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UEMS 2026.33

Training Requirements for the Specialty of PAEDIATRICS

European Standards of Postgraduate Medical Specialist Training

The European Academy of Paediatrics/UEMS Paediatrics Section (EAP/UEMS-SP)

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UEMS PREAMBLE

The UEMS (Union Européenne des Médecins Spécialistes, or European Union of Medical Specialists) is a non-governmental organisation representing national associations of medical specialists at the European level. With its current membership of 40 national associations and operating through 43 Specialist Sections and their European Boards, 17 Multidisciplinary Joint Committees and 4 Thematic Federations the UEMS is committed to promote the free movement of medical specialists across Europe while ensuring the professional consensus on the framework for the highest possible level of their training which will pave the way to the improvement of quality of care for the benefit of all European citizens and beyond.

UEMS and its Postgraduate Medical Specialists Training programmes. In 1994, the UEMS adopted its Charter on Postgraduate Training aiming at providing the recommendations at the European level for high quality training. This Charter set the basis for the European approach in the field of harmonisation of Postgraduate Specialist Medical Training, most importantly with the ongoing dissemination of its periodically updated Chapter 6's, specific to each specialty. After the most recent version of the EU Directive on the recognition of Professional Qualifications was introduced in 2011, the UEMS Specialist Sections and other UEMS Bodies have continued working on developing the documents on European Training Requirement(s) (ETRs). They reflect modern medical practice and current scientific findings in each of the specialty fields and particular competences covered and being represented within the UEMS. In 2012 the UEMS Council adopted the document Template Structure for ETR.

The linkage between the quality of medical care and quality of training of medical professionals. It is the UEMS' conviction that the quality of medical care and expertise are directly linked to the quality of training, achieved competences and their continuous update and development provided to the medical professionals. No matter where doctors are trained, they should have the same core competences. The UEMS ETRs reflect many years (or even decades) of experience on the ground of the UEMS Sections/ Multidisciplinary Joint Committees (MJCs) and Boards developing in close collaboration with the relevant European Scientific Societies training requirements coupled with European Medical Assessments. It is one among the clear aims of the UEMS ETRs to raise standards of training to make sure that European patients find high quality standards of safe specialist care. While professional activity is regulated by national laws in EU Member States, it is the UEMS understanding that it has basically to comply with international treaties and UN declarations on Human Rights as well as the WMA International Code of Medical Ethics.

UEMS and European legislation facilitating the mobility of medical professionals. The UEMS Council and its Specialist Sections, first created in 1962, have regularly provided advice and expert opinion to the European Commission. This helped create the framework that informed the drawing up of the Doctors Directives in 1975, which provided for the mutual recognition of medical diplomas and the free movement of doctors throughout the EU. The revised EU Directive on the recognition of Professional Qualifications (2013/55/EU) allows member states to decide on a common set of minimum knowledge, skills and competences that are needed to pursue a given profession through a Common Training Framework (CTF) which represents the third mechanism that could be used to ensure mobility within the EU. This directive states that "professional qualifications obtained under common training frameworks should automatically be recognised by Member States. Professional organisations which are representative at Union level and, under certain circumstances, national professional organisations or competent authorities should be able to submit suggestions for common training principles to the Commission, in order to allow for an assessment with the national coordinators of the possible consequences of such principles for the national education and training systems, as well as for the national rules governing access to regulated professions". The UEMS supported CTFs since they encompass the key elements developed in modern educational and training models, i.e. knowledge, skills, professionalism. In addition, the Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare introduced a strong incentive for harmonisation of medical training and achieved competences among EU/EEA

Countries through the requirements to assure good and comparable quality of care to increasingly mobile European citizens.

The UEMS ETR documents aim to provide for each specialty the basic training requirements as well as optional elements, and should be regularly updated by UEMS Specialist Sections and European Boards to reflect scientific and medical progress. The three-part structure of these documents reflects the UEMS approach to have a coherent pragmatic document for each individual specialty, not only for medical specialists but also for decision-makers at the national and European level interested in knowing more about medical specialist training. To foster harmonisation of the ETR by adopting more specific guidelines, the CanMEDS competency framework is recommended which defines the entire set of roles of the professionals which are common across both medicine and surgery. UEMS has an agreement to use an abbreviated version of the competences within those roles.

Importance of making a distinction between Knowledge and Competency in ETR documents. Competency-based education is not oriented towards the period of clinical rotations, but towards trainee, and trainee's progress in the acquisition of competences. Having a clear distinction within an ETR's contents between competences and knowledge helps define both how that training should be delivered and how it should be assessed. The UEMS considers that the appropriate use of different methods of assessment of knowledge and acquired skills, emphasising the workplace-based assessment, is an essential component of quality postgraduate training, focused on high standards of specialist medical practice. To improve the methods of assessment it is also recommended to use the so-called Entrustable Professional Activities (EPAs) in all specialties ETRs. In order to recognise common and harmonised standards on the quality assurance in specialist training and specialist practice at a European level some UEMS Specialist Sections and Boards also have, for a long time, organised European examinations (supported and appraised by the UEMS CESMA - Council of European Specialist Medical Assessments) https://eapaediatrics.eu/about-ebp-eap-exam/.

Overlapping of learning outcomes and competences. Each of the UEMS ETRs defines a syllabus or knowledge base and describes learning outcomes defined for given competences. Some of these curricula encompass a whole specialty, others focus on areas within or across specialties and define content of the training requirements for specific areas of expertise. By recognising the potential overlapping it creates the opportunity for those writing ETRs to draft overlapping or common goals for learning outcomes. Similar measurement does not necessarily equate to the same targets. Rather, across different specialties the final goal may differ, i.e. there may be clearly defined individual goals for trainees with different expectations.

UEMS ETRs and national curricula. The UEMS strongly encourages the National Medical Competent Authorities (NMCAs) to adopt such requirements and believes that this is the most efficient way of implementation of good standards in postgraduate training. We clearly respect and support the vital role of the NMCAs in setting high standards of training and care in their respective Countries and checking through robust quality control mechanisms the qualifications of medical specialists moving across Europe. The UEMS ETRs are developed by professionals for professionals and this adds unique value to them. UEMS aim is to indicate the knowledge and competences that should be achieved by trainees in EU/EEA countries and also competences and organisation of the training centres. The training environment and results described in UEMS ETRs may be achieved in adapted ways, depending on local traditions, organisation of the healthcare system and of medical specialist training. Adaptation of UEMS ETRs to local conditions assures the highest quality of specialist training and each state may include additional requirements, depending on local needs.

Importance of collaboration with other representative European medical bodies. The UEMS always wishes to work with all Colleagues, NMAs, professional and scientific organisations across Europe. In the process of ETRs development, the UEMS recognises the importance of meaningful collaboration with the other European medical representative bodies, the European Junior Doctors (EJD representing doctors in training), the European Union of General Practitioners (UEMO – Union Européenne des

Médecins Omnipraticiens), the Standing Committee of European Doctors (CPME - Comité Permanent des Médecins Européens), the Federation of European Salaried Doctors (FEMS) and the European Association of Senior Hospital Doctors (AEMH - Association Européenne des Médecins Hospitaliers). In addition, UEMS continues to develop closer links with the many European specialist societies. UEMS, in collaboration with its fellow European representative bodies, has constantly been highlighting the importance of coordinated postgraduate specialist medical training programmes, always accepting the differing needs of different specialties. In this way quality medical care is delivered by highly qualified medical specialists - essential to ensuring consumer confidence and protection all over Europe.

Conclusions. UEMS is very proud of all the hard work that has been done until now in developing the UEMS ETRs as well as that they are increasingly implemented as national curricula. However, we also recognise the need for constant improvement, and we are always open to further suggestions. The UEMS insists that the medical profession remains the driver in defining its own specialist training and continuous professional development needs. On this basis, we sincerely look forward to working with the key European Union responsible bodies, as well as the national stakeholders in implementing the basic common strategies and requirements outlined with this initiative. We are confident that the priorities detailed in UEMS ETR documents developed for individual specialties (and/or competences) will become evident in national strategies and programmes, as well as action plans for postgraduate medical education and training.

INTRODUCTION

Definition of the Specialty

Paediatrics is an independent medical specialty focused on the prevention, diagnosis, and management of all aspects of illnesses and injuries affecting children, from the prenatal period, through birth, infancy, childhood, and adolescence, until the transition to adult healthcare services. The specialty encompasses both acute and chronic conditions, as well as health promotion, development, and preventive care. Paediatricians provide comprehensive care from birth (premature or otherwise) to 18 years of age, addressing the unique medical, developmental, and psychosocial needs of children and young people. The specialty also includes counselling for foetuses at risk of congenital or perinatal conditions, requiring close collaboration with maternal-foetal medicine specialists, neonatologists, geneticists, subspecialists, and obstetricians to optimise prenatal health and neonatal outcomes.

Paediatricians have a responsibility to ensure continuity of care for children with complex or chronic conditions that extend into adulthood. This includes structured transition planning for adolescents with long-term healthcare needs, ensuring a coordinated and multidisciplinary approach to adult services.

There is growing awareness that the principle of Global Health, defined as an approach that prioritises achieving health equity for all children should be part of the paediatrician's professional toolkit and that topics such as the social determinants of health, care for immigrants and travellers and cultural sensitivity must be part of a paediatrician's competences. These principles apply to the care of children in one's own country and not only to those abroad.

Beyond individual patient care, paediatrics integrates public health strategies, preventive medicine, and advocacy for child well-being, in accordance with European policies on child health and WHO recommendations. The specialty is delivered across primary, secondary, and tertiary healthcare settings, with variations in national healthcare systems influencing service delivery. This European Training Requirement (ETR) aims to harmonise paediatric training throughout EU/EEA countries, ensuring a high standard of specialist care for all children.

Paediatrics in Europe

Paediatric healthcare across Europe shows substantial heterogeneity in how services are organised. In some countries, children primarily access care through **community-based primary care paediatricians or general practitioners**, who provide first-line assessment, preventive care, and long-term follow-up. In other systems, paediatric care is more **hospital-based**, with specialists playing a larger role even in the management of common conditions. The balance between **primary care and secondary care**, as well as between **community-based and hospital-based services**, differs considerably between countries. These organisational differences influence referral pathways, continuity of care, and access to specialised paediatric expertise.

Similarly, the extent to which paediatric subspecialties are formally recognised at the national level varies across Europe. Of the **14 subspecialties** recognised by the UEMS in the field of paediatrics, national regulatory bodies may recognise anywhere from one to all fourteen in a given country.

For that reason, **the scope of this general paediatric training** is very important. It should define a framework for all clinicians whose primary work involves children and be the basis for all future

paediatric subspecialty competences. The breadth of training and provision of care remains a fundamental issue for the UEMS-SP which continues to strive to harmonise training throughout Europe.

Aims of the Specialty

Paediatricians practise in a wide range of **healthcare settings**, including **primary, secondary, and tertiary care**, addressing the needs of **diverse paediatric subpopulations**. These include:

- **Healthy children**, who require routine health supervision, immunisations, growth and developmental monitoring, and preventive care.
- **Vulnerable children**, such as those with disabilities, neurodevelopmental disorders, rare diseases, social disadvantages, or exposure to adverse childhood experiences.
- **Adolescents**, who have unique healthcare needs, particularly in the areas of mental health, risk-taking behaviours, and transition to adult care.
- **Mild to moderately ill children and adolescents** presenting with various medical conditions, initially straightforward disorders affecting a single-system that may progress to involve multiple systems and become more complex, and can be managed in outpatient, emergency room or inpatient settings.
- **Acutely ill children and adolescents**, requiring urgent or emergency intervention due to infections, trauma, or other acute conditions.
- **Acutely ill neonates** requiring urgent perinatal care.
- **Child/adolescent with a chronic condition and complex and integrated care needs** with long-term management for conditions such as diabetes, hypertension, congenital disorders including those with rare diseases, severe disabilities/vulnerabilities, or who require multidisciplinary, integrated care.

All need paediatric competences pertinent to that work, and thus general paediatric training.

This document aims to outline a roadmap to support both trainees and their supervisors throughout this training process. While closely linked to hospital-based paediatrics, it also clearly interfaces with both primary care and tertiary paediatrics. The objective of this document is to ensure that those trainees completing **general paediatric training** in Europe possess excellent communication and interpersonal skills, demonstrate paediatric expertise in terms of history taking, physical examination, performance of procedures and treatment, are professional and attentive to patient safety and harm reduction, and develop leadership and teamwork skills as well as commitment to lifelong learning. We believe that this document defines the minimum requirements for training in Paediatrics.

Methodology for the development of the ETR

The development of this ETR took place in three phases.

1. The European Academy of Paediatrics/UEMS Paediatrics Section (EAP/UEMS-SP) has designated the task of writing a draft ETR to a working group consisting of the following members:

- Ann De Guchtenaere, President of the European Board of Paediatrics
- Liviana Da Dalt, former President of the European Board of Paediatrics
- Peter Hoyer, Chair of the EBP-EAP examination, past President of EAP/UEMS-SP
- Ivan Bambir, EAP/UEMS-SP Fellow
- Francesca Seregni, EAP/UEMS-SP Fellow

- Debora Calderoni, EAP/UEMS-SP Young EAP

2. The ETR has been reviewed by the national delegates of the EAP/UEMS-SP and by Paediatric Specialist Societies

3. Final approval has been given by the Executive Committee and the General Assembly of the EAP/UEMS-SP and by the General Assembly of the European Board of Paediatrics.

The current ETR is replacing the document 'Curriculum for Common Trunk Training', approved at the UEMS meeting in Brussels in December 2014.

I. TRAINING REQUIREMENTS FOR TRAINEES

Entry-Level Profile

Applicants to paediatric specialist training must hold a recognised primary medical qualification (medical degree) granting eligibility for medical registration/licensure in the country of training, in accordance with national regulatory requirements. No prior clinical experience in paediatrics is required as a prerequisite, as foundational paediatric knowledge, skills, and competences are built progressively from the start of training, as defined in this ETR.

Key Elements of Paediatric Training

Paediatric training is based on three key elements:

1. **Clinical experience gained through direct patient care**, under the supervision of senior clinicians and based on a clinical curriculum with a focus on excellent clinical skills, sound decision-making abilities and the judicious use of investigations. Upon completion of training, the candidate should be competent to manage the most common paediatric conditions.
2. **Professional and ethical practice (conduct)** learnt through mentorship by senior clinicians with a commitment to quality improvement and harm reduction in both the inpatient and outpatient settings.
3. **Academic knowledge and proof of clinical ability** as determined by various assessment tools. Trainees will be assessed periodically throughout the programme in the workplace. These assessments must be recorded.

General Competences (Based on the UEMS/CanMEDS Model)

Medical Expert

Trainees must demonstrate the ability to provide holistic, age-appropriate care across the paediatric age spectrum, from newborns to adolescents.

This includes the ability to:

- Conduct thorough paediatric assessments, including history taking and clinical examination
- Identify age-appropriate normal variations and distinguish them from findings that deviate from the expected growth, development, or well-being
- Select appropriate investigations, and interpret their results for diagnosis and management, disease prevention, and health promotion

- Apply paediatric clinical reasoning to interpret findings, manage uncertainty, and revise care plans as needed
- Integrate all sources of information to develop a safe, patient-centred procedural or therapeutic plan that considers the risks and benefits of all approaches
- Use shared decision-making in the consensus process, taking into account risks and uncertainty
- Initiate emergency life support, stabilise acutely unwell patients and refer to intensive care
- Manage common paediatric presentations and escalate care when needed, including recognising when specialist or surgical intervention is required
- Recognise and support children with behavioural, emotional, or mental health concerns using developmentally appropriate approaches, involving family/guardians and relevant professionals
- Demonstrate awareness of the social determinants of health which could contribute to the child's presentation and advocate for equitable child health
- Recognise and address the complexity of long-term conditions and manage them within this context
- Prioritise and organise safe, efficient, and effective care

Leader

Paediatricians must adhere to the principles of Good Medical Practice and prioritise patient safety, quality improvement, and effective stewardship of care.

Trainees must:

- Understand and practise the principles of health promotion and public health.
- Maintain clear, comprehensive, and legally compliant medical records.
- Engage in reflective practice to identify and mitigate patient safety risks.
- Possess thorough knowledge of the legal frameworks related to the safeguarding of children.
- Be familiar with data protection regulations.

Scholar

Paediatricians must cultivate a commitment to continuous learning and the generation, appraisal, and application of medical knowledge.

Trainees must:

- Adopt an evidence-based approach to paediatric medicine.
- Demonstrate a commitment to lifelong learning by developing and maintaining a structured personalised education plan.
- Conduct systematic reviews of medical literature.
- Utilise a wide range of research publications and electronic databases to inform clinical practice.
- Actively monitor and critically appraise developments in Digital Health, Telemedicine, Remote Physiological Monitoring, and Artificial Intelligence, and understand their evolving role and evidence base in paediatric care.

Communicator

- Effective communication is an integral part of paediatric practice.
- Trainees must:
- Establish positive and age-appropriate therapeutic relationships with children and their families.
- Respect patient confidentiality, privacy, autonomy, and consent procedures.

- Convey relevant medical information clearly and compassionately, particularly in crisis situations.
- Elicit and synthesise the perspectives of children, families, colleagues, and caregivers, considering social, cultural, and emotional factors.
- Promote shared decision-making by developing a mutual understanding of concerns, goals, and treatment options with respect to the view of the child.
- Provide clear, concise, and structured oral and written communication to families and healthcare providers.
- Appropriately and safely use Telemedicine and video-based consultation, including recognising its limitations for paediatric assessment (e.g. when a physical examination or in-person review is required), and communicate clearly with families using remote monitoring or digital health platforms.

Collaborator

- Paediatricians must work effectively within multidisciplinary teams to optimise patient care.
- Trainees must:
- Actively contribute to a professional healthcare team, ensuring coordinated and efficient patient management.
- Demonstrate respect for colleagues in various paediatric roles and settings.
- Maintain effective time management and organisational skills.
- Perform appropriate functions related to patient referral, transfer, and discharge.
- Delegate and follow through on tasks, while recognising personal limitations and seeking support when necessary.
- Set priorities and manage responsibilities effectively in high-pressure environments.

Professional

- Professionalism and ethical conduct are fundamental to paediatric practice. Trainees must:
- Demonstrate compassion, integrity, and respect in all interactions.
- Demonstrate sensitivity and responsiveness to diverse patient populations, including differences in gender, age, culture, race, religion, and disability.
- Act decisively when a child's well-being is at risk.
- Maintain accountability to patients, society, and the profession.
- Adhere to legal and ethical responsibilities, including mandatory reporting of abuse or neglect.
- Recognise and address ethical considerations in research involving children.
- Maintain high standards of professional conduct in the delivery of safe and effective clinical care.
- Maintain accountability and responsibility, ensuring proper handover and continuity of care.
- Demonstrate self-awareness and a proactive approach to personal health, stress management, and well-being.
- Demonstrate critical thinking and sound clinical reasoning when using Artificial Intelligence in diagnostics and decision support, understand the principles of data ethics, algorithmic bias, and patient data protection, and recognise the paediatrician's ultimate responsibility for clinical decisions supported by AI tools.
- Adhere to regulations and support the right to parental presence in all procedures concerning their child.

Health Advocate

(formerly: "Health Advocacy and Global Health Awareness")
Paediatric trainees, as advocates for child health, must demonstrate the ability to use their expertise and influence to improve the well-being of individual patients, families, and communities.

They must:

- Play an active role in the safeguarding of babies, children, and adolescents.
- Support and empower parents and caregivers in providing effective care.
- Recognise when to seek guidance, supervision, and multidisciplinary support.
- Understand their role in managing chronic conditions in children.
- Ensure that all clinical decisions prioritise the child's best interests.
- Interpret and communicate the implications of national policies on child health and well-being.

PATIENT-CENTRED APPROACH

Introduction

A patient-centred approach ensures that paediatricians are trained to provide high-quality, safe, and compassionate care across a wide range of clinical scenarios. It incorporates knowledge acquisition, skill development, and competency-based assessments, ensuring that paediatric trainees develop expertise in managing the full spectrum of children's health needs.

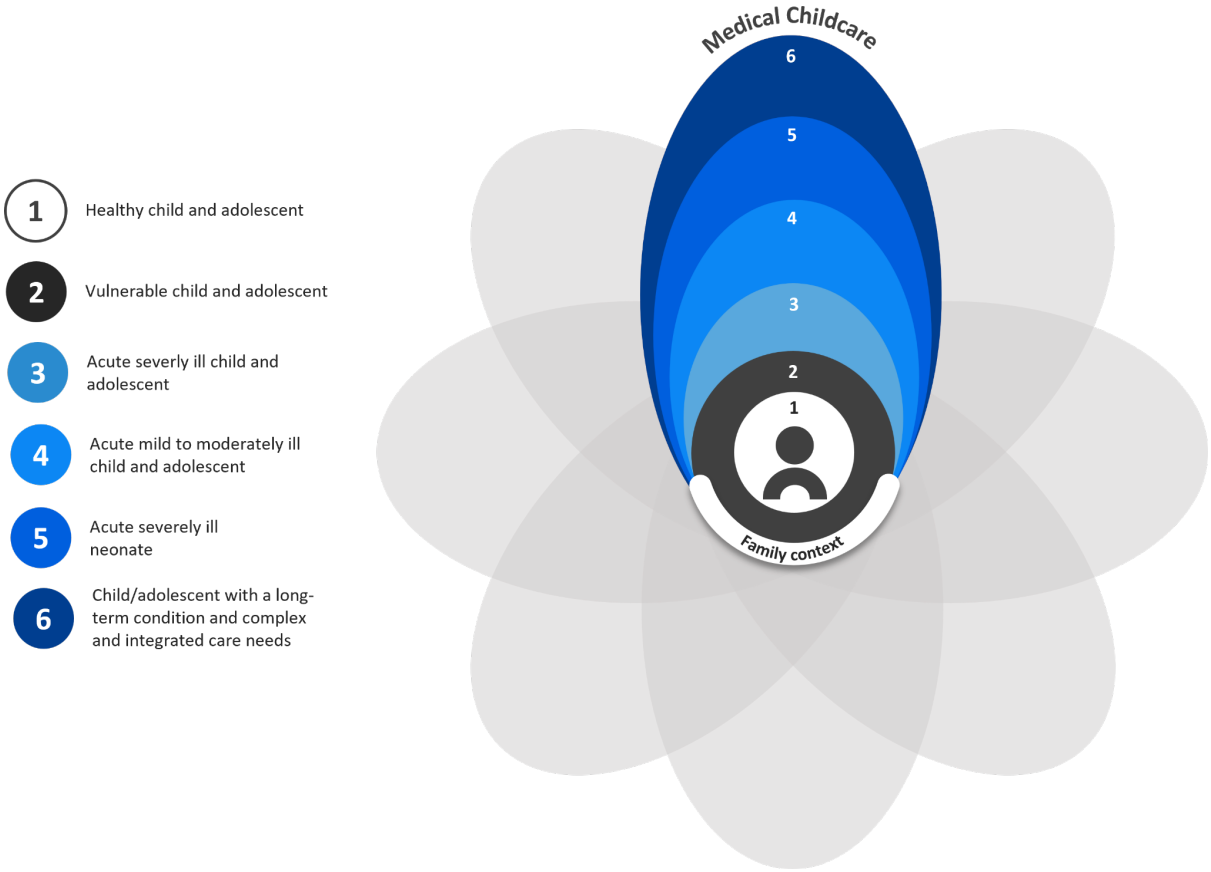


Figure 1. The full spectrum of Child Health Needs

The structure of this section is organised into key thematic areas, covering different paediatric populations and conditions. Each section follows a standardised format to ensure consistency in training and assessment, including: knowledge, skills, specific competences. EPAs are defined in APPENDIX C.


Medical Childcare
6
5
4
3
2
1
Family context
Healthy child and adolescent

HEALTHY CHILD

Healthy Child – Neonate

This chapter refers to the care of a normal newborn, starting from the delivery room and covering common problems that arise in the first 28 days of life.

Knowledge *See also the chapter System-based Neonatology*	● Physiological transition from intrauterine to extrauterine life. ● Normal newborn physiology and vital signs, including thermoregulation, glucose homeostasis, and cardiovascular adaptation ● Impact of perinatal factors, including prematurity, maternal conditions and antenatal exposures on neonatal outcomes. ● Normal physical and neurological examination of the newborn and common variations from normal ● Normal patterns of growth in a newborn and effects of foetal growth restriction on long-term health; growth monitoring in term and preterm infants ● Normal breastfeeding patterns, breastfeeding and human milk benefits ● Neonatal fluid balance and electrolyte homeostasis ● Common minor problems and clinical manifestation of diseases in the newborn period ● Common congenital malformations (major and minor), including surgical and cardiac malformations ● Neonatal jaundice ● Indications for imaging tools (ultrasound, MRI), metabolic and genetic testing postnatally ● Preventive measures that begin immediately after birth and vaccination schedules ● Fundamental principles of neonatal resuscitation
Skills *See also chapter on Severely Ill Neonate*	**Delivery room care** ● Resuscitate and stabilise newborns in distress (suctioning, oxygen use, and bag–mask ventilation as needed) ● Perform an overall assessment that includes Apgar scores ● Determine gestational age and plot birth weight **Routine care** ● Perform a physical examination to look for normal variations, abnormal signs, and congenital anomalies ● Determine the general state of the infant (“well” versus “sick” newborn) ○ Distinguish normal variations from abnormal findings ○ Interpret physical examination findings in the context of the maternal history and family history ● Prescribe or administer Vitamin K ○ Manage cord care ○ Request appropriate screening and immunisations (see Healthy Child – Preventive and Predictive Medicine, Vaccines and Screening) ● Manage feeding and fluids ● Prescribe measures to regulate temperature for newborns with temperature instability ● Monitor, treat and prevent neonatal hypoglycaemia

	Recognise, evaluate and treat ● Jaundice ● Newborn complications of maternal diabetes (hypoglycaemia, polycythaemia, large for gestational age) ● Transient tachypnoea of the newborn ● Murmurs due to heart conditions that do not affect cardiovascular stability ● Infants born to mothers with fever at the time of delivery ● Infants born to mothers with Group B Streptococcus ● Suspected sepsis ● Hypoglycaemia ● Poor weight gain ● Neonatal abstinence syndrome ○ Prescribe medications safely for newborns ○ Perform fluid management in neonates, including intravenous and enteral hydration ○ Communicate effectively with parents and families, providing guidance on neonatal care, breastfeeding, and feeding support.
Specific Competences	● Providing routine care, as well as addressing common problems that develop within the first 28 days of life ● Ability to undertake a screening neonatal examination ● Ensuring comprehensive and safe management of neonates in both routine and emergency scenarios. ● Use judgement to know when common problems can be handled at home and arrange for discharge and follow-up ● Making appropriate referrals for congenital anomalies and other complex conditions requiring specialist intervention. ● Provide a professional, family-centred approach to neonatal care, ensuring effective communication with caregivers.

Healthy Child – Normal Development and Growth

Knowledge	Typical and atypical development of: ● Gross and fine motor skills ● Cognitive, social, sensory and emotional functioning ● Receptive and expressive language ● Self-regulating skills Physical growth from birth through puberty, including: ● Normal growth patterns and head shape ● Common disorders of height, weight, and head shape (e.g., plagiocephaly) ● Common causes of short stature, tall stature, and poor weight gain ● Genetic/congenital conditions affecting growth (e.g., trisomy 21, fragile X, foetal alcohol spectrum disorder,…) Influences on development and growth: ● Genetic, hormonal, nutritional, environmental, psychological, and social factors Screening and diagnostic tools: ● National neonatal and childhood developmental screening tests ● Tools for assessing developmental delay and intellectual disability ● Indications for imaging (ultrasound, MRI), metabolic and genetic testing ● Role and indications for physio-, occupational-, speech-, and educational therapy ● Indications for referral to specialists (e.g., paediatric neurologist, speech pathologist/therapist) Common causes of delayed puberty
Skills	● Take a detailed developmental history including milestones ● Assess sexual maturity using Tanner staging ● Identify and investigate deviations from normal developmental or growth trajectories ● Use appropriate growth charts, including correction for prematurity or specific charts for conditions, i.e. Trisomy 21, Turner ● Distinguish regulatory disorders (disturbances in sleep, feeding, mood, or sensory processing in infancy and early childhood) from normal developmental variation ● Communicate developmental findings, concerns, and implications to parents clearly and supportively ● Reassure families about normal growth and provide guidance on abnormalities ● Perform developmental assessments in children aged 0–5 years ● Conduct basic hearing and vision screening ● Accurately measure weight, height, and head circumference ● Initiate appropriate diagnostic work-up for short or tall stature
Specific Competences	● Identify and monitor normal and abnormal developmental patterns ● Recognise early signs of developmental disorders and initiate timely referrals ● Appropriately use developmental screening and diagnostic tools to support early detection ● Counsel parents effectively about development and intervention options ● Collaborate in a multidisciplinary team to support a child's development (e.g., with physiotherapists, occupational therapists, speech therapists)

Healthy Child – Nutrition and Fluids

Knowledge	Infant, Child, and Adolescent Nutrition ● Age-specific nutritional needs and dietary requirements ● Macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals) necessary for healthy growth Feeding behaviour ● Breastfeeding: benefits, challenges, contraindications, and management of common difficulties (e.g., latch issues, low supply) ● Formula feeding: appropriate use and potential issues ● Introduction of complementary feeding (weaning): timing, textures, allergen introduction ● Physiological eating behaviour in infants, children and adolescents Nutritional Deficiencies and Related Conditions ● Common deficiencies: iron deficiency anaemia, vitamin D deficiency, rickets, iodine deficiency ● Nutrition-related disorders: failure to thrive, obesity, food allergies/intolerances (e.g., lactose intolerance, coeliac disease), and metabolic disorders Hydration and Fluid Balance ● Daily fluid requirements by age/weight ● Assessment and management of dehydration Feeding Difficulties ● Conditions such as gastro oesophageal reflux, oral aversion, and sensory-related feeding issues/challenges ● Selective eating and ARFID Cultural and socioeconomic influences on diet, including religious practices and food access
Skills	● Assess nutritional status through: ○ Detailed dietary history ○ Anthropometric measurements (weight, height, BMI, growth velocity) ○ Interpretation of growth charts ● Assess hydration status (e.g. skin turgor, capillary refill, urine output) ● Identify and assess breastfeeding challenges ● Identify signs of nutritional deficiencies and feeding disorders ● Assess suitability, adequacy and health implications of special diets (e.g., vegetarian, vegan, ketogenic, elimination diets) ● Manage breastfeeding difficulties (e.g., poor latch, maternal concerns) ● Counsel parents on: ○ Age-appropriate feeding practices ○ Weaning and picky eating ○ Transition to solids ● Recognise and manage nutritional deficiencies, including supplementation when appropriate ● Initiate appropriate management of feeding disorders, including referral to dietitians, speech therapists, and gastroenterologists ● Implement oral and intravenous fluid replacement strategies for dehydration
Specific Competences	● Advocate for breastfeeding ● Promote optimal nutrition and healthy growth using

	evidence-based recommendations ● Recognise and manage nutritional and feeding disorders such as food allergies, undernutrition, and obesity ● Monitor growth and initiate appropriate interventions for abnormalities ● Apply preventive strategies to reduce the risk of diet-related diseases (e.g., obesity, cardiovascular issues, poor bone health)

Healthy Child – Preventive and Predictive Medicine, Vaccines and Screening

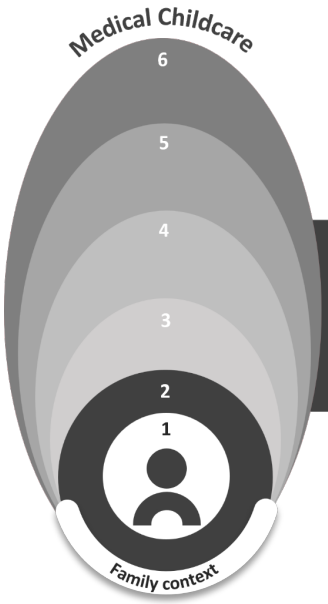
Knowledge	**Vaccination and Immunisation** ● National and international immunisation schedules, including WHO and EU recommendations ● Epidemiology and transmission of vaccine-preventable diseases ● Mechanisms of immunity: active and passive ● Adverse effects and contraindications of vaccines ● Herd immunity and its role in public health **Screening and Early Detection** ● Routine childhood screening: ○ Neonatal metabolic and genetic testing (e.g., congenital hypothyroidism, sickle cell disease, cystic fibrosis, etc) ○ Vision and hearing assessments ○ Developmental surveillance ● Age-specific screening guidelines for other conditions (e.g., hypercholesterolaemia) ● Predictive medicine principles: early identification of children at risk due to genetics, environmental exposures, or social determinants ● Use of risk assessment tools for chronic diseases (e.g., obesity, hypertension, diabetes) and behavioural disorders (e.g., ASD, ADHD) **Health Promotion** ● Principles of health promotion and disease prevention across childhood and adolescence ● Long-term impact of nutrition, physical activity, sleep, and hygiene on overall health ● Sexual and reproductive health education: puberty, consent, contraception, sexually transmitted infection prevention ● Oral health: fluoride use, dental caries prevention, dental hygiene from infancy to adolescence ● Injury prevention: car seat use, drowning prevention, home safety, and helmet use for sports ● Mental health promotion strategies: resilience, emotional regulation, self-esteem, and coping skills ● Substance abuse prevention: tobacco, alcohol, recreational drugs ● Media and digital literacy: screen time, online safety, social media impact on mental health ● Digital and social media addiction ● Environmental risks: pollution, toxin exposure, and benefits of outdoor play and nature connection. ● Short- and long-term impact of climate change on child health, including heat-related illness, changing patterns of infectious and vector-borne disease, and worsening respiratory/allergic conditions.

	● Principles of sustainable clinical practice, including judicious use of resources, waste reduction, and environmentally responsible prescribing, as part of the paediatrician's role in promoting child and planetary health. ● Parental guidance with education on child development, responsive parenting, positive discipline, de-escalation techniques for challenging behaviours, emotional security ● Parental guidance and strategies to support healthy eating and sleeping routines ● Age-related preventive health strategies: ○ Injury and accident prevention ○ Dental hygiene and care ○ Sun safety ○ Safe sleep guidelines ○ Physical activity guidelines ○ Healthy lifestyle ○ Air quality
Skills	● Identify children with genetic, metabolic, or congenital conditions ● Evaluate developmental milestones and detect early signs of delay ○ Recognise signs of hearing and vision impairment (See ref. (otoacoustic emissions (OAE), and hearing screening) ● Use screening results to make clinical decisions and follow-up plans ● Provide preventive health counselling on: ○ Nutrition ○ Physical activity ○ Injury prevention ○ Safe sleep practices ○ Smoking cessation ● Administer Vaccinations: ○ Use correct injection techniques ○ Check for adequate vaccine storage and the cold chain ○ Document vaccination accurately ● Address vaccine hesitancy and concerns using evidence-based explanations ● Perform ○ Screening programmes according to national guidelines ○ Vision screening (red reflex, visual acuity, early signs of strabismus or refractive errors) ○ Growth and developmental assessments ● Interpret screening results and arrange appropriate referrals for abnormal findings
Specific Competences	Promote and implement immunisation strategies and adherence Recognise and address vaccine hesitancy to ensure high vaccination uptake Perform and interpret screening tests confidently, ensuring timely referral for abnormal results

Healthy Adolescent

Knowledge	• Normal adolescent psychological, emotional (development of self-identity and self- image, psychological separation from the family, peer group influence) and cognitive development (formal operational thought, late maturation of the pre-frontal cortex). • Physical changes of puberty (pubertal staging, growth spurt, changing laboratory parameters) **Nutrition and Physical activity** • Nutritional needs • Impact of sedentary behaviours and physical activity on physical and mental health • The normal bio-psycho-social development during puberty in boys and girls. • The stages and characteristics of cognitive reasoning in early, middle, and late adolescence. • Gender and sexual identity development, including diversity and fluidity. • The influence of family, peers, and social context in shaping adolescent behaviour. • The epidemiology and patterns of social and sexual behaviour across adolescence. • The legal and ethical principles relating to adolescent care, including consent and confidentiality. • Safe sex practices, sexually transmitted infections (STIs), contraception, and emergency (post-coital) contraception.
Skills	**Assess** • The adolescent's stage of physical, cognitive, and emotional development. • Psychosocial context, including family relationships, peer influence, school functioning, and social media use. • Health-related behaviours such as nutrition, physical activity, sleep patterns, screen time, and substance use. • Risk behaviours, including unprotected sexual activity, substance misuse, and self-harm. • The adolescent's understanding of confidentiality, consent, and autonomy. • Maturity level to determine capacity for assent and consent, in accordance with legal and ethical standards. • The adolescent's motivation and readiness to change risky or unhealthy behaviours. • The need for multidisciplinary support or referral to specialised services (e.g. mental health, sexual health, social work). **Perform and Interpret** • A structured, developmentally appropriate psychosocial interview. • Mental health screening tools (e.g. for anxiety, depression, trauma, substance use) and interpret results in context. • Sexual health risk assessments and relevant screening tests (e.g. for STIs), and interpret findings accurately. • Communication strategies that promote trust, respect confidentiality, and ensure informed decision-making.

	• Documentation and reporting that reflect the adolescent's concerns, preferences, and agreed plan of care.
Specific Competences	• Provide care that respects adolescent autonomy, identity, and evolving maturity. • Recognise and accommodate diverse backgrounds and experiences, including cultural, gender, and sexual diversity. • Maintain a safe and confidential environment to promote open communication. • Practise trauma-informed care, especially in discussions of mental health, violence, or sexual health. • Collaborate with school nurses, psychologists, mental health professionals, social workers, … • Support community and school-based health initiatives targeting adolescent wellness and risk reduction.



Vulnerable child and adolescent

VULNERABLE CHILD

Vulnerable Child – Children's rights

Knowledge	• United Nations Convention on the Rights of the Child (UNCRC) • Relevant national laws, regulations, and ethical guidelines that concern children, especially on safeguarding.
Skills	• Apply the principles of the Rights of the Child consistently in clinical interactions and healthcare decisions. • Involve children in healthcare decisions, respecting their evolving capacities. • Recognise clinical situations where children's rights may be at risk and take appropriate action to safeguard them. • Apply Family-centred care by involving families in all the aspects of patient care. • Advocate for the realisation of all child rights in individual care, institutional policies, and community health initiatives.
Specific Competences	• Uphold the dignity, autonomy, and best interests of every child across all clinical encounters. • Promote a healthcare culture that is fully aligned with the Rights of the Child in policies and practices.

Vulnerable Child – Safeguarding

Knowledge	• Presentations of neglect, physical, emotional, and sexual abuse in different age, developmental groups and social contexts • Long term consequences of abuse and neglect including mental health problems and sequelae of a shaken infant • National and International Legal framework and ethical obligations in child protection and safeguarding. • Other forms of abuse, including bullying, cyberbullying, institutional abuse, and fabricated or induced illness. • Legal and ethical obligations in child protection and safeguarding.
Skills	• Identify clinical, psychological and behavioural signs suggesting neglect, emotional, physical and sexual abuse. • Distinguish patterns of non-accidental injuries from common accidental injuries in children of different ages and development. e.g. fractures in areas not typical for accidental injuries (posterior rib fractures); bruises, petechies, burns and scars in areas not typical for accidental injuries (e.g. buttocks, face, neck, ears, abdomen etc) or suspicious in shape and size. • Identify signs of neglect from history taking and on examination (e.g. teeth hygiene, nutritional status, etc.)

	• Suspect diseases that may mimic physical abuse/neglect (e.g. osteogenesis imperfecta, bleeding disorders) and know how to investigate them. • Conduct appropriate investigations for suspected abuse, including imaging and laboratory testing to differentiate between disease, accidental and intentional injury. • Refer appropriately to other specialists experienced in child abuse evaluation and support including social services, psychological service, sexual abuse services. • Document and report safeguarding concerns clearly and appropriately. • Complete documentation of clinical signs and procedures that are made to identify the abuse or neglect in accordance with local and/or national law. • Start appropriate communication with the abused/neglected child and the family and other professionals. • Balance confidentiality with the obligation to protect children from harm.
Specific Competences	• Identify, respond and escalate safeguarding concerns in a professional and ethical manner. • Work collaboratively with social services, legal authorities, and child protection teams.

Vulnerable Child – Mental Health Disorders

Knowledge	• Stages of cognitive and emotional development from infancy to adolescence. • Risk factors, predisposing and protective factors which can influence mental health. • Psychological impact of chronic illness (like diabetes or epilepsy) on children and families. • Mental health and psychiatric disorders, Anxiety Disorders (Generalised Anxiety, Social Anxiety, Separation Anxiety, Phobias), Depressive Disorders, Obsessive-Compulsive Disorder (OCD) and psychosis in different age groups and developmental profiles (e.g. in young children or older children with a learning disability). • Persistent physical symptoms, medically unexplained symptoms, somatoform disorders (SFD) and chronic fatigue syndrome (CFS). • Pharmacological and non-pharmacological management approaches, including behavioural therapy, psychotherapy (cognitive behaviour therapy, parent-child interaction therapy), and medication use.
Skills	• Recognise and support children with emotional dysregulation and challenging behaviours in preschool and school-age children and adolescents with first line strategies and refer to specialists when appropriate. • Conduct a mental health history taking and a mental state examination using available screening tools.

Specific Competences	• Recognising and providing initial management for common paediatric mental health difficulties.

Vulnerable Child – Adverse Childhood Experiences

Knowledge	• Adverse Childhood Experiences (ACE) including abuse, neglect, exploitation, and inadequate care due to poverty, disability, family instability, and violence exposure and long-term impact. • Social, economic, and environmental factors contributing to childhood adversity and long-term impact.
Skills	• Identifying and addressing the acute and long-term effects of adverse childhood experiences on child health. • Collaborating with child protection services and social support networks and mental health professionals to minimise the impact of ACE.
Specific Competences	• Implementing trauma-informed care in paediatrics. • Recognising the need for early interventions to mitigate long-term (and intergenerational) effects of childhood adversity.

Vulnerable Child – Neurodevelopmental Disorders and Differences

Knowledge	• Typical and atypical child behaviour across different developmental and chronological stages. • Common neurodevelopmental disorders including Early Developmental Impairment, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum-Disorder (ASD), Developmental Coordination Disorder (DCD), Learning Disability and Tic Disorders (and Tourette's Syndrome) • Role of environmental factors, including parenting styles, family dynamics, adverse childhood experiences (ACEs), trauma, and socio-economic influence • Screening tools used in neurodevelopmental disorders • Impact of sleep, diet, and physical activity on child behaviour and mental health • Educational and social support systems for children with behavioural disorders, including individualised education plans and multidisciplinary care approaches • Ethical considerations in the diagnosis and management of behavioural disorders, including consent, confidentiality, and stigma reduction
Skills	• Conduct a basic developmental assessment in preschool children and school age children • Understand social communication differences in preschool and school age children and refer for assessment appropriately

	• Evaluate common emotional and behavioural problems and consider if they are part of a neurodevelopmental disorder like autism or ADHD and refer appropriately • Use validated rating scales and questionnaires for neurodevelopmental screenings (eg. Conners and Strength and Difficulties Questionnaire) and recognise the need for specialist referral • Request investigations such as genetic, metabolic and imaging for children with early developmental impairment, regression, and intellectual disabilities
Specific Competences	• Promote mental health literacy and stigma reduction within paediatric practice and public health initiatives. • Refer appropriately to specialised multidisciplinary teams

Vulnerable Child - Rare Diseases

Knowledge	• Understand that rare diseases are individually rare but collectively common in paediatric practice • Recognise clinical red flags for rare diseases, such as developmental regression, multisystem involvement, atypical presentation or course of common conditions, and lack of response to standard treatment
Skills	• Take a detailed three-generation family history and targeted developmental history. • Perform a focused clinical examination, including assessment for dysmorphic features and multisystem involvement • Identify when to initiate appropriate first-line investigations, including laboratory, metabolic, and genomic testing (e.g. WES/WGS)
Specific Competences	• Recognise diagnostic uncertainty and escalate appropriately • Communicate uncertainty and potential diagnoses clearly and empathetically with families • Refer in a timely manner to specialist centres and multidisciplinary teams

Vulnerable Child – Migrant Health

Knowledge	• Specific medicine relevant to migrant children, including risk factors for imported infectious, non-communicable diseases and psychiatric illness, including post-traumatic stress disorder. • Socio-cultural background and health needs of migrant children.

	• Barriers to high-quality healthcare for migrant children, including language, cultural, and socio-economic barriers. • Epidemiology of important imported communicable and non-communicable diseases. • Transition considerations from paediatric to adult care, and from one healthcare system to another.
Skills	• Identify socio-economic needs requiring social support. • Screen for communicable and non-communicable diseases prevalent in migrant populations. • Adaptation of national programmes on immunisation considering each child's immunisation status • Diagnose and manage malnutrition and specific dietary deficiencies. • Identify signs of substance misuse, violence, and risk-taking behaviour.

Vulnerable Child – Substance Abuse

Knowledge	• Prevalence and trends in substance use (alcohol, tobacco, cannabis, prescription drugs, inhalants, etc.) among youth. • Risk and protective factors (e.g., trauma, peer influence, genetic, mental health conditions, family history), social determinants influencing initiation and progression of substance use. • Pharmacology and effects of commonly misused substances. • Signs and symptoms of acute intoxication, withdrawal, and chronic use. • Long-term effects of substance use on physical and mental development in youth. • Relationship between substance use and mental health disorders (e.g., anxiety, depression, ADHD). • Impact on academic performance, social relationships, and legal issues.
Skills	• Recognise and manage intoxication, overdose, and withdrawal in the acute care setting. • Know indications for hospital admission and toxicology screening. • Recognise signs of substance use and assess for related physical or mental health issues. • Refer appropriately to addiction services, mental health providers, or social services.
Specific Competences	• Provide non-stigmatizing, empathetic care for adolescents with substance use concerns. • Advocate for a harm-reduction and trauma-informed approach to care.



Acute mild to moderately ill child & adolescent

ACUTE MILD TO MODERATELY ILL CHILD OR ADOLESCENT

Acute Mild to Moderately Ill Child or Adolescent - General Approach in an Ambulatory, Emergency, or Inpatient Setting

Knowledge *See also the chapter: System-based Approach - Knowledge*	**Clinical Concepts** ● Pathophysiology and natural history of self-limiting vs. progressive conditions in children ● Principles of triage, risk assessment, and decision-making in acute paediatric settings ● Pain management and symptom relief, including appropriate use of paracetamol and ibuprofen ● Psychosocial impacts of acute illness on the child and family, including school absence and anxiety **Public Health and Home Management** ● Hygiene promotion and other key public health strategies ● Guidance for home care and monitoring, including recognising signs that warrant escalation **Antibiotic Stewardship and Evidence-Based Care** ● Principles of antimicrobial stewardship ● Choosing Wisely initiative: ○ to reduce unnecessary investigations and interventions ○ Examples of low-value care (e.g., antibiotics for viral illness, unnecessary imaging for minor head trauma) ○ Risks of overdiagnosis and overtreatment (e.g., radiation exposure, medicalisation, anxiety) ○ Familiarity with local, national, and international Choosing Wisely paediatric guidelines **Red flags in** paediatric allergology, cardiology, dermatology, endocrinology, gastro-enterology, nutrition, hepatology, haemato-oncology, infectiology, immunology, nephro-urology, neurology-metabolic and rheumatology Early warning signs of clinical deterioration in children Use of paediatric early warning scores (PEWS) and structured assessment frameworks **Principles of paediatric resuscitation** (cfr acute severely ill child and adolescent) (Basic and Advanced Life Support)
Skills	● Perform structured assessments for acutely unwell children *as in system-based approach* ● Evaluate when an illness is self-limiting vs. requiring further escalation ● Assess the impact of illness on family dynamics and psychosocial well-being ● Recognise and respond to cultural and health literacy differences in patient and caregiver understanding ● Provide clear home care instructions and advice on warning signs ● Offer follow-up guidance and reassurance where appropriate ● Apply shared decision-making strategies to involve families in managing mild illness ● Adapt information to be culturally sensitive and appropriate to different backgrounds ● Interpret vital signs and red flag symptoms

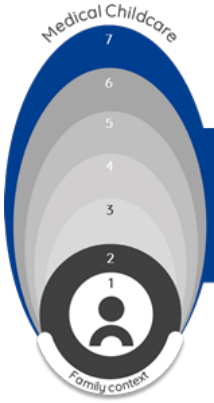
	● Apply the ABCDE approach to systematically assess acutely unwell children (see acute severely ill child and adolesce competencies)
Specific Competences	● Recognise and manage common mild to moderate childhood illnesses using evidence-based protocols ● Avoid unnecessary investigations and treatments, particularly for self-limiting conditions ● Maintain respectful communication when parental expectations conflict with evidence-based recommendations

Acute Mild to Moderately Ill Child or Adolescent - Common Conditions

Knowledge *See also the chapter: System-based Approach - Knowledge*	**Overview of Common Illnesses and complaints** ● Spectrum of mild to moderate paediatric conditions ● Distinction between viral and bacterial infections ● Upper and lower respiratory tract infections (URTI, bronchiolitis, pneumonia) ● Gastroenteritis, dehydration, and oral rehydration therapy (ORT) ● Mild to moderate asthma and reactive airway disease ● Urinary tract infections and fever without source ● Minor injuries and skin infections, viral rashes, allergic reactions **Clinical Decision-Making** ● Appropriate use of diagnostic tools and how to avoid over-investigation ● Principles of safe and effective first-line treatment ● Early recognition of conditions requiring escalation (e.g., complicated pneumonia, sepsis)
Skills	**Take an age-appropriate history** ● Birth weight, length, and neonatal feeding issues. ● Birth history, neonatal complications, early milestones. ● Failure to thrive, vomiting, lethargy, abdominal pain ● Growth patterns, height velocity, and pubertal development. ● Timing of pubertal onset and progression. ● Menstrual irregularities ● Feeding difficulties and nutritional intake. ● Dietary habits, physical activity, and risk factors for obesity and metabolic syndrome. ● Sleep disturbances and psychological factors affecting weight and metabolic health. ● Frequency, duration, and severity of infections (e.g., opportunistic infections, abscesses, pneumonia, meningitis). ● Need for prolonged or repeated courses of antibiotics. ● Hospital admissions (for infections, particularly in infancy) ● Microbial exposure (contact with sick individuals, animal contacts) travel, antibiotic use, vaccinations. ● Complete family history ○ Family history of unexplained neonatal deaths, metabolic conditions, or consanguinity **Obtain a structured system-based detailed history and symptom assessment** **(Appendix A)** **Perform a general and structured physical examination** ● Assess growth and nutritional status. ● Recognise and interpret common acute presentations: ○ Fever, cough, dyspnoea, vomiting, diarrhoea, constipation, pain, lumps, rashes ○ Genitourinary complaints, minor injuries, behavioural symptoms (fear, anger, suicidal thoughts) ● Interpret clinical signs (e.g., murmurs, cyanosis, failure to thrive, etc.) and use them to guide differential diagnoses ● Assess respiratory status: respiratory rate, work of breathing, auscultation for wheeze, crackles, or stridor, use of accessory muscles and presence of nasal flaring or tracheal tug, cyanosis ● Assess hydration status (e.g., capillary refill, skin turgor, urine output)

	● Recognise skin signs of systemic disease (e.g., petechiae in meningococcal sepsis, café-au-lait spots in neurofibromatosis, malar rash in lupus, Gottron's papules in JDM) **Conduct a focused system-based physical examination (Appendix B)** ● Identify signs of complicated or severe infections requiring referral/escalation ● Provide initial stabilisation for febrile seizures ● Perform venous puncture ● Perform lumbar puncture ● Interpret: ○ Point-of-care tests (e.g., CRP, rapid tests) ○ Blood gases and basic labs (e.g., electrolytes) ● Initiate first-line treatments: ○ Inhaled bronchodilators for mild asthma ○ ORT for mild to moderate dehydration ○ IV fluids for moderate dehydration when needed ● Prescribe medications safely using weight- and age-based dosing ● Manage intermediate respiratory distress: ○ Oxygen therapy ○ Inhaled therapy ○ Escalation to non-invasive ventilation
Specific Competences	● Manage febrile seizures and moderate dehydration ● Differentiate between normal and pathological variants of growth and puberty. ● Differentiate allergic conditions from other paediatric diseases with overlapping symptoms (e.g., distinguishing between asthma and viral-induced wheeze, or urticaria and viral exanthems) ● Develop a broad differential diagnosis based on lesion morphology and distribution. ● Distinguish between infectious, inflammatory, allergic, and neoplastic dermatological conditions. ● Distinguish between benign and malignant haematological conditions. ● Differentiate between primary and secondary immunodeficiencies. ● Differentiate between metabolic disorders and other paediatric conditions with overlapping symptoms. ● Differentiate between upper and lower urinary tract infections. ● Differentiate between static and progressive neurological conditions. ● Differentiate between upper and lower airway disorders. ● Distinguish between inflammatory and non-inflammatory musculoskeletal pain. ● Recognise critical presentations: ○ Shock (hypovolaemic, distributive, cardiogenic) ○ Respiratory failure (including increased work of breathing, hypoxia) ○ Neurological compromise (e.g., reduced GCS, seizures) ○ Severe acute mental health crises (e.g., psychosis, major depression, suicidal ideation) ● Recognise allergological red flags requiring urgent referral, such as life-threatening anaphylaxis, severe steroid-dependent asthma, or failure to thrive due to allergic enteropathy.

	• Recognise dermatological indications for urgent referral in cases of rapidly progressing skin disease, extensive blistering, or systemic involvement. • Recognise red flags for endocrine emergencies (e.g., adrenal crisis, diabetic ketoacidosis). • Recognise gastroenterological, hepatological and nutritional red flags requiring urgent referral (including gastro-intestinal bleeding, severe acute abdominal pain (volvulus, invagination), peritonitis (intestinal perforation), foreign body ingestion (button battery, caustic substances,..), acute liver failure). • Recognise red flag symptoms suggestive of malignancy requiring urgent referral (e.g., persistent fever, unexplained bone pain, hepatosplenomegaly, pancytopenia). • Recognise red flag signs of immunodeficiency (e.g., recurrent deep-seated infections, poor vaccine response). • Recognise nephrological red flag symptoms suggestive of serious renal pathology (e.g., nephrotic syndrome with anasarca, severe hypertension). • Recognise neurological red flag symptoms requiring prompt intervention (e.g., rapidly progressive weakness, acute encephalopathy, signs of raised intracranial pressure, developmental regression). • Recognise respiratory-related red flag symptoms requiring urgent intervention (e.g., severe respiratory distress, oxygen desaturation). • Recognise rheumatological red flag symptoms requiring urgent intervention (e.g., systemic JIA with macrophage activation syndrome). • Recognise Red flags for secondary headache (e.g., morning headache, vomiting, visual changes). • Recognise and act promptly when escalation or hospital admission is needed • Manage moderate-to-severe acute illness confidently before referral • Initiate emergency interventions and resuscitation while awaiting further support • Collaborate effectively with emergency teams, paediatric critical care, and mental health services to ensure safe handover and continuity of care • Escalate care when clinical severity or atypical presentation warrants specialist input • Practise evidence-based, rational prescribing and investigation • Provide anticipatory guidance and safety-netting for home care and follow-up



Acute severely ill child & adolescent

ACUTE SEVERELY ILL CHILD and ADOLESCENT

Acute Severely Ill Child – Recognition & Initial Management (Emergency Phase)

Knowledge *See also Acute Mild to Moderately Ill Child or Adolescent*	• Early warning signs and red flags for severe illness • Principles of structured assessment (e.g. ABCDE approach) • Life-threatening conditions in children, including sepsis, anaphylaxis, burns, seizures, and altered consciousness • Clinical features of acute neurological presentations (seizures, syncope, coma) • Principles of triage and prioritisation in emergency settings

Skills	• Recognise the severely ill child using structured assessment (ABCDE)
	• Conduct focused, rapid history-taking and examination in emergency situations
	• Identify clinical signs of life-threatening conditions
	  ○ Sepsis in febrile children using sepsis screening tools
	  ○ Neurological emergencies including seizures, altered consciousness, or coma
	  ○ Burn severity and indicators for escalation
	  ○ Clinical signs of anaphylaxis (e.g., airway compromise, hypotension, urticaria)
	• Perform rapid prioritisation and triage in time-critical situations
	• Initiate immediate life-saving interventions
	• Establish peripheral intravenous access
	• Establish intraosseous access in emergency situations when intravenous access is not feasible
	• Initiate emergency sepsis management:
	  ○ Rapid assessment
	  ○ Fluid boluses
	  ○ Empirical antibiotics
	• Manage burns:
	  ○ Apply first aid
	  ○ Administer fluids and analgesia
	• Diagnose and treat paediatric seizures and status epilepticus:
	  ○ Administer benzodiazepines
	  ○ Escalate if seizures persist

Acute Severely Ill Child – Resuscitation & Stabilisation

Knowledge	• Recognition and pathophysiology of respiratory distress and respiratory failure
	• Shock assessment and emergency management principles
	• Monitoring strategies for critically ill children
	• Use and interpretation of the Glasgow Coma Score (GCS) in paediatrics
	• Understanding local hospital admission policies for acutely unwell children
	• Indications for advanced paediatric life support (APLS), mechanical ventilation and intensive care
	• Common interventions provided in PICU, including:
	  ○ Sedation
	  ○ Invasive monitoring
	  ○ Multi-organ support

Skills	• Recognise:
	  ○ Signs of respiratory distress and respiratory failure
	  ○ Different types of shock (hypovolaemic, distributive, cardiogenic)
	  ○ Neurological deterioration using the paediatric GCS
	  ○ Early indicators of PICU requirement
	  ○ Progression of severe illness requiring urgent escalation
	• Initiate immediate management of respiratory distress (oxygen therapy, airway support)
	• Perform shock management, including IV fluid boluses and monitoring response
	• Apply the Glasgow Coma Score for paediatric neurological assessment
	• Stabilise critically ill children with:
	  ○ IV fluid resuscitation
	  ○ Oxygen delivery and respiratory support
	• Evaluate via vital signs and neurological monitoring
	• Recognise need for mechanical ventilation or ALS, and prepare transfer
	• Coordinate timely and effective transfer to PICU in collaboration with critical care teams

Specific Competences	• Make effective, timely decisions in acute and critical care settings • Safely stabilise children prior to PICU transfer • Communicate and coordinate clearly with emergency and critical care teams • Understand limitations of one's own level of care and when to escalate • Ensure safe handover and continuity of care during transitions between departments

Acute Severely Ill Child – Escalation

Knowledge	• Indications for PICU admission, including respiratory failure, cardiovascular instability, neurological deterioration, and post-operative care according to national organisation of care
	• Basic principles and modes of mechanical ventilation, including volume vs. pressure control, PEEP, and oxygenation strategies
	• Use of sedation and analgesia in critically ill children, including drug choices, titration, and weaning
	• Basic principles of haemodynamic monitoring:
	  ○ Invasive (arterial lines, central venous pressure)
	  ○ Non-invasive (echocardiography, perfusion assessment)
	• Ethical principles in PICU:
	  ○ Consent, withdrawal of care, best interests, parental involvement in decision-making

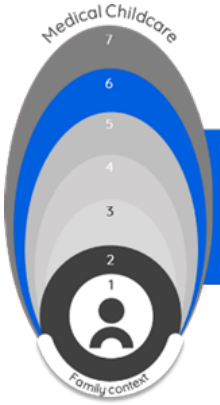
Skills	• Evaluate children who may require PICU admission based on clinical presentation and organ dysfunction • Interpret haemodynamic parameters and recognise cardiovascular compromise • Basic adjustment of fluid needs, restriction or substitution • Basic ventilator settings according to age and underlying problem • Adjust ventilator settings in collaboration with the critical care team • Initiate and monitor sedation and analgesia regimens, including managing side effects • Manage haemodynamic instability with fluids, inotropes, and vasoactive agents as appropriate • Participate in ethical decision-making by contributing to discussions around goals of care and escalation
Specific Competences	• Participate in critical care handovers and escalation planning

Acute Severely Ill Child – Accidents and Poisoning

Knowledge	**Trauma Management** • Recognition and emergency management of paediatric trauma victims • Principles of cervical spine immobilisation in trauma cases • Local guidelines for safe transfer of critically injured children • Systematic trauma evaluation in children (including airway, breathing, circulation, disability, exposure) **Paediatric Poisoning** • Common childhood poisonings and toxic exposures: ○ Paracetamol, iron, button batteries, coins, ethylene glycol, lead, household chemicals, complementary/over-the-counter-medicines, and toxic plants • Epidemiology of paediatric poisoning (local/global trends and age demographics) • Clinical features and toxicology signs/symptoms of common poisons • Role and protocols of poison centres (access, consultation, online data sources) • Specific antidotes and elimination strategies (e.g., N-acetylcysteine for paracetamol) • Poisoning as a potential indicator of child abuse or neglect • Community hazards and home risks (e.g., dishwasher fluids or tablets, pesticides, industrial/renovation chemicals)

Skills	• Obtain a focused trauma or poisoning history, including:
	  ○ Time, substance, quantity, route, intent, and associated symptoms
	• Perform trauma-focused assessment using structured approaches (ABCDE)
	• Identify clinical signs of toxidromes and poisoning severity
	• Recognise red flags requiring urgent intervention or specialist input
	• Assess for potential safeguarding concerns in poisoning or injury cases
	• Conduct a systematic trauma examination, including cervical spine protection
	• Stabilise trauma patients and prepare for safe transfer following local protocols
	• Perform initial wound care and repair simple lacerations
	• Initiate acute management of poisoning:
	  ○ Airway and cardiovascular support
	  ○ Decontamination measures (activated charcoal, lavage where indicated)
	  ○ Administer specific antidotes (e.g., N-acetylcysteine, deferoxamine)
	• Monitor vital signs and use screening/lab tools to aid diagnosis and decision-making
	• Liaise with toxicology, trauma teams and other subspecialists (eg. paediatric endoscopist, …) for advanced support or transfer

Specific Competences	● Demonstrate competence in assessing and managing paediatric trauma in emergency settings ● Make rapid and informed decisions in poisoning scenarios ● Apply best practices in wound care and trauma stabilisation ● Collaborate effectively with poison centres, toxicologists, and trauma teams ● Integrate safeguarding principles when poisonings may indicate neglect or abuse ● Promote preventive strategies to reduce risk of common poisonings in the community

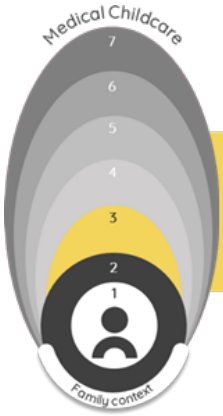


Acute severely ill neonate

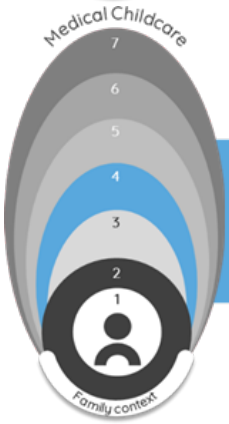
ACUTE SEVERELY ILL NEONATE

Knowledge *See also the chapter System-based Neonatology*	A paediatrician should develop a **comprehensive understanding of neonatal medicine**, ensuring knowledge in epidemiology, pathophysiology, clinical presentation, management, and prevention of conditions affecting the neonate
Skills	● Perform neonatal resuscitation, manage airway obstructions and ensure adequate ventilation, tailoring care to the severity of illness. ● Stabilise and transfer a sick neonate safely ● Administer emergency medications as per neonatal guidelines ● Recognise the need for surfactant ● Perform procedures essential for clinical practice with ill neonates ○ Chest compression ○ Facemask ventilation, ○ Laryngeal mask airway (LMA) insertion /tracheal intubation according to local practice ○ Oxygen supplementation and techniques of invasive and non-invasive ventilation (CPAP, HFNC) ○ Insertion of umbilical catheters ○ Arterial and venous access ○ Needle thoracocentesis ● Conduct history taking, clinical examination and laboratory test evaluation considering ranges in neonates ● Be familiar with nutritional strategies for preterm infants, including fortification of breast milk and counselling for human milk pumping and storage of milk ● Assess and manage neonatal respiratory conditions ● Assess and support neonatal cardiovascular stability and identify the need for appropriate inotropic support. ● Perform a comprehensive neonatal neurological assessment and manage neurological conditions ● Manage fluid, electrolytes and acute kidney injury ● Assess and manage fluid intolerance and abdominal presentations ● Maintain normothermia using incubators and radiant warmers; identify and manage hypothermia or hyperthermia ● Refer for retinopathy and hearing impairment screenings when indicated ● Demonstrate proficiency in using and interpreting specific diagnostic tools including: Blood gas analysis, Bilirubin levels and other lab tests, Chest X-rays, chest and abdominal ultrasound, Cranial ultrasound, Newborn screening and metabolic testing ● Administer medications safely in neonates
Specific Competences	Deliver neonatal care that is compassionate, family-centred, equitable, appropriate, and effective for treating health issues and promoting overall health ● Manage patients with acute diseases in inpatient settings and demonstrate the ability to anticipate and recognise complications and need for transfer ● Participate in team-based care for critically ill neonates ● Understand the emotional impact on families of having a child born prematurely or with life-threatening or chronic conditions, and exhibit communication skills that foster open dialogue

	● Deliver parental support and counselling: communicating prognosis and expected outcomes for neonates with complex conditions. ● Participate in ethics discussions and decisions in neonatal care, including compassionate and ethical decision-making in neonatal care



Child and adolescent with a long-term condition



Child and adolescent with complex and integrated care needs

CHILD/ADOLESCENT WITH A LONG-TERM CONDITION AND COMPLEX AND INTEGRATED CARE NEEDS

Child with disability and complex health needs - General Approach

Knowledge	• International Classification of Functioning, Disability and Health (ICF) as the WHO framework for measuring health and disability at both individual and population levels focusing on body structure, function, activity and participation • Common chronic and complex conditions, including genetic disorders, severe disabilities, and life-limiting illnesses. • Role of family and social support systems in chronic disease management and importance of personalised, family-centred care plans addressing medical, developmental, and psychosocial needs • Benefits of integrated care in chronic disease and disabilities management.
Skills	• When conducting a **clinical assessment** take into consideration physical, cognitive, developmental, and psychosocial aspects of life and formulate family-centred plans of care with child-specific characteristics and needs in mind • Integrate **preventive care and health promotion** strategies including screening programmes and vaccinations for this population • Empower children and families with disability to reach their full potential, promote participation and quality of life • Offer and refer children and their families for emotional support and counselling
Specific Competences	• Provide non-stigmatizing, empathic care using a personalised holistic approach focusing on quality of life, maximising their participation and function in society

Chronic Disease Monitoring

Knowledge	• Principles of chronic disease progression and monitoring strategies.
	  ○ Impact of chronic conditions on developmental milestones.
	  ○ **multisystem involvement** in complex conditions
	• Common co-morbidities in patients with chronic diseases (e.g., respiratory complications in neuromuscular disorders, osteoporosis, malnutrition, or recurrent infections).
	• Effect of chronic diseases on feeding methods (including nasogastric feeding and gastrostomy use), nutritional requirements and gastrointestinal symptoms like reflux and constipation
	• Effect of chronic disease on sleep, pain, daily routines
	• Effect of chronic disease on mobility and use of equipment
	• Effect of chronic disease on participation in social and educational activities

Skills	• Conduct periodic assessments to track disease progression and treatment effectiveness. • Implement strategies for preventing disease-related complications. • Proactively manage changes in disease patterns • Recognise and manage disease impact on **growth, development, mental health** and quality of life • Manage complications and refer appropriately
Specific Competences	• Ensuring continuity of care for children with chronic illnesses. • Coordinating and integrating care between primary and specialised healthcare providers.

Transition Planning

Knowledge	• Adolescent's developmental stages and indicators for capacity for participation in healthcare decisions. • Principles of transitioning from paediatric to adult healthcare services.
Skills	Educate families and children on self-management skills.
Specific Competences	Facilitating smooth healthcare transitions.

Medication Management

Knowledge	• Awareness of polypharmacy and its risks • Drug interactions and potential side effects. • Factors affecting medication adherence in paediatric patients.
Skills	• Assess and adjust medication regimens to prevent polypharmacy complications.

	• Educate families on the importance of adherence and potential consequences of missed doses.
Specific Competences	• Minimizing unnecessary medication burden while maintaining therapeutic efficacy. • Strengthening family engagement in medication adherence. • Implementing monitoring tools for tracking adherence trends. • Ensure up to date information on new medication or medical devices and facilitate well-informed decisions

Palliative care

Knowledge	• Principles of advanced care planning and palliative care, including symptom management and family support. • Legal framework and ethical barriers in paediatric palliative care
Specific Competences	• Demonstrate the ability to engage in ethical decision-making in paediatric care, including considerations of quality of life and do-not-resuscitate (DNR) decisions, and to support children and their families in end-of-life discussions and advance care planning.

Integrated Paediatrics



INTEGRATED PAEDIATRICS

Caring for children extends beyond the diagnosis and treatment of disease. It requires an integrated approach that considers the child within the broader context of their physical, mental, social, and family environment. Every professional working in a medical context with children, regardless of setting or role, should possess the training and competences required to engage confidently across these interconnected domains of care. This chapter addresses the additional knowledge and skills paediatricians need to deliver truly integrated, holistic, and patient-centred care to every child.

Genetics

Knowledge	• Principles of inheritance (autosomal dominant, recessive, X-linked, mitochondrial). • Awareness of genomic medicine and its role in personalised paediatric care as well as in rare diseases. • Ethical and psychological aspects of genetic counselling and predictive testing in children/families. • Understand the principles of informed consent for diagnostic genetic testing and follow local referral and testing pathways
Skills	• Basics of dysmorphology assessment and identifying physical features suggestive of genetic disorders • Indications for genetic testing, whole genome sequencing, and chromosomal microarray. • Take consent for diagnostic genetic testing.

Paediatric Pharmacology

Knowledge	• Age-related differences in drug absorption, distribution, metabolism, and excretion. • Recognition of neonatal and paediatric-specific drug metabolism pathways (e.g., immature renal and hepatic clearance). • Influence of nutrition, prematurity, and genetic polymorphisms on drug response. • Neonatal pharmacology: drug adjustments based on postnatal age • Dose adjustments according to kidney function. • Drug interactions inducing or inhibiting drug metabolism (cytochrome P450). • Drug formulations suited for children, including liquid suspensions, IV preparations, and transdermal patches. • Meaning of off-label use. New drug developments (e.g. biologicals, modulators, gene therapy…) • **For specifics see** **System-Based Diseases**

Skills	• Calculating weight-based and age-appropriate drug dosages • Therapeutic drug monitoring (TDM) for drugs with narrow therapeutic index (e.g., anticonvulsants, aminoglycosides). • Identification of situations requiring empirical vs. targeted therapy • Use electronic resources and tools to access up-to-date information on paediatric drugs and treatment options. • Leverage technologies like dosing calculators, drug interaction checkers, and clinical decision support systems to support safe drug prescribing and monitoring

Pain and Sedation Management in Paediatrics

Knowledge	• Drugs used in pain pharmacotherapy in children • Indications and contraindications for opioid use in paediatrics • Differentiating nociceptive vs. neuropathic pain in children • Indications for mild, moderate, and deep sedation in paediatrics • Importance of skin-to-skin care, breastfeeding, and sucrose solutions for neonatal procedural pain • Chronic pain syndromes in children, including migraines, complex regional pain syndrome (CRPS), functional abdominal pain, persistent physical symptoms
Skills	• Using age-specific pain assessment scales • Recognising non-verbal indicators of pain in neonates and non-communicative children • Treating acute pain • Patient analgosedation and management of sedation-related complications (airway compromise, hypoxia, emergence delirium)

Paediatric Surgery

Knowledge	• Common congenital anomalies (e.g., inguinal hernia, undescended testes, hypospadias, cleft lip/palate). • Acute surgical emergencies (e.g., appendicitis, intussusception, pyloric stenosis, malrotation/volvulus, necrotising enterocolitis). • Recognition of “red flag” signs (bilious vomiting, acute abdomen, scrotal swelling, airway obstruction). • Principles of perioperative care: preoperative preparation (fasting, fluid management), anaesthetic considerations, and post-operative monitoring (pain control, infection prophylaxis). • Risks in paediatric anaesthesia and complications. • Surgical wound care and post-operative complications • Rehabilitation following surgical procedures. • Principles of trauma management in children

	For specifics see System Based Diseases (Gynaecology, ENT, Ophthalmology)
Skills	• Provide preoperative preparation (NPO status, IV fluids, analgesia). • Recognising postoperative complications requiring immediate intervention. • Provide postoperative monitoring (vital signs, pain control, wound assessment, bleeding).
Specific Competences	• Coordination of multidisciplinary peri-operative care for children with complex medical and surgical needs (including long-term follow-up, with rehabilitation, physiotherapy and nutritional support where required)

Sports Medicine and Rehabilitation in Paediatrics

Knowledge	• Importance of adequate nutrition, hydration, and rest in young athletes • Acute injuries (fractures, dislocations, sprains, and strains) and overuse injuries (apophysitis, stress fractures, tendinopathies) • Indications for imaging (X-ray, MRI) in musculoskeletal injuries • Role of physiotherapy and occupational therapy in rehabilitation
Skills	• Perform targeted physical examinations, including pre-participation and injury-specific assessments • Recognition and treatment of common injuries, including sprains, fractures, and concussions • Define the need for rehabilitation and referral to Physical and Rehabilitation Medicine

SYSTEM-BASED APPROACH



SYSTEM-BASED APPROACH

ADOLESCENT MEDICINE

Knowledge *See also Healthy Child - Normal Development and Growth, Healthy Child - Nutrition and Fluids, Healthy Child - Preventative and Predictive Medicine, Vaccines and Screening, Healthy Adolescent*	**Adolescent growth and development** ● Variations and disorders of puberty and growth (see Healthy Child – Normal Development and Growth and Healthy Adolescent) ● The impact of normal and abnormal growth and development on adolescent well-being **Eating Disorders including Obesity** ● The spectrum of presentations ● Prevention and risk factors ● Developmentally appropriate treatment strategies **Developmental aspects** ● Epidemiology in adolescent sexual behaviour **Sexual health** ● Sexually transmitted infections including HIV ● Diagnosis and treatment of menstrual disorders. ● Diagnosis of teenage pregnancy ● Indications for a pelvic examination in the female adolescent and obtaining appropriate specimens. **Medical Conditions in Adolescents** ● Epidemiology, clinical features, diagnosis and management of common organ- specific conditions that present or worsen during adolescence. ● Functional and somatic disorders ● Sleep disorders ● Gender dysphoria **Chronic conditions** ● Impact of chronic conditions on the development and emotional well-being of adolescents and their families ● Special healthcare needs. ● Adherence to treatment regimens. **Transition** ● Transfer of care from the paediatric to the adult setting. ● Promotion of optimal transition of care. **Mental Health (screening tools/disorders/crises/neurology)** ● Epidemiology, clinical features, diagnosis and management of common mental health disorders. ● Psychotherapeutic and pharmacological indications. ● Suicide attempt ● Indications for referral to a mental health professional. **Substance use, misuse and abuse** ● Epidemiology, prevention, risk factors, identification and evaluation of alcohol, tobacco and other substances. ● Impact on health and well-being. ● Indications for referral

Specific Skills Competences *See also Vulnerable Child - Migrant Health*	• Establish positive, understanding, non-judgmental, respectful and empathic therapeutic relationships with adolescents and their families and be able to deal with confidentiality issues. • Demonstrate appropriate interviewing skills, listen effectively, being aware and responsive to nonverbal cues. • Conduct a psychosocial assessment, selecting and using an appropriate screening tool (eg. HEEADSSSSS, SSHADESS, CRAFFT, …). • Assess family function and dynamics as appropriate. • Conduct effective short-term counselling for adolescents and their families. • Demonstrate effective clinical judgment and problem-solving to address the most prevalent adolescent problems, including interpreting available data and integrating information to generate differential diagnoses. • When appropriate, implement an effective management plan in collaboration with the adolescent, their family, and school. • Use preventive and therapeutic interventions effectively. • Building rapport and trust with adolescents and their families. • Provide clear explanations of investigations, diagnosis and management to adolescents and when appropriate to their families. • Effectively handle conflict situations between adolescents and their families. Arrange appropriate follow-up care services for adolescents and their families. • Navigating complex conversations with cultural sensitivity and respect. • Use distinct strategies to engage the reluctant adolescent in the therapeutic process (motivational interviewing, systemic approach)

ALLERGIC DISEASES

A paediatrician should develop a comprehensive understanding of paediatric allergology, ensuring competence in **the recognition, diagnosis, initiating management, and appropriate referral of the following conditions** affecting newborns, children and adolescents, considering their age-specific needs.

Knowledge	● Immunological mechanisms underlying allergic diseases, including hypersensitivity reactions and immune tolerance. ● Epidemiology, genetics, and environmental factors influencing allergic disease, including the impact of climate change on aeroallergen exposure (e.g. prolonged and intensified pollen seasons, increased mould growth) and its contribution to rising rates of allergic sensitisation. ● Developmental aspects of the immune system and their impact on allergic disorders in infants, children, and adolescents. ● IgE-mediated allergic diseases: ○ Food allergies, including immediate-type hypersensitivity reactions. ● Anaphylaxis and its emergency management, ● Insect venom allergy. ● Drug allergies, including beta-lactam hypersensitivity. ● Non-IgE-mediated allergic conditions: ○ Cow's milk protein allergy ○ Food protein-induced enterocolitis syndrome (FPIES). ○ Eosinophilic gastrointestinal disorders. ● Respiratory allergies: ○ Allergic rhinitis and its impact on asthma. ● Paediatric asthma and its allergic phenotypes. ● Cutaneous allergies: ○ Atopic dermatitis and its allergic triggers. ○ Urticaria and angioedema (acute and chronic forms). ○ Contact dermatitis and allergic skin reactions. ○ Drug and vaccine-related allergic reactions ● Immunotherapy and Emerging Treatments ● Recognition and management of vaccine-related allergic responses. ● Indications and protocols for allergen-specific immunotherapy. ● Biologic therapies for severe allergic diseases (e.g., monoclonal antibodies for asthma and urticaria). ● Knowledge of dietary management strategies for food allergies, including allergen avoidance and desensitisation protocols. ● Diagnostic tools ○ Skin prick testing for aeroallergens, food allergens, and venom allergy. ○ Serum-specific IgE testing for confirmation of sensitisation. ○ Oral food challenges and their role in allergy diagnosis and tolerance induction. ○ Spirometry and peak flow measurement in children with suspected allergic asthma. ○ Fractional exhaled nitric oxide (FeNO) as a biomarker for eosinophilic airway inflammation. ○ Patch testing for allergic contact dermatitis.

Specific Skills & Competences	**Manage** ● Paediatric asthma management: ○ Stepwise pharmacological approach following national guidelines. ○ Use of inhaler devices and adherence strategies. ○ Identification of allergen triggers and implementation of avoidance measures. ○ Management of allergic rhinitis: ▪ Use of intranasal corticosteroids and antihistamines. ● Allergic Reactions ○ Recognition and emergency treatment of anaphylaxis, including: ▪ intramuscular administration of adrenaline (epinephrine), ▪ Use of adjunctive therapies (antihistamines, corticosteroids, bronchodilators). ○ Long-Term Management of Allergic Diseases ● Food allergy: ○ Development of individualised food avoidance plans. ○ Education on emergency action plans, including adrenaline autoinjector training. ○ Chronic urticaria and angioedema: ○ Differentiation between allergic and non-allergic causes. ○ Pharmacological treatment approaches, including antihistamines and biologic agents. ● Educate families on allergic disease prevention, trigger avoidance, and treatment adherence. ● Provide clear guidance on the correct use of adrenaline autoinjectors and asthma inhalers. ● Address psychosocial concerns, such as anxiety related to food allergies and the impact of chronic allergic diseases on quality of life.

CARDIAC DISEASES

A paediatrician should develop a comprehensive understanding of paediatric cardiology, ensuring competence in **the recognition, diagnosis, initiating management, and appropriate referral of the following conditions** affecting newborns, children and adolescents, their age-specific needs.

Knowledge	**Paediatric Cardiac Physiology and Development** ● Normal development and anatomical features of the cardiovascular system in neonates, infants, children, and adolescents ● Changes that occur in the cardiovascular system including foetal circulation, transition at birth, and the gradual adaptation to adult patterns and their implications for health. **Congenital Cardiovascular Diseases** ● Pathophysiology, clinical presentation and treatment options (medical, surgical, or interventional treatment) for common congenital heart diseases, such as: ○ Acyanotic: ▪ *Left to right shunt*: Atrial and Ventricular Septal defects, Patent Ductus Arteriosus ▪ *Obstructive lesions*: Coarctation of the Aorta, Congenital valve diseases (Pulmonary Stenosis, Aortic Stenosis, Mitral stenosis) ○ Cyanotic: ▪ *Right sided obstructive lesions with shunt* : Tetralogy of Fallot, Pulmonary Atresia, Tricuspid Atresia, Ebstein anomaly ▪ *Mixing lesions*: Transposition of the Great Arteries, Single Ventricle, Truncus arteriosus, Total Anomalous Pulmonary Venous return **Heart Failure and Cardiomyopathies in Children** ● Aetiology, pathophysiology of different types of paediatric heart failure, including its clinical presentation, and staging. ● Pathophysiology and treatment of paediatric cardiomyopathies (dilated, hypertrophic, restrictive). ● Principles of paediatric pharmacokinetics and pharmacodynamics in relation to cardiovascular drugs, ensuring appropriate dosing and monitoring ● Indications for heart transplantation in paediatric patients **Cardiac Arrhythmias in Paediatric Populations** ● Common arrhythmias in children, such as supraventricular tachycardia (SVT), ventricular arrhythmias, and long QT syndrome. ● Indications for interventions such as antiarrhythmic medications, catheter ablation, and device therapy (e.g., pacemakers, defibrillators) in children. ● Monitoring and management of arrhythmias in paediatric patients with underlying congenital heart defects or other systemic diseases. **Paediatric Hypertension** ● Aetiology, classification (primary vs. secondary), clinical presentation and associated risk factors of paediatric hypertension. ● risk factors in children for developing hypertension, including obesity, family history, and comorbidities like diabetes.

	• Management of paediatric hypertension with appropriate lifestyle interventions and pharmacological therapy **Acquired heart disease** Pathophysiology, clinical presentation and treatment options (medical, surgical, or interventional treatment) for common congenital heart diseases, such as • Infective Endocarditis • Rheumatic Heart Disease • Myocarditis • Pericarditis • Cardiovascular disease, in children with systemic conditions (e.g., Kawasaki disease)
Specific Skills Competences	**Clinical Assessment and Diagnosis** • Perform a comprehensive cardiovascular assessment in paediatric patients, including history taking, physical examination, and assessment of growth and development. • Recognise the signs and symptoms of common and rare paediatric cardiovascular conditions (e.g., congenital heart defects, arrhythmias, cardiomyopathies, and acquired conditions like rheumatic heart disease). • Interpret clinical signs (e.g., murmurs, cyanosis, failure to thrive, etc.) and use them to guide differential diagnoses. • Be familiar with the pharmacological agents used in the treatment of paediatric cardiovascular conditions, such as diuretics, antiarrhythmic drugs, anticoagulants, and antihypertensive medications • Understand and interpret the findings from diagnostic tools, such as electrocardiogram (ECG), echocardiogram, chest X-ray, and cardiac MRI, in the context of paediatric patients. **Paediatric Cardiac Imaging and Diagnostics** • Gain proficiency in using and interpreting paediatric-specific cardiac imaging techniques such as: ○ **Echocardiography** (transthoracic, transoesophageal) ○ **Electrocardiography** (ECG) ○ **Chest X-ray** and **CT/MRI imaging** in partnership with paediatric radiology ○ **Cardiac catheterisation** (when appropriate for diagnostic or interventional purposes) • Understand the importance of non-invasive techniques, like ambulatory monitoring (Holter) and exercise testing, in assessing paediatric patients with suspected arrhythmias or exercise intolerance. **Long-term Follow-up of Paediatric Cardiac Conditions** • Effectively communicate with families regarding diagnosis, treatment options, and ongoing care, ensuring they understand the child's condition and care plan. • Advocate for and implement preventive strategies for cardiovascular health in children, including lifestyle modifications (nutrition, physical activity, etc.). • Establish long-term follow-up strategies for children with congenital heart disease, arrhythmias, or heart failure, including monitoring for complications and providing family support.

	• Provide counselling and management for children with chronic cardiac conditions to optimise quality of life and transition care to adult services • Determine the need for specialist referral

SKIN-DISEASES

A paediatrician should develop a comprehensive understanding of paediatric dermatology, ensuring competence in **the recognition, diagnosis, initiating management, and appropriate referral of the following conditions** affecting newborns, children and adolescents, considering their age-specific needs.

Knowledge	**Paediatric Skin Physiology And Pathophysiology** ● Embryology and physiology of the skin, including differences between adult and paediatric skin. ● Skin barrier function, immune response, and the role of microbiota in paediatric dermatology. ● Normal skin variations in neonates, infants, and adolescents. **Clinical pictures of common paediatric dermatological conditions** ● Neonatal acne ● Erythema toxicum neonatorum ● Milia and sebaceous hyperplasia ● Infantile haemangiomas ● Cutis marmorata and other benign vascular phenomena ● Atopic dermatitis, eczema, and allergic contact dermatitis ● Seborrhoeic dermatitis ● Psoriasis and related inflammatory dermatoses ● Acne vulgaris and associated conditions (hidradenitis suppurativa) ● Bacterial, viral, and fungal skin infections (impetigo, tinea, viral exanthems) ● Urticaria, angioedema, and mastocytosis ● Ichthyoses and genodermatoses (e.g., epidermolysis bullosa, neurofibromatosis) ● Connective tissue diseases (e.g., juvenile dermatomyositis, lupus) ● Pigmentary disorders, including vitiligo and albinism ● Disorders of hair and nails ● Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis (SJS/TEN) ● Staphylococcal scalded skin syndrome (SSSS) ● Purpura fulminans and meningococcaemia ● Drug-induced hypersensitivity reactions (e.g., DRESS syndrome)
Specific Skills Competences	● Understand the indications for and interpretation of dermatological investigations, including: ○ **Skin scrapings and cultures** for fungal and bacterial infections. ○ **Wood's lamp examination** for pigmentary and infectious conditions. ○ **Patch testing** for suspected allergic contact dermatitis. ○ **Skin biopsy indications and referral pathways** for histopathological analysis. ○ **Blood tests** (e.g., eosinophilia in atopic conditions, autoantibodies in lupus, IgE levels in allergic disorders). ○ **Dermoscopy** for the assessment of pigmented lesions and vascular abnormalities

	● Understand the indications for: ○ **Topical Treatments:** Use of emollients, topical steroids, calcineurin inhibitors, and keratolytics. Correct selection and application of topical antimicrobials and antifungals. Patient and caregiver education on adherence to topical therapy. ○ **Systemic Treatments:** Indications for systemic antibiotics, antifungals, and antivirals. Use of antihistamines and immunosuppressants in paediatric dermatology. Monitoring for side effects and treatment response. ● Manage **acute reactions:** Acute allergic reactions, including anaphylaxis. Severe eczema flares, urticaria, and angioedema. ● Perform **Wound Care and Procedural Skills:** ○ Proper dressing techniques for burns, ulcers, and blistering conditions. ○ Cryotherapy for benign skin lesions. ○ Incision and drainage of superficial abscesses. ● **Determine the need for specialist referral**

ENDOCRINE DISEASES

A paediatrician should develop a comprehensive understanding of paediatric endocrinology, ensuring competence in **the recognition, diagnosis, initiating management, and appropriate referral of the following conditions** affecting newborns, children and adolescents, considering their age-specific needs.

Knowledge	● Normal endocrine physiology, including hormone regulation and feedback mechanisms (hypothalamus, pituitary gland, peripheral endocrine glands) ● Knowledge of growth and pubertal development, including variations of normal and abnormal presentations. ● Recognition of the interplay between endocrinology and metabolism in paediatric health and disease. ● **Pituitary disorders** ○ Hyper, hypofunction disorders ○ Adenomas, craniopharyngioma ○ Central thyroid/adrenal gland disorders ○ AVP-D, Arginine vasopressin deficiency ● **Disorders of Growth:** ○ Short stature: growth hormone deficiency, Turner syndrome, chronic disease-related growth impairment. ○ Tall stature: Klinefelter syndrome, Marfan syndrome, endocrine causes (e.g., growth hormone excess, precocious puberty). ● **Thyroid Disorders:** ○ Congenital hypothyroidism and newborn screening. ○ Acquired hypothyroidism (e.g., autoimmune thyroiditis). ○ Hyperthyroidism, including Graves' disease. ● **Adrenal Disorders:** ○ Congenital adrenal hyperplasia (CAH) ○ Adrenal insufficiency (primary and secondary). ○ Cushing syndrome and hypercortisolism. ○ Importance of issuing European emergency cards ● **Pubertal Disorders:** ○ Delayed puberty and hypogonadism. ○ Precocious puberty and its evaluation. ○ Polycystic ovary syndrome (PCOS) in adolescents. ● **Calcium and Bone Metabolism Disorders:** ○ Rickets and vitamin D deficiency. ○ Hyperparathyroidism and hypoparathyroidism. ○ Osteogenesis imperfecta and other metabolic bone diseases. ● **Obesity and Metabolic Syndrome:** ○ Pathophysiology of childhood obesity and insulin resistance. ○ Cardiometabolic risk factors and prevention strategies. ● **Paediatric Type 1 Diabetes Mellitus (T1DM)** ○ Pathophysiology, genetic predisposition, and autoimmune aspects. ○ Presentation, diagnosis, and management of newly diagnosed T1DM.

	○ Insulin therapy regimens and glucose monitoring strategies. ● **Paediatric Type 2 Diabetes Mellitus (T2DM):** ○ Risk factors and increasing prevalence in paediatric populations. ○ Screening, lifestyle interventions, and pharmacological treatment. ● **Monogenic and Secondary Diabetes:** ○ Maturity-onset diabetes of the young (MODY). ○ Neonatal diabetes and syndromic diabetes.
Specific Skills Competences	● **Growth and Developmental Assessment:** ○ Accurate measurement and interpretation of height, weight, and BMI. ○ Calculation of growth velocity and mid-parental height assessment. ● **Endocrine-Specific Examinations:** ○ Thyroid examination for goitre, nodules, or signs of dysfunction. ○ Assessment of pubertal stage using Tanner staging. ○ Blood pressure measurement for endocrine hypertension (e.g., Cushing's syndrome, adrenal disorders). ○ Skin examination for acanthosis nigricans (indicative of insulin resistance). ● **Endocrine Laboratory Testing:** ○ Growth hormone *stimulation* and suppression tests. ○ Thyroid function tests (TSH, free T4, free T3, thyroid antibodies). ○ Cortisol and ACTH stimulation testing for adrenal disorders. ○ Pubertal hormone assays (FSH, LH, oestradiol, testosterone). ● **Glucose and Metabolic Assessment:** ○ Blood glucose monitoring, including fasting glucose and HbA1c. ○ Oral glucose tolerance test (OGTT) for diabetes and insulin resistance assessment. ○ Lipid profiles in children with obesity or metabolic syndrome. ● **Interpret Imaging and Specialised Tests in partnership with paediatric radiology:** ○ Bone age assessment using wrist X-rays. ○ Thyroid ultrasound in suspected nodules or autoimmune thyroiditis. ○ Interpretation of MRI of the pituitary in suspected growth hormone deficiency or hypopituitarism. ● **Determining the need for specialist referral**

GASTRO-INTESTINAL/HEPATIC/NUTRITIONAL DISEASES

A paediatrician should develop a comprehensive understanding of paediatric gastro-intestinal, hepatologic and nutritional disorders, ensuring competence in **the recognition, diagnosis, initiating management, and appropriate referral of the following conditions** affecting newborns, children and adolescents, considering their age-specific needs.

Knowledge	● Normal gastrointestinal and hepatobiliary tract development and function. ● Differences between paediatric and adult gastrointestinal and hepatic anatomy and physiology. ● **Common Gastrointestinal, Hepatic and Nutritional Disorders** ○ Motility disorders including gastro-esophageal reflux disease (GORD), gastroparesis, slow transit constipation. ○ Helicobacter pylori infection, other causes of gastritis. ○ Food allergies including cow's milk protein allergy and food protein induced enterocolitis syndrome (FPIES). ○ Eosinophilic oesophagitis and eosinophilic gastrointestinal diseases. ○ Coeliac disease. ○ Toddler's diarrhoea. ○ Inflammatory bowel diseases (IBD) (Crohn's disease, ulcerative colitis, indeterminate colitis). ○ Disorders of Gut-Brain Interaction (e.g., infantile colic, irritable bowel syndrome, functional dyspepsia, functional abdominal pain, functional constipation). ○ Infectious causes of gastrointestinal symptoms (e.g., viral gastroenteritis, bacterial and parasitic infections). ○ Congenital diarrhoea and enteropathy. ○ Refeeding syndrome. ○ Malabsorption syndromes (e.g., lactose intolerance, exocrine pancreatic insufficiency) ○ Neonatal cholestasis including biliary atresia, progressive familial intrahepatic cholestasis, Alagille Syndrome, choledochal malformations and neonatal hepatitis. ○ Acute and chronic viral hepatitis. ○ Autoimmune liver diseases. ○ Metabolic liver diseases (including Wilson's disease, alpha-1 antitrypsin deficiency). ○ Metabolic dysfunction-associated steatotic liver disease (MASLD). ○ Advanced/ end-stage liver disease including cirrhosis and portal hypertension. ○ Acute and chronic pancreatitis ○ Cystic fibrosis ○ Assessment of nutritional requirements and use of growth charts ○ Nutrition in infancy, childhood and adolescence ● Management of malnutrition (e.g., growth failure, obesity, feeding/ eating disorders) with nutritional support, enteral nutrition, parenteral nutrition including their complications

	• Knowledge about intestinal failure (e.g., congenital diarrhoea and enteropathies, short bowel syndrome)
	• **Recognise Emergencies**
	  ○ Necrotizing enterocolitis
	  ○ Volvulus
	  ○ Congenital anomalies (e.g., abdominal wall defects, oesophageal atresia, intestinal atresia, pyloric stenosis, anorectal malformations, Hirschsprung's disease, meconium ileus and distal intestinal obstruction syndrome)
	  ○ Gastrointestinal bleeding (e.g., intestinal polyp, Meckel diverticulum)
	  ○ Foreign body ingestion
	  ○ Intussusception
	  ○ Acute appendicitis
	  ○ Acute liver failure
	  ○ Gallbladder stones
	  ○ Vitamin deficiency
	• **Diagnostic tools**
	  ○ Full blood count, coagulation studies, inflammatory markers, glucose, electrolytes, renal function tests, liver function tests, iron studies, lipase, albumin, vitamin levels
	  ○ Coeliac serology, autoimmune hepatitis serology, ANCA/ ASCA
	  ○ Stool analysis for infectious and inflammatory markers (e.g., stool cultures, faecal calprotectin, faecal elastase).
	  ○ Imaging techniques, such as ultrasound, X-ray, MRI, and magnetic resonance cholangiopancreatography (MRCP).
	  ○ Endoscopic procedures (upper GI endoscopy, colonoscopy, video capsule endoscopy).
	  ○ Genetic and metabolic tests relevant to gastroenterological, hepatological and nutritional disorders.

Specific Skills Competences	• **Interpret**
	  ○ Assessment of nutritional status including anthropometry
	  ○ Assessment of dehydration status
	  ○ Stool tests, blood tests, and imaging studies.
	  ○ Breath tests for lactose intolerance and small intestinal bacterial overgrowth.
	  ○ Endoscopic results
	  ○ Genetic and metabolic test results
	• **Manage**
	  ○ Specific nutrition requirement in gastrointestinal/ hepatological and nutritional diseases
	  ○ Knowledge about dietary management, e.g., gluten-free diet for coeliac disease or lactose-free diet for lactose intolerance.
	  ○ Avoidance of refeeding syndrome.
	  ○ First steps in case of ingestion accidents, e.g. foreign bodies, batteries, household chemicals.
	  ○ Dehydration, electrolyte imbalances, and nutritional deficiencies.
	  ○ Initiating management in GI emergencies.
	• **Technical Skills**

	○ Nasogastric tube insertion. ○ Assisting with endoscopic procedures when needed. ○ Basic abdominal ultrasound liver, spleen, gallbladder, pancreas, bowel, ascites. ● Determine the need for specialist referral

DISEASES in HAEMATOLOGY/ONCOLOGY

A paediatrician should develop a comprehensive understanding of paediatric haemato-oncological disorders, ensuring competence in **the recognition, diagnosis, initiating management, and appropriate referral of the following conditions** affecting newborns, children and adolescents, considering their age-specific needs.

Knowledge	**Basic Principles of Paediatric Haematology and Oncology** ● Normal haematopoiesis and the role of the bone marrow in blood cell production. ● Basic principles of cancer biology, including oncogenesis, tumour suppressor genes, and genetic predisposition to malignancies. ● The role of the immune system in haematological disorders and malignancies. ● Epidemiology, morbidity, mortality, and survivorship of childhood cancers. ● Side effects and late effects of treatments. ● Normal coagulation pathways and haemostasis. ● Ethical issues, including consent/assent, fertility preservation, and palliative care. **Common Paediatric Haematological Disorders** ● **Anaemias:** ○ Iron deficiency anaemia. ○ Haemolytic anaemia, including hereditary spherocytosis and glucose-6-phosphate dehydrogenase (G6PD) deficiency. ○ Sickle cell disease and thalassaemia. ○ Bone marrow failure syndromes (e.g., aplastic anaemia, Fanconi anaemia). ● **White Blood Cell Disorders:** ○ Neutropenia (congenital and acquired). ○ Leucocytosis and disorders of neutrophil function. ○ Immune deficiencies affecting haematopoiesis. ● **Platelet and Coagulation Disorders:** ○ Immune thrombocytopenic purpura (ITP). ○ Haemophilia A and B, von Willebrand disease, and other inherited bleeding disorders. ○ Thrombophilia and clotting disorders in paediatrics. **Common Paediatric Oncological Disorders** ● **Haematological Malignancies:** ○ Acute lymphoblastic leukaemia (ALL) and acute myeloid leukaemia (AML). ○ Lymphomas (Hodgkin and non-Hodgkin lymphoma). ○ Myelodysplastic syndromes. ● **Solid Tumours:** ○ Neuroblastoma. ○ Wilms' tumour. ○ Bone tumours (osteosarcoma, Ewing sarcoma).

	○ Central nervous system tumours (medulloblastoma, gliomas). ○ Soft tissue sarcomas (rhabdomyosarcoma). ○ Retinoblastoma. ● **Cancer Predisposition Syndromes**: ○ Li-Fraumeni ○ Familial retinoblastoma ○ Neurofibromatosis type 1. ● **Oncological Emergencies:** ○ Tumour lysis syndrome. ○ Superior vena cava syndrome. ○ Febrile neutropenia. ○ Spinal cord compression. ○ Acute bleeding and DIC **Indications for haematopoietic stem cell transplantation** **Diagnostic tools:** ● Blood tests: full blood test, blood film, reticulocytes, coagulation studies, haemoglobin electrophoresis. ● Bone marrow aspirate/biopsy, flow cytometry, cytogenetics. ● Imaging: X-ray, US, CT, MRI, PET for tumour diagnosis and staging. ● Lumbar puncture and CSF analysis for CNS involvement. ● Tumour markers (e.g., AFP, β-hCG). ● Genetic testing for inherited haematological disorders and cancer predisposition syndromes. ● Monitoring during chemotherapy: glucose, renal function, liver function, infection screen.
Specific Skills Competences	● **Interpret:** ○ Peripheral blood smear for abnormal cell morphology. ○ Bone marrow biopsy and aspiration. ○ Coagulation studies for suspected bleeding disorders. ○ Chest X-ray for mediastinal masses. ○ MRI for suspected central nervous system tumours. ○ Cytogenetics and molecular studies in leukaemia. ○ Staging investigations for solid tumours and lymphomas. ● **Recognise and manage:** ○ febrile neutropenia, following sepsis protocols. ○ prevention strategies in patients at high-risk of tumour lysis and begin treatment for tumour lysis (hydration, allopurinol, rasburicase, management of electrolyte imbalances). ○ bleeding in thrombocytopenia or haemophilia (platelets, factor replacement). ○ spinal cord compression with steroids and urgent imaging. ○ complications of immunosuppression: infections, mucositis, neutropenia. ○ complications such as graft-versus-host disease ● **Deliver** ○ anticipatory guidance regarding chemotherapy side effects (e.g., mucositis, immunosuppression) ○ supportive care, including:

	▪ iron supplementation for iron deficiency anaemia. ▪ hydroxyurea and transfusion programmes in sickle cell disease. ▪ haemophilia prophylaxis with factor replacement therapy. ▪ Screening for late effects: cardiotoxicity, neurocognitive issues, growth impairment. ● **Technical skills:** ○ Assist with or perform bone marrow aspirate and lumbar puncture ○ Insert and manage a nasogastric tube for nutrition. ○ Monitor physiological parameters and interpret blood gas, electrolytes, and glucose in acutely ill oncology patients. ○ Provide care for central lines (Hickman, portacath) under supervision. ● Determine the need for specialist referral

INFECTIOUS DISEASES

A paediatrician should develop a comprehensive understanding of paediatric epidemiology, clinical signs, diagnostic criteria, management, prevention of infectious diseases, ensuring competence in recognising, diagnosing, managing, and preventing infections in children of all ages.

Knowledge	**Basic Principles of Paediatric Infectious Diseases** ● Host-pathogen interactions and the immune response to infections in neonates, infants, and children. ● Differences in immune system function between neonates, infants, and older children. ● Epidemiology, transmission, clinical presentation, management and prevention of infectious diseases, including vaccine-preventable diseases. ● Laboratory and imaging diagnostics in relation to infectious and immunological diseases. ● Principles of bacterial and viral culture, ELISA, PCR techniques, flow cytometry, serology ● Antimicrobial therapy, mechanisms of resistance, and principles of antimicrobial stewardship. ● Immunomodulating therapy including immunoglobulins, monoclonal antibodies, cytokines and other immunotherapy. ● Preventative strategies such as immunisations and prevention of outbreaks of hospital infection and communicable diseases in the society. ● Mortality and morbidity rates of infectious diseases and factors influencing these rates. **Common Paediatric Infectious Diseases** ● **Neonatal Infections:** ○ Congenital infections (TORCH infections: Toxoplasmosis, Rubella, Cytomegalovirus, Herpes simplex, Syphilis). ○ Perinatal Infection (Group B Streptococcus (GBS) and Escherichia coli) ○ Early and late-onset neonatal sepsis ● **Respiratory Tract Infections:** ○ Upper respiratory tract infections (e.g., otitis media, tonsillitis, sinusitis, epiglottitis). ○ Lower respiratory tract infections (e.g., pneumonia, bronchiolitis, tuberculosis). ● **Gastrointestinal Infections:** ○ Viral and bacterial gastroenteritis ○ Clostridium difficile infection. ○ Hepatitis A, B, C, and E infections. ● **Central Nervous System Infections:** ○ Bacterial and viral meningitis. ○ Encephalitis and acute flaccid paralysis. ○ Brain abscess and tuberculous meningitis. ● **Bloodstream Infections, Sepsis and Septic Shock:** ○ Recognition and management of paediatric sepsis and septic shock. ○ Catheter-related bloodstream infections. ○ Management of multi-drug-resistant organisms.

	● **Skin and Soft Tissue Infections:** ○ Impetigo, cellulitis, and abscesses. ○ Staphylococcal scalded skin syndrome. ○ Necrotising fasciitis. ● **Vector-Borne and Zoonotic Infections:** ○ Malaria, Dengue, Lyme disease, and leishmaniasis. ○ Rabies and other zoonotic viral infections. ● **Sexually Transmitted Infections (STIs) in Adolescents:** ○ Human papillomavirus (HPV), Syphilis, Gonorrhoea, Chlamydia, HIV. ○ Perinatal transmission of sexually transmitted infections. ● **Fungal and Parasitic Infections:** ○ Candidiasis, Histoplasmosis, Cryptococcosis. ○ Helminthic infections (e.g., Strongyloidiasis, Ascariasis). ● **Infections from anaerobic bacteria :** ○ Botulism, Tetanus, Clostridium difficile ● **Mycobacterial Infection** ○ Mycobacterium tuberculosis ○ Non tuberculous Mycobacteria ● **Spirochetal Infection** ○ Syphilis ○ Leptospira ○ Borrelia ○ Bartonella **Immunocompromised and Hospital-Acquired Infections** ● Opportunistic infections in immunocompromised children (e.g., HIV, malignancy, post-transplant). ● Healthcare-associated infections (nosocomial infections, ventilator-associated pneumonia, urinary tract infections) ● Relationship between infections and anatomical abnormalities, surgical procedures, neonates, malignancies, presence of prosthetic material ● Principles of infection control and hospital epidemiology. **Vaccine-Preventable Diseases** ● Methods to prevent spread of infections, antibiotic prophylaxis, and infection prevention in travellers to (sub)tropic countries. ● vaccination-programme for healthy children, vaccination for children with specific conditions (e.g. asplenia and transplantation) and additional vaccinations for children traveling abroad.
Specific Skills Competences	● Perform microbiological diagnostics handling properly biological specimen while maintaining quality control standards and ensuring laboratory personnel safety ○ Venipuncture ○ Lumbar puncture ○ Urethral catheterisation ○ Fine needle aspiration ● Managing infectious diseases using evidence-based strategies and applying the principles of antibiotic stewardship ● Educating families about infection prevention, vaccination, and hygiene measures, counselling caregivers on antibiotic stewardship and appropriate antimicrobial use, addressing parental concerns regarding vaccine safety and hesitancy.

	• Infection control and prevention strategies in hospital and community settings and early detection and response to emerging infectious diseases and outbreaks.

IMMUNE-MEDIATED DISEASES (see ref. Rheumatic Diseases and Allergic Diseases)

A paediatrician should develop a comprehensive understanding of paediatric immunology and immunologic disorders, ensuring competence in **the prevention, recognition, diagnosis, initiating management, and appropriate referral of the following conditions** affecting newborns, children and adolescents, considering their age-specific needs. Immunology shows a significant overlap with a wide range of other conditions, as immune mechanisms play a central role in the pathophysiology of many diseases and across different organ systems.

Knowledge	**Basic Principles of Paediatric Immune-mediated diseases** ● Development of the immune system from foetal life to adolescence. ● Innate and adaptive immunity and their roles in infection and immune regulation. ● Function of major immune components: B cells, T cells, natural killer (NK) cells, dendritic cells, and the complement system. ● Immunological mechanisms underlying infection control, allergy, autoimmunity, and immunodeficiency. ● Immune tolerance and mechanisms leading to immune dysregulation. **Common Paediatric Immunological Disorders** ● **Primary Immunodeficiency Disorders (PIDs):** ○ Severe combined immunodeficiency (SCID). ○ Common variable immunodeficiency (CVID). ○ X-linked agammaglobulinaemia. ○ Chronic granulomatous disease (CGD). ○ DiGeorge syndrome ○ Complement-mediated disorders. ○ Congenital neutropenia ○ Congenital asplenia ● **Secondary Immunodeficiency:** ○ Immunosuppression due to chemotherapy, immunomodulatory therapy or biologics. ○ HIV/AIDS and other chronic infections causing immune dysfunction. ○ Protein-losing conditions affecting immunoglobulin levels (e.g., nephrotic syndrome, intestinal lymphangiectasia). ○ Haematopoietic stem cell transplantation and CART ○ Splenectomy ○ Neonates born to mothers undergoing biologics ● **Autoimmune and Autoinflammatory Disorders:** ○ Systemic lupus erythematosus (SLE). ○ Juvenile idiopathic arthritis (JIA). ○ Kawasaki disease. ○ Periodic fever syndromes (e.g., familial Mediterranean fever, PFAPA). ● **Allergic and Hypersensitivity Disorders:** ○ Anaphylaxis and mast cell disorders. ○ Food, inhalant and drug allergies. ○ Autoimmune cytopenias (e.g., autoimmune haemolytic anaemia, immune thrombocytopenic purpura). **Immunisation and Vaccine-Related Immunology** ● Mechanism of vaccines, including live and inactivated vaccines

	• Vaccine-related adverse events • Principles of herd immunity and population-based immunisation strategies • Vaccination in immunocompromised children. • Blood products, human immunoglobulins and timing of immunization **Specific diagnostic tools** • Basic immune screening tests: Full blood count with differential (lymphocyte subsets), serum immunoglobulin levels and specific antibody responses, vaccine antibody titres. • Specific lymphocyte function tests • Neutrophil oxidative burst tests • Lymphocyte proliferation assays and flow cytometry. • Complement pathway assays (CH50, AH50). • HLA typing and genetic testing for inherited immune disorders, primary immunodeficiencies. • Neutrophil function tests (e.g. oxidative burst) • Cytokine assays and autoantibody panels for autoinflammatory and autoimmune conditions. • Next-generation sequencing for identification of novel primary immunodeficiencies. • Joint swelling and evidence of chronic inflammation. • Chest X-ray for thymic shadow • CT scan of sinuses in chronic granulomatous disease
Specific Skills Competences	• **Monitor and prevent with:** ○ Regular follow-up and infection surveillance. ○ Prophylactic antibiotics or antifungals in severe immunodeficiency syndromes. • **Manage** ○ vaccine hesitancy and vaccine-related adverse events. ○ **Severe Infections in Immunodeficient Children with** ▪ Early recognition and initiation of broad-spectrum antibiotics. ▪ Consideration of antifungal and antiviral prophylaxis. ▪ Indication of parenteral immunoglobulin replacement therapy • **Anaphylaxis and Severe Hypersensitivity Reactions** ○ airway compromise and circulatory collapse with immediate administration of intramuscular adrenaline.

NEONATOLOGY

Knowledge	A paediatrician should develop a comprehensive understanding of neonatal medicine, ensuring competence in the recognition, diagnosis, management, and prevention of conditions affecting the newborn, including: **Basic Principles of Neonatology:** • Overview of morbidity and mortality • Physiological transition from intrauterine to extrauterine life. • Normal newborn physiology, including thermoregulation, glucose homeostasis, and cardiovascular adaptation.

	• Morphological variations, common minor problems and clinical manifestation of disease in the newborn period • Neonatal fluid balance and electrolyte homeostasis • Impact of perinatal factors, including prematurity, maternal conditions including high risk pregnancies and antenatal exposures on neonatal outcomes. • Impact of preterm birth and specific morbidity, mortality and long term outcomes • Pharmacokinetics and pharmacodynamics in the neonate • Fundamental principles of neonatal resuscitation • Ethical consideration in neonatal life sustaining treatments **Nutrition and Growth in Neonates:** • Breastfeeding and human milk benefits. • Growth monitoring in term and preterm infants. • Parenteral nutrition and feeding strategies for high-risk neonates. • Infant of diabetic mother **Neonatal Cardio-Respiratory Disorders:** • Transient tachypnoea of the newborn (TTN) • Respiratory Distress Syndrome (RDS)/Surfactant Deficiency • Meconium aspiration syndrome (MAS) • Apnoeas • Persistent Pulmonary Hypertension of the newborn • Diaphragmatic Hernia • Pulmonary air leaks • Congenital Heart Defect presenting in the neonatal period • Neonatal Arrhythmias **Digestive System Disorders** • Meconium Ileus • Intestinal Obstruction • Necrotizing Enterocolitis **Neurological Disorders:** • Neonatal seizures • Perinatal stroke • Hypoxic-ischaemic encephalopathy (HIE) and therapeutic hypothermia • Intracranial-Intraventricular Haemorrhage and Periventricular leukomalacia • Hypotonia • Peripheral Nerve Injuries including brachial plexus injuries • Neonatal Abstinence Syndrome • Neurodevelopmental outcomes. **Blood Disorders:** • Anaemia in the newborn • Neonatal Polycythaemia. • Haemorrhage in the newborn • Non-Immune Hydrops **Neonatal Jaundice:** • Physiological jaundice and breastfeeding jaundice. • Haemolytic disease of the newborn. • Kernicterus and Therapy of Hyperbilirubinemia • Prolonged jaundice and cholestasis. **Congenital and Neonatal Infections:** • Congenital infections (TORCH, syphilis, hepatitis B, HIV). • Perinatal Infections including Group B Streptococcus

	● Early- and late-onset neonatal sepsis **Congenital and Genetic Conditions:** ● Chromosomal disorders (e.g., Down syndrome, Turner syndrome). ● Inborn errors of metabolism presenting in the neonatal period. ● Structural anomalies requiring early intervention (e.g., congenital diaphragmatic hernia, neural tube defects, congenital heart diseases).
Specific Skills Competences	● Perform neonatal resuscitation, stabilisation and appropriate transfer of the newborn taking care of temperature control, timing of cord clamping, and airway management ● History taking, clinical examination of sick and healthy neonates (including Apgar, assessment of gestational age, interpretation of neonatal vital signs and neonatal reflexes) and judicious laboratory evaluation ● Conduct developmental assessment of high risk infants and recommend early intervention therapy whenever there are concerns on development or asymmetry ● Demonstrate proficiency in using and interpreting specific diagnostic tools including: ○ Blood gas analysis and glucose monitoring ○ Bilirubin levels and liver function tests. ○ Chest X-rays and abdominal ultrasound for respiratory and gastrointestinal conditions. ● Conduct point-of-care imaging (abdominal ultrasound, cardiac evaluation, cranial ultrasound for IVH). ○ Cranial ultrasound for intraventricular haemorrhage and hydrocephalus. ○ Newborn Screening and Metabolic Testing (congenital hypothyroidism, cystic fibrosis, phenylketonuria, and other metabolic disorders) ● Perform procedures essential for clinical practice including indications, contraindications, pain management, complications and post-procedure care: ○ *Chest compression* ○ *Facemask ventilation* ○ *Laryngeal mask airway (LMA) insertion/Tracheal intubation* ○ *Recognise need for surfactant* ○ *Oxygen supplementation and techniques of invasive and non-invasive ventilation (CPAP, HFNC)* ○ *Insertion of umbilical catheters* ○ *Arterial and venous access* ○ *Needle thoracocentesis* ● Deliver parent counselling on common issues like feeding, the benefits of breastfeeding, management of lactation difficulties, sleeping patterns, and response to neonatal cues ● Communicating prognosis and expected outcomes for neonates with complex conditions ● Determine the need for specialist referral

NEPHRO-UROLOGY DISEASES

A paediatrician should develop a comprehensive understanding of nephrological and urological disorders in children, ensuring competence in recognising, diagnosing, managing, and preventing conditions affecting the kidneys and urinary tract.

Knowledge	**Basic Principles of Paediatric Nephrology and Urology** ● normal renal development, function, and fluid-electrolyte homeostasis in neonates, infants, and children. ● physiological differences in renal function across different paediatric age groups. ● mechanisms of glomerular filtration, tubular function, and the role of the kidneys in acid-base balance. **Common Paediatric Nephro-Urological Disorders** ● **Congenital and Structural Anomalies of the Kidney and Urinary Tract (CAKUT):** ○ Vesicoureteric reflux (VUR) and reflux nephropathy. ○ Hydronephrosis and ureteropelvic junction obstruction ○ Posterior urethral valves and other obstructive uropathies. ○ Multicystic dysplastic kidney and renal agenesis. ● **Glomerular and Tubular Disorders:** ○ Nephrotic syndrome (steroid-sensitive, steroid-resistant, congenital). ○ Nephritic syndrome (post-infectious glomerulonephritis, IgA nephropathy, lupus nephritis). ○ Tubular disorders, including renal tubular acidosis, Bartter and Gitelman syndromes. ○ Cystinosis and other inherited metabolic kidney disorders. ○ Polycystic kidney disease ● **Urinary Tract Infections (UTIs) and Recurrent Pyelonephritis:** ○ Recognition and management of uncomplicated and complicated UTIs. ○ Investigation of recurrent UTIs and underlying anatomical abnormalities. ○ Prevention strategies and long-term follow-up. ● **Haemolytic-uraemic syndrome** ● **Hypertension and Kidney Disease:** ○ Diagnosis and management of paediatric hypertension. ○ Secondary hypertension due to renal and endocrine causes. ○ Chronic kidney disease (CKD) and progression to end-stage renal disease (ESRD). ● **Paediatric Urological Conditions:** ○ Undescended testes and hypospadias. ○ Phimosis, paraphimosis, and balanitis. ○ Dysfunctional voiding and enuresis. ● **Diagnostic tools:** ○ Urinalysis, urine microscopy, and urine culture. ○ Renal function tests (serum creatinine, estimated glomerular filtration rate [eGFR]). ○ Blood pressure monitoring and ambulatory blood pressure measurement.

	○ Renal ultrasound, micturating cystourethrogram (MCUG), and DMSA/MAG3 scans. ○ Genetic testing for inherited nephropathies. ● **Diagnostic tools** ○ Renal ultrasound for structural abnormalities and hydronephrosis. ○ MCUG in suspected vesicoureteric reflux or bladder dysfunction. ○ Nuclear medicine scans (DMSA for renal scarring, MAG3 for drainage studies).
Specific Skills Competences	● **Recognise:** ○ Haemolytic-uremic syndrome ○ Henoch-Shönlein purpura ○ Pre-renal, renal, and post-renal causes of AKI ○ Indications for dialysis in AKI. ○ Hypertensive emergencies ○ Posterior urethral valves ○ Lupus nephritis ● **Perform:** ○ Antenatal history of abnormal renal ultrasound findings. ○ Oligohydramnios or anhydramnios suggestive of renal pathology ● **Manage** ○ **Acute Kidney Injury (AKI) with (**Fluid resuscitation, electrolyte correction, and nephrotoxic drug avoidance) ○ **Severe Hypertension and Hypertensive Crises (**with antihypertensive agents, monitor for target organ damage (cardiac, renal, neurological)) ○ **Urinary Retention and Obstructive Uropathy with** bladder catheterisation in acute urinary retention. ○ **Incontinentia diurna** and **enuresis nocturna, neurog**enic bladder and dysfunctional voiding disorders. ○ **Recurrent UTIs and Voiding Dysfunction (**Antibiotic prophylaxis and bladder retraining techniques, long-term follow-up of children with vesicoureteric reflux) ○ **Nephrotic and Nephritic Syndromes** (Initiation of steroid therapy in idiopathic nephrotic syndrome, monitor for complications such as infections and thromboembolism). ○ **Urological Conditions Requiring Surgical Intervention (**posterior urethral valves, orchidopexy in undescended testes, surgical correction of hypospadias and vesicoureteric reflux). ● **Determine the need for specialist referral**

NEUROLOGY -NEURODEVELOPMENT-MENTAL HEALTH DISORDERS

A paediatrician should develop a comprehensive understanding of paediatric neurological and neuromuscular disorders, ensuring competence in recognising, diagnosing, managing, and preventing conditions affecting the central and peripheral nervous system in children, considering their age-specific needs.

Knowledge	**Paediatric Neurophysiology and Neural Development** ● Development and maturation of the nervous system from foetal life to adolescence. ● Neurophysiology, including neuronal function, neurotransmission, and neuroplasticity. ● Age-related differences in development, neurological function, including normal and abnormal motor, cognitive, and sensory development. ● Basic principles of neurogenetics and neuroimmunology. **Common neurological signs, symptoms and diseases** ● **Neonatal Neurological Conditions:** ○ Neonatal seizures and epileptic encephalopathies. ○ Neonatal encephalopathy and hypoxic-ischaemic encephalopathy (HIE). ○ Periventricular leukomalacia and intraventricular haemorrhage. ○ Perinatal stroke ● **Epilepsy:** ○ Simple and complex febrile seizures including genetic epilepsy with febrile seizures ○ Epileptic seizures including infantile spasms, focal seizures (motor and non-motor) and generalised seizures (e.g. absence, tonic-clonic, myoclonic seizures) ○ Epilepsy syndromes including Dravet syndrome, Lennox-Gastaut syndrome, West Syndrome, Childhood Absence Epilepsy, Self-limited Epilepsy with centro-temporal spikes (SeLECTS) ○ Status epilepticus ○ Non-epileptic events (e.g., syncope, movement disorders, functional neurological disorders, self-gratification). ○ Sudden unexpected death in epilepsy (SUDEP) ● **Neurodevelopmental Disorders:** ○ Early Developmental Impairment and Learning/Intellectual Disability ○ Autism spectrum disorder (ASD) and neurodiversity ○ Attention deficit hyperactivity disorder (ADHD) ○ Developmental coordination disorder (DCD) ● **Neurodisability and Movement Disorders:** ○ Cerebral palsy ○ Acquired brain injury ○ Genetic syndromes or variants causing neurodisability ○ Tics, mannerisms, stereotypies, dystonia, dyskinesia, myoclonus, tremor, and choreoathetosis.

	○ Hereditary and acquired movement disorders (e.g., Wilson's disease, paroxysmal dyskinesias) ● **Mental Health Disorders** in different age groups and developmental profiles (e.g. in young children or older children with a learning disability) ○ Anxiety Disorders (Generalised Anxiety, Social Anxiety, Separation Anxiety, Phobias) ○ Depressive Disorders ○ Obsessive-Compulsive Disorder (OCD) ○ Psychosis ● **Neurocutaneous Syndromes:** ○ Neurofibromatosis type 1 and 2 ○ Tuberous sclerosis ○ Sturge-Weber syndrome ● **Infectious and Autoimmune Neurological Disorders:** ○ Meningitis and encephalitis. ○ Acute disseminated encephalomyelitis (ADEM). ○ Autoimmune encephalopathies, including NMDA receptor encephalitis. ● **Paediatric Stroke and Cerebrovascular Disorders:** ○ Perinatal stroke and childhood arterial ischaemic stroke. ○ Moyamoya disease and sickle cell-related cerebrovascular disease. ○ Cerebral venous sinus thrombosis (CVST) ● **Neuromuscular Disorders** presenting with motor weakness, hypotonia, spasticity, fatigability and loss of motor milestones ● **Congenital and Genetic Neuromuscular Disorders:** ○ Spinal muscular atrophy (SMA) ○ Duchenne and Becker muscular dystrophies ○ Congenital myopathies and congenital muscular dystrophies ● **Peripheral Nerve Disorders:** ○ Guillain-Barré syndrome (GBS) and chronic inflammatory demyelinating polyneuropathy (CIDP). ○ Hereditary and acquired neuropathies (e.g. Hereditary motor and sensory neuropathy - Charcot-Marie-Tooth) ● **Neuromuscular Junction Disorders:** ○ Myasthenia gravis and congenital myasthenic syndromes. ○ Botulism and Lambert-Eaton myasthenic syndrome. ● **Headache and disorders of raised intracranial pressure:** ○ Features of primary headache disorders (e.g., migraine, tension-type headache). ○ Red flags for secondary headache (e.g., morning headache, vomiting, visual changes). ○ Idiopathic intracranial hypertension ● **Unexplained** neurological symptoms (e.g. non epileptic seizures, weakness, paralysis, numbness and tingling) ● **Diagnostic tools:** ○ MRI brain and spine for structural abnormalities, white matter disorders, and vascular malformations. ○ Genetic testing for inherited neurological and neuromuscular disorders.

	○ Cerebrospinal fluid analysis in suspected meningitis, encephalitis, or neuroinflammatory conditions. ○ Metabolic screening and tests ○ Electroencephalography (EEG) ○ Nerve conduction studies and electromyography (EMG) ○ Muscle biopsy in undiagnosed neuromuscular disorders.
Specific Skills Competences	**Manage** ● Status Epilepticus: ○ Emergency seizure management with benzodiazepines and escalation to second-line therapy. ● Acute Neuromuscular Weakness: ○ Early recognition of Guillain-Barré syndrome and myasthenic crises. ○ Monitoring for respiratory compromise and need for ventilation. ● Raised Intracranial Pressure: recognition of signs (e.g., Cushing's triad, papilloedema) and urgent referral. ● Epilepsy: Initiation of anti-seizure medications, ketogenic diet, or surgical referral. ● Cerebral Palsy and Movement Disorders: Multidisciplinary interventions, including physiotherapy, occupational therapy, and spasticity management. ● Neuromuscular Disease Management: Optimising motor function and managing complications such as scoliosis and respiratory insufficiency. ● Care for children with complex neurodevelopmental needs **Determine the need for specialist referral**

RESPIRATORY DISEASES

A paediatrician should develop a comprehensive understanding of paediatric respiratory disorders, ensuring competence in recognising, diagnosing, managing, and preventing conditions affecting the respiratory system in children, considering their age-specific needs.

Knowledge	**Basic Principles of Paediatric Respiratory Medicine** ● Understanding the embryology and development of the respiratory system. ● Physiology of respiration, including gas exchange, ventilation-perfusion relationships, and control of breathing. ● Differences in airway anatomy and lung physiology between neonates, infants, children, and adolescents. ● Understanding respiratory defence mechanisms, mucociliary clearance, and immune responses. **Common Paediatric Respiratory Disorders** ● **Neonatal and Perinatal Respiratory Disorders:** ○ Respiratory distress syndrome (RDS). ○ Transient tachypnoea of the newborn (TTN). ○ Meconium aspiration syndrome. ○ Bronchopulmonary dysplasia (BPD) and chronic lung disease of prematurity. ○ Tracheo-oesophageal fistula and oesophageal atresia ○ Congenital diaphragmatic hernia and other congenital lung malformations. ● **Acute Respiratory Infections and Conditions:** ○ Viral bronchiolitis (e.g., respiratory syncytial virus [RSV] infection). ○ Community-acquired pneumonia and empyema. ○ Croup (laryngotracheobronchitis) and epiglottitis. ○ Whooping cough (pertussis) and other bacterial respiratory infections. ○ Tuberculosis ● **Chronic Respiratory Diseases:** ○ Childhood asthma and recurrent wheezing. ○ GOR-associated lung disease and chronic pulmonary aspiration syndrome ○ Cystic fibrosis and primary ciliary dyskinesia. ○ Persistent bacterial bronchitis ○ Bronchiectasis and chronic suppurative lung disease. ● **Upper Airway Disorders and Sleep-Related Conditions:** ○ Obstructive sleep apnoea syndrome (OSAS). ○ Laryngomalacia, tracheomalacia, and airway anomalies. ○ Vocal cord dysfunction and paradoxical vocal fold movement. ● **Pulmonary Vascular, Neuromuscular and Chest wall Conditions Affecting Respiration:**

	○ Pulmonary hypertension in children. ○ Respiratory failure in neuromuscular disorders. ○ Chest wall disorders ● **Pulmonary haemorrhage** ● **Diagnostic tools** ○ Pulse oximetry and blood gas interpretation. ○ Chest X-ray, ultrasound and high-resolution computed tomography (HRCT) of the lungs. ○ Pulmonary function testing (spirometry, lung volume measurements, bronchodilator response) ○ Polysomnography ○ Sweat test and genetic testing for cystic fibrosis. ○ Bronchoscopy indications and techniques. ○ Genetic testing (e.g. PCD, CF) **Specific respiratory therapy** ● Inhalation therapy ● Oxygen, high-flow nasal cannula and non-invasive ventilation ● Airway clearance techniques, chest physiotherapy
Specific Skills Competences	**Interpret** ● Inflammatory markers, immunoglobulin levels. ● Specific IgE testing and allergen skin prick testing. ● Spirometry for asthma diagnosis and monitoring. ● Chest X-ray and HRCT in suspected chronic lung disease. **Manage** ● **Acute Respiratory Distress:** ○ Recognition of respiratory failure and need for oxygen therapy. ● **Acute Exacerbation of Asthma and Wheezing Disorders:** ○ Stepwise asthma management based on national and international guidelines. ○ Use of inhaled corticosteroids, bronchodilators, and systemic steroids. ○ Identification of triggers and strategies for long-term asthma control. ● **Pneumonia and Lower Respiratory Tract Infections:** ○ Antibiotic therapy selection based on severity and aetiology. ○ Monitoring for complications such as empyema or lung abscess. ● **Chronic Asthma and Wheezing:** ○ Exposure to tobacco smoke, air pollution, and allergens, including climate change and worsening air quality leading to increased incidence and severity of paediatric respiratory and allergic conditions (e.g. asthma exacerbations linked to heatwaves, wildfire smoke, and extended pollen seasons) ○ Personalised asthma action plans and regular lung function monitoring. ○ Stepwise treatment approach and medication adherence strategies. ● **Cystic Fibrosis and Other Chronic Lung Diseases:** ○ Airway clearance techniques, chest physiotherapy, and nutritional support.

	○ Use of mucolytics, pancreatic enzyme replacement, and targeted therapies. ● **Obstructive Sleep Apnoea and Airway Disorders:** ○ Recognition and referral for polysomnography in suspected OSAS. ○ Indications for adenotonsillectomy and CPAP therapy. **Determine the need for specialist referral**

RHEUMATIC DISEASES

A paediatrician should develop a comprehensive understanding of paediatric rheumatological disorders, ensuring competence in recognising, diagnosing, managing, and preventing conditions affecting the musculoskeletal and immune systems in children.

Knowledge	**Basic Principles of Paediatric Rheumatology** ● Development and function of the immune system in relation to autoimmune and autoinflammatory diseases ● Differences between paediatric and adult rheumatologic conditions ● Role of genetic and environmental factors in autoimmune and autoinflammatory diseases ● Principles of immunomodulatory therapy options **Common Paediatric Rheumatic Disorders** ● **Juvenile idiopathic arthritis (JIA):** ○ Current (ILAR) and prospective (PRINTO) classification of the JIA ○ Extra-articular manifestations of JIA ○ Other possible causes of childhood arthritis ● **Connective tissue diseases:** ○ Childhood-onset (juvenile) systemic lupus erythematosus (SLE), antiphospholipid syndrome, and mixed connective tissue disease ○ Juvenile dermatomyositis (JDM) ○ Systemic sclerosis in childhood (juvenile systemic sclerosis) and morphea ○ Childhood Sjögren's disease ● **Vasculitides:** ○ Kawasaki disease and the risk of coronary artery aneurysms ○ IgA vasculitis (IgAV) and nephritis (IgAVN) ○ Polyarteritis nodosa, ANCA-associated vasculitides, Takayasu's arteritis ● **Autoinflammatory diseases:** ○ Periodic fever syndromes (FMF, PFAPA, TRAPS, HIDS, PAPA, CAPS) ○ Autoinflammatory bone diseases ○ Behçet's disease ● **Other musculoskeletal and pain syndromes:** ○ Benign hypermobility syndrome ○ Chronic non-inflammatory musculoskeletal pain syndromes (e.g., fibromyalgia, complex regional pain syndrome). ○ Acute transient synovitis ● **Diagnostic tools:** ○ Inflammatory markers (C-reactive protein, erythrocyte sedimentation rate, ferritin, and fibrinogen) ○ Complete blood count ○ Enzymes (CK, LDH, aldolase, liver enzymes, etc.) ○ Protein electrophoresis ○ Autoantibodies + complement system components ○ HLA typing (e.g., HLA-B27, HLD B51, etc.). ○ Imaging: musculoskeletal ultrasound (MSUS), X-ray, MRI, CT, skeletal densitometry, skeletal scintigraphy

Specific Skills Competences	**Interpret:** ● Blood counts, liver and renal function tests in systemic diseases. ● Autoimmune markers and inflammatory profiles. ● Urinalysis for proteinuria or haematuria in suspected lupus nephritis. ● Ultrasound for early synovitis detection. ● MRI for deep joint or soft tissue inflammation. ● X-rays for chronic arthritis changes, growth disturbances **Manage** ● **Macrophage Activation Syndrome (MAS):** ○ Early recognition in systemic JIA or lupus. ○ Immediate initiation of immunosuppressive therapy. ● **Severe Vasculitis or Autoimmune Flares:** ○ High-dose corticosteroids, intravenous immunoglobulin (IVIG), or biologic therapy. ○ Prevention of end-organ damage (e.g., lupus nephritis, CNS vasculitis). ● **Idiopathic Arthritis:** ○ Non-steroidal anti-inflammatory drugs (NSAIDs), disease-modifying antirheumatic drugs (DMARDs), and biologic therapies. ○ Physiotherapy and occupational therapy for joint protection. ● **Connective Tissue and Vasculitic Disorders:** ○ Immunosuppressive therapy (e.g., mycophenolate mofetil, rituximab). ○ Cardiovascular and renal monitoring for systemic involvement. ● **Chronic Pain and Functional Disorders:** ○ Multidisciplinary pain management approach. ○ Cognitive behavioural therapy and physiotherapy. ● **Determine the need for specialist referral**

PAEDIATRIC SPECIALTY CARE

Paediatric Orthopaedics

Knowledge	• Congenital and developmental conditions (e.g., developmental dysplasia of the hip, clubfoot, limb length discrepancies). • Neuromuscular disorders affecting mobility (e.g., cerebral palsy, Duchenne muscular dystrophy). • Traumatic injuries, fractures, and their management.
Specific Skills Competences	• Assess early screening and identification of orthopaedic abnormalities. • Prescribe conservative management, including physiotherapy • Recognise surgical indications for limb deformities, scoliosis, and joint pathology. • Determine the need for specialist referral

Paediatric Ophthalmology

Knowledge	• Congenