normal physical growth from birth to the completion of puberty
- Genetic, hormonal, nutritional, environmental, psychological, and social factors affecting normal growth
- Common disorders of height and weight which need to be evaluated
- Effects of fetal growth restriction on long-term health
- Meaning, uses and limitations of bone age
- Causes of poor weight gain in infants and young children
- Normal and abnormal variations in head shape

Specific conditions

- Common causes of short or tall stature
- Common genetic conditions affecting growth

Skills

- Weighting and measuring an infant and child accurately
- Assessment of normal and abnormal growth at all stages of development using appropriate growth charts, correcting for prematurity when appropriate
- Reassuring families about normal growth patterns and communicating the implications of abnormal growth
- Assessment of nutritional status by using anthropometric measurements and calculation of body mass index (BMI)
- Investigations in a child with short or tall stature
- Advising carers on management with failure to thrive if there are eating difficulties

NUTRITION

Knowledge

- Recommended nutritional requirements at different ages
- Effect of disease states on nutritional requirements
- Practical aspects and benefits of breast feeding
- Practical aspects of infant formulae
- Health implications of restricted diets, fad diets, diets determined by custom or socioeconomic situation
- Indications for, physiological basis of and complications of parenteral and enteral nutrition

Specific conditions

- Obesity
- Failure to thrive
- Nutritional deficiencies and excesses
- Feeding disorders
- Recognition and early management of anorexia nervosa

Skills

- Nutritional assessment
- Interpretation of biochemical and other laboratory indices of nutritional status

PHARMACOLOGY

Knowledge base

- Pharmacodynamics: absorption / systemic availability / interpretation of drug concentrations
- Drug interactions & adverse drug reactions
- Pathophysiology of drug action mechanisms, correction of pathophysiological states
- Pharmacokinetics in children in different age groups
- Placental transfer and breast milk excretion of drugs
- Drug toxicity and therapeutic drug monitoring
- Guidelines and protocols for antimicrobial prescribing
- Drug dosage modification in disease (liver/kidney dysfunction)
- Drug selection: generic vs. labelled / cost implications / compliance issues / health insurance planning
- Off label use
- Complementary and alternative medicines: availability / prevalence / efficacy

Specific conditions

- Management of pain
- Principles of sedation for procedures
- Drug withdrawal

Skills

- Prescribing skills / rational drug therapy
- Formulary use in practice

RESEARCH

Knowledge base

- Biostatistics
- Types of variables
- Data distribution patterns
- Common statistical tests
- Understand measurement of association
- Regression analysis
- Diagnostic tests (sensitivity and specificity, positive and negative predictive value)
- Principles of systematic reviews and meta- analysis (interpretation and application)
- Principles of epidemiology and types of epidemiologic studies
- Bias and confounding variables
- Causality (causal versus association)
- Incidence and prevalence
- Decision analysis
- Cost- benefit, cost- effectiveness and outcomes
- Sensitivity analysis
- Measurement principle (reliability and validity; accuracy and precision)

Skills

- Assessment of study design
- Assessment of generalization of results
- Critical reading of literature
- Application of information to patient care
- Appropriate evaluation and critique of medical literature
- Research ethics

SAFEGUARDING

Knowledge base

- WHO definitions of neglect and of physical, emotional, and sexual abuse
- Other forms of abuse: bullying at school, cyber-bullying; institutional abuse, Munchhausen by proxy etc.
- Family, social and other characteristics associated with increased risk of abuse/neglect
- Features in the history that raise suspicions that the presenting symptoms are due to abuse or neglect
- Clinical signs of non-accidental injuries
- Diseases that may mimic physical abuse/neglect
- Sequelae of shaking of a child during the first year after birth
- Common fracture locations and types in physically abused children
- Locations of fractures, bruises, burns/scalds, scars that are rarely accidental
- Clinical, psychological and behavioural signs suggesting emotional abuse
- Possible physical, psychological, behavioural and maturational problems due to neglect or abuse
- Clinical, psychological and behavioural signs suggesting child sexual abuse
- Indications for referral of a child to other specialists experienced in child abuse evaluation
- Indications for referral to social and/or psychological services, interprofessional care

Skills

- Recognition and assessment of suspected acute physical, emotional, sexual abuse
- Differentiation of intentional neglect from deprivation associated with poverty or low education
- Utilization of appropriate laboratory tests and skeletal-imaging to differentiate between disease, accidental and intentional injury, including sexual abuse
- Complete documentation of clinical signs and procedures that are made to identify the abuse or neglect in accordance with local and/or national law
- Appropriate communication with the abused/neglected child and the family

SUBSTANCE ABUSE/TOXICOLOGY/POISONING

Knowledge base

- Epidemiology of substance abuse: current data & trends / developmental patterns / risk factors (genetic & social)
- Common substances abused / age profiles
- Common childhood poisonings / exposures
- Epidemiology of poisoning: local / global / age demographics
- Prevention measures
- Poison centres / operating procedures / poison information data / online
- Toxicology signs and symptoms
- Types of ingestions / poisonings
- Community and home chemical hazards: pesticides / industrial waste / occupational home renovation risks, lead poisoning
- Poisoning as possible sign of child abuse / neglect
- Poisoning by unknown agent

Specific conditions

- Paracetamol poisoning
- Specific therapies elimination measures/antidotes
- Toxins: button batteries / coins / iron / ethylene glycol
- Plants / complementary medicines / over the counter medicines

Skills

- Assessment / vital signs, monitoring / history taking
- Acute management
- Diagnosis: clinical assessment / laboratory methods, screening methods

SPECIALIST SKILLS AND COMPETENCIES

ADOLESCENT MEDICINE

Knowledge

- Legal and ethical principles dealing with adolescents
- Normal bio-psycho-social development of puberty in boys and girls
- Level of cognitive reasoning in early, middle and late adolescents
- Influence of family and peers in modelling adolescent behaviour
- Epidemiology of the pattern of social and sexual behaviour at various ages
- Gender and sex identity
- Safer sex practices, sexually transmitted infections, contraception and post-coital contraception
- Causes of delayed puberty
- Impact of chronic conditions on adolescent social, psychological and physical development
- Transition from paediatric to adult care

Skills

- Effective communication, developing a professional relationship with adolescents, including evaluation of compliance
- Discussion with a young person the concept of confidentiality and assent/consent depending on the degree of his/her maturity and in accordance with the local legal guidance
- Assessment of growth and development including sexual maturity rating (Tanner stages)
- Assessment and diagnosis of substance misuse, violence and risk-taking behaviour
- Assessment of suspected psychiatric symptoms using validated screening questionnaires
- Assessment and diagnosis of eating disorders
- Assessment and delivery of anticipatory guidance of healthy lifestyle including eating habits, physical exercise and media
- Planning, providing and integrating care for adolescents

ALLERGIC DISEASES

Knowledge base

- Knowledge of basis of host defence mechanisms
- Basic knowledge of immunology relevant to allergic diseases
- Influence of genetic and environmental factors on allergic disease
- Variations in normal immune response with age
- Various phenotypes of allergic diseases
- Basic diagnostic laboratory techniques involving the immune system
- Pharmacologic and immunologic therapy of allergic disorders

Specific conditions

- Allergic diseases, including rhinitis, eczema and anaphylaxis
- Allergy testing (including skin prick testing, RAST, serum IgE, serum tryptase)
- Indications for immunoglobulin therapy
- Management of cow's milk protein intolerance

Skills

- Taking a history in allergic patients
- Recognizing clinical symptoms and signs of allergy
- Prescribing a diet for food allergic children
- Demonstration of the use of an adrenalin pre-loaded injection
- Demonstration of the performance and interpretation of the skin prick test
- Management of acute anaphylaxis

CARDIAC DISEASES

Knowledge - general

- Anatomy physiology and pathophysiology of normal heart; cardiac malformations and diseases
- Assessment and initial treatment of congenital heart disease
- Foetal circulation and changes in circulation at birth
- Clinical manifestations of heart disease
- Basis understanding and means of echocardiography
- Principles of pharmacotherapy
- Referral thresholds for a specialist cardiology opinion

Knowledge – specific

- Common causes of chest pain
- Common murmurs
- Common ECG abnormalities
- Endocarditis (causes, investigations, indications for prophylaxis)
- Palpitations, tachycardia, arrhythmias
- Syncope
- Common causes of hypertension

Skills

- Assessment of the cardiovascular system, including pulses
- Assessment of heart sounds and murmurs
- Measurement of blood pressure in different ages
- Cardiopulmonary resuscitation

COMMUNITY MEDICINE

Knowledge

- Local, national, and international structures of community based healthcare
- Key social determinants of child health and well being
- Effects of family composition, socioeconomic factors and poverty on child health
- Community assets and resources toward preventing illness, injury, and related morbidity and mortality
- Resources that may be available from health agencies, including the voluntary sector and allied health professionals
- Support programs for families and children with special health care needs
- National vaccination program

Specific conditions

- Complex disability in the pre-school child

Skills

- Ability to work together with schools, child care, facilities and others
- Management of children in need of protection and the pathways to ensure follow-up
- Demonstration of advocacy skills to address relevant individual, community, and population health issues

DERMATOLOGY

Knowledge base

- Anatomy and histology of the skin, hair and nails
- Characteristics of common dermatological problems and serious erythematous, rashes

Specific conditions

- Common pigmentary or vascular congenital lesions e.g. nevi, haemangiomas
- Molluscum contagiosum, warts
- Hair disorders (eg, hypertrichosis and hair loss)
- Pigmented lesions (hyper- and hypopigmentation)
- Contact dermatitis
- Seborrhoeic and atopic dermatitis
- Urticaria
- Acne

Skills

- To recognize common exanthemas
- Skin manifestations of common infectious diseases
- Skin manifestations of systemic disease (i.e. Henoch Schonlein, Lupus)
- Identify mucosal, skin infection, bacterial infected eczema, eczema herpeticum
- Plan and manage appropriate treatment

DISEASES OF THE ORBITA AND EYES

Knowledge base

- Normal vision development
- Common causes of visual impairment
- Ophthalmic presentations of systemic diseases

Specific conditions

- Management of squint
- Acute management of trauma
- Disorders of refraction
- Conjunctivitis
- Retinopathy of prematurity
- Orbital infection, orbital swelling, oedema

Skills

- Measure visual acuity by use of standard visual acuity charts
- Check strabismus by strabismus charts,
- Examination of the fundus of the eye

ENT DISORDERS

Knowledge base

- Anatomy and pathophysiology of the ear, nose, throat and upper airway
- Congenital malformations (external and middle ear)
- Deafness and hearing loss

Specific conditions

- Rhinitis (allergic rhinitis, infectious rhinitis), polyps
- Epistaxis
- Trauma or foreign body
- Tonsillitis and complications, adenoidal hypertrophy
- Pharyngitis
- Cleft lip, cleft palate
- Laryngitis, Croup
- Otitis media / otitis externa
- Mastoiditis and sinusitis

Skills

- Understand the techniques for hearing evaluation at different ages
- Performance of simple tests of hearing
- Interpretation of soft tissue X-rays in acute upper airway obstruction
- Institute the appropriate treatment for laryngitis

ENDOCRINE DISORDERS AND DIABETES

Knowledge base

- Normal anatomy, embryology, physiology of the endocrine glands
- Normal growth patterns, including constitutional delay and growth disorders
- Normal and abnormal puberty development, ambiguous genitalia, precocious puberty, disorders of sexual development
- Recognition and initial investigation of commonly presenting endocrine disorders, including hypothyroidism, AGS, diabetes type 1 and 2
- Understanding of the endocrine manifestation of systemic diseases
- Understanding the pathophysiology and signs of diabetes

Specific conditions

- Common congenital and acquired endocrine disorders, including pituitary, thyroid, and adrenal disease
- Ambiguous genitalia
- Maldescended testis
- Short and tall stature
- Precocious puberty and pubertal delay
- Thyroid disease and adrenal disease
- Obesity, including complications and clinical management strategies

Skills

- Taking history in endocrine disorders
- Ability to measure growth accurately and to chart and interpret it appropriately
- Ability to assess pubertal status (Tanner staging)
- Ability to institute appropriate insulin regimes to treat diabetes mellitus
- Ability to manage acute diabetic ketoacidosis, including assessment of major complications
- Ability to manage acute hypoglycaemia, including an understanding of the importance of glucose testing and administration in patients with impaired consciousness

EMERGENCY MEDICINE

Knowledge base

- Pathophysiology of shock / respiratory failure / cardiopulmonary arrest
- Principles of monitoring: invasive / non-invasive, biochemistry
- Fluid & electrolyte management in the acutely ill patient
- Intra & inter-hospital transport
- Child protection issues

Specific conditions

- Assessment/ triage of the acutely ill child
- Acute respiratory distress, hypoxia
- Shock
- Acute allergy/anaphylaxis
- Acute febrile illness
- Burns
- Diarrhoea / vomiting / dehydration
- Seizures
- Syncope
- Coma
- Trauma: abdominal / multisystem / head / limb
- Wound and laceration management
- Special needs children in emergency department

Skills

- Resuscitation, including access
- Acute seizure intervention
- Patient stabilisation and transfer skills

GASTROINTESTINAL AND HEPATIC DISEASES

Knowledge base

- Anatomy, physiology and pathophysiology of the gastrointestinal tract, liver, biliary tract and pancreas.
- Normal nutritional needs and common causes of malnutrition
- GI symptoms of systemic disease
- Gastrointestinal infectious diseases and infection control
- Indications for diagnostic procedures – eg , sonography, radiology, endoscopy and biopsy

Specific conditions

- Acute and chronic abdominal pain
- Common congenital conditions
- Constipation
- Common causes of dysphagia
- Gastroenteritis and diarrhoea
- Principles of oral rehydration and intravenous fluid therapy
- GI Bleeding
- Gastro-oesophageal reflux
- Common causes of hepatitis
- Common causes of jaundice
- Inflammatory bowel disease
- Iron deficiency anaemia
- Malabsorption, including coeliac disease and cystic fibrosis

Skills

- Taking history in GI and hepatic diseases
- Assessment of GI system and liver
- Assessment of nutritional status
- Ability to manage paracetamol poisoning

GENETICS AND DYSMORPHOLOGY

Knowledge base

- Principles and molecular basis of Mendelian- and non-Mendelian inheritance
- Embryological basis of malformation and environmental factors in fetal development
- Principles of dysmorphology and syndrome identification
- Basis of genetic and molecular techniques
- Ethical and social implications of genetic testing
- Indications and limitations of prenatal diagnosis
- Rationale of newborn screening

Skills

- Construction and interpretation of a family pedigree
- Recognition of common genetic, chromosomal and dysmorphic syndromes
- Genetic counselling related to common conditions
- Ability to access genetic databases

HAEMATOLOGICAL AND ONCOLOGY DISORDERS

Knowledge base

- Physiology and pathophysiology of bone marrow derived cells
- Pathophysiology of anaemia and haemolytic diseases
- Physiology and pathophysiology of the coagulation system
- Management of common non-malignant haematological conditions
- Risks and benefits of blood transfusion
- Principles of management of cancer
- Short and long term side effects of chemotherapy and radiotherapy
- Indications for bone marrow transplantation
- Principles of palliative care

Specific conditions

- Anaemia
- Sickle cell disease and thalassaemias
- Acute lymphoblastic leukaemia
- Lymph node enlargement, lymphadenopathy
- Hodgkin and non-Hodgkin lymphoma
- Medullo-, neuro-, nephro-, hepatoblastoma
- Coagulation disorders, haemophilia
- Common causes of neutropenia
- Common causes of purpura

Skills

- Taking history in haematologic and oncologic disorders
- Ability to assess children presenting with haematological or oncological conditions
- Interpretation of blood smears results
- Acute management of child with febrile neutropenia
- Management of long term central lines
- Care of child requiring isolation

INFECTIOUS DISEASES AND IMMUNDEFICIENCIES

Knowledge base

- Physiology and pathophysiology of host defence mechanisms
- Common infectious agents: epidemiology / pathogenicity / characteristics
- Common infant and childhood infections: viral / bacterial / fungal / parasitic
- Appropriate and safe prescribing of antibiotic or antiviral therapy
- Principles of infection control
- Principles of immunisation and national policy
- Patterns of antimicrobial resistance / safe prescribing
- Use of diagnostic tests, culture methods bacterial & viral

Specific conditions

- Perinatal infections
- Pyrexia of unknown origin
- Communicable disease control/prevention/immunisation
- Diarrhoea and vomiting
- Pneumonia
- Septic shock
- TB
- HIV
- Travel medicine / infections / immunisation

Skills

- Taking history in infectious diseases
- Ability to assess child presenting with infectious disease
- Care of child requiring isolation
- Hygiene
- Adequate prescribing
- Considering development of resistance

MENTAL HEALTH AND BEHAVIOURAL DISORDERS

Knowledge

- Stages of cognitive and emotional development from infancy to adolescence
- Biological function of the attachment system, attachment behaviour and style
- Risk factors affecting the role of parent-child attachment and relationship
- Common predisposing and protective factors related to mental health
- Long-term effects of trauma and neglect in the first years of life
- Regulatory disorders of infancy and early childhood
- Common emotional and behavioural problems in preschool and school-age children
- Factors influencing learning and school performance
- Definition and clinical presentation of intellectual disabilities, attention deficit/hyperactivity disorder or autism spectrum disorders
- Indications for specific genetic and metabolic tests and imaging tools in children with intellectual disabilities
- Diagnostic criteria of somatoform disorders (SFD) and chronic fatigue syndrome (CFS)
- Basic investigations in cases of possible SFD and CFS
- Clinical features and presentation of emotional disturbances (e.g., anxiety, depression)
- Clinical features of acute psychosis

Skills

- Evaluation and diagnostic formulation of common emotional and behavioural problems in preschool and school-age children
- Management strategies and counselling for common emotional and behavioural problems including referral as appropriate
- Initial assessment of a child with intellectual difficulties, hyperkinetic disorder or autism spectrum disorder
- Using rating scales and questionnaires for assessment of mental health problems

METABOLIC MEDICINE

Knowledge

- Principles of metabolic disorders: mitochondrial, , beta-oxidation, lipids, carbohydrates and amino acids; storage diseases
- Metabolic crisis
- Common presentations of metabolic disease (including encephalopathy, neurodevelopmental regression, weakness, visceromegaly and poor growth)
- Genetic base of common metabolic disorders
- Screening tests for metabolic disease
- Dietary principles in the care of children with metabolic disease

Specific Conditions

- Acute metabolic presentation in the newborn and infant

Skills

- Adequate sampling of biomaterials
- Newborn screening for metabolic diseases
- Consider underlying metabolic disease in unclear clinical presentation

NEONATOLOGY

Knowledge base

- Fetal physiology and the physiology of extrauterine adaptation
- Antenatal and perinatal effects on neonatal outcomes
- Epidemiology: Outcomes for survival and factors influencing outcome
- Prematurity and low birthweight sequelae
- Growth aberrance: IUGR, SGA/LGA
- Principles of neonatal stabilisation/ resuscitation
- Introduction of mechanical ventilation and principles of assisted ventilation
- Principles of surfactant and nitric oxide administration
- Neonatal nutrition and feeding
- Newborn screening
- Neonatal jaundice/ Exchange transfusion
- Congenital and neonatal infections
- Congenital malformations, major and minor including surgical/cardiac malformations
- Respiratory conditions, RDS
- Neonatal neurology including hypoxic ischaemic encephalopathy/hypotonia
- Drug withdrawal
- Ethical principles involved in the management of the dying baby
- Prescribing for newborns and breastfeeding mothers

Skills

- Gestational assessment
- Examination of the newborn at birth and 6 weeks examination
- Neonatal resuscitation
- Insertion of chest drain
- Stabilisation and transfer of the sick neonate
- Blood sampling, interpretation of common laboratory tests, umbilical arterial and venous catheterization
- Fluid management
- Use of /imaging / point of care abdominal ultrasound/cardiac evaluation/cranial ultrasound interpretation/IVH
- Communication with parents/family

NEPHRO-UROLOGY DISORDERS

Knowledge base

- Development of the kidney, urinary tract and external genitalia.
- Renal physiology and pathophysiology, principles of fluid balance, electrolyte and acid base regulation
- Renal imaging and function tests
- Drug prescribing in renal failure

Specific conditions

- Urinary tract infection
- Vesicoureteric obstruction and reflux
- Enuresis: nocturnal and diurnal
- Management of voiding disorders
- Haematuria/proteinuria, including nephrotic syndrome
- Haemolytic uraemic syndrome
- Common causes of hypertension
- Indications for renal dialysis and transplantation
- Acute scrotal pain and torsion

Skills

- Taking history in nephro-urological disorders
- Measurement of blood pressure
- Appropriate urine collection: catheterization / bladder aspiration
- Interpretation of urinalysis, microscopy, dipstick
- Interpretation of biochemical investigation results
- Recognized renal failure

NEUROLOGY AND NEUROMUSCULAR DISORDERS

Knowledge base

- Anatomy, physiology and pathophysiology of the central and peripheral nervous system
- Pathophysiology of common disorders affecting the CNS
- Common causes of disability
- Principles of antiepileptic drugs
- Sensory deficits e.g. hearing and visual impairment

Specific conditions

- Meningitis
- Acute encephalopathy
- Cerebral palsy
- Common causes of neuro-degenerative or neuro-metabolic disease
- Common neuromuscular diseases
- Febrile and afebrile seizures
- Headache (acute and chronic) including migraine
- Hypotonia
- Neural tube defects
- Neuropathies
- Traumatic brain injury and rehabilitation

Skills

- Taking history in neurological disorders
- Acute management of meningitis and coma
- Age appropriate neurological examination
- Detailed developmental assessment
- Interpretation of common neuroimaging abnormalities by CT, MRI or ultrasound
- Lumbar puncture and interpretation of results
- Ability to communicate with disabled children and their families

PRE- PERI- AND POST- SURGICAL CARE

Knowledge

- Basic principles of pre- operative assessment
- Basic principles of surgical referrals
- Principles of peri-operative management
- Principles of post- operative management, including pain management
- Know high risk patient factors

Specific conditions

- Hernias
- Maldescended testis
- The acute abdomen
- Acute scrotal pain
- Bowel obstruction
- Appendicitis
- Abscess

Skills

- Be able to diagnose acute abdomen, peritonitis, ileus
- Able to take care of surgical wounds

RESPIRATORY DISORDERS

Knowledge base

- Physiology and pathophysiology of the respiratory system in children, including age dependent changes.
- Important epidemiological and genetic factors for respiratory diseases, including tobacco smoke exposure, pollution and allergens.

Specific conditions

- Acute or recurrent stridor
- Acute respiratory distress
- Asthma
- Cystic fibrosis
- Lower respiratory tract infection (including pneumonia and bronchiolitis)
- Nose bleeds
- Recurrent or chronic cough
- Sore throat and/or mouth
- Snoring and obstructive sleep apnoea

Skills

- Take a respiratory history and examination.
- Recognise and respond to respiratory distress and respiratory failure.
- Develop a management plan for common respiratory disorders.
- Prescribe and interpret common laboratory tests, chest x-rays and basic lung function.
- Prescribe appropriate inhalation devices according to age and be able to educate the patient and his/her parents on how to use them.

RHEUMATIC DISEASES

Knowledge base

- Aetiology and pathophysiology of rheumatic diseases
- Inflammatory and non-inflammatory connective tissue diseases
- Effects of chronic rheumatic diseases on physical growth and social development
- Rheumatological manifestations of systemic diseases

Specific conditions

- Acute / chronic arthritis
- Common causes of joint swelling
- Common gait disorders (limp, torsional and angular deformities of lower limbs)
- Common causes of musculoskeletal pain, including limb pain, neck pain, back pain
- Juvenile Idiopathic Arthritis (JIA)
- Normal patterns of leg alignment (bow legs, knock knees, in toeing)
- Septic arthritis and osteomyelitis

Skills

- Taking a musculoskeletal history
- Detailed examination of the joints and musculoskeletal system

SPORTS MEDICINE

Knowledge

- Understand common sports injury and treatment
- Understand the importance of regular exercise to promote good general health
- Understand the importance of skeletal maturity in dictating the appropriate type of training
- Understand the risks due to incomplete healing of previous injury
- Understand the risks of contact sports in healthy children

Skills

- Physical examination of the musculoskeletal system.
- Recognition of examination findings that are consistent with common sports injuries.
- Plan the appropriate management / treatment of an athlete with sports injury.

ASSESSMENTS

The educational purposes for the assessment system are:

- To support learning and progression across the curriculum and
- To assess the level of competence achieved at different stages in that progression

The assessment will consist of:

1. A written **MCQ examination** that should be organised at the European level with the technical help from the UEMS.³
 - Paediatrics is actually very late re. the organisation of such European Diploma.⁴
 - This is the future task of the European Board of Paediatrics in 2015.
2. A **logbook** of knowledge, competences and skills necessary for entering a given paediatric specialty. An electronic logbook should be developed on the basis of current national logbooks.
3. And other **assessment tools**, including:
 - a. MiniCEX (Mini-Clinical Evaluation Exercise)
 - b. CbD (Case-Based Discussion)
 - c. ACAT (Acute Care Assessment Tool)
 - d. HAT (Handover Assessment Tool)
 - e. LEADER (Leader case-based discussion)
 - f. DOC (Discussion Of Documentation)
 - g. ePaed MSF (Multisource Feedback)
4. And also **formal letters of recommendations**

³ European_Assessments_-_Dr_Zee_Goldick_-_Chairman CESMA_-_October_2010

⁴ Survey-of-CESMA-UEMS-Board-Exams-2014-John-Boorman-Insbruck-24.05.2014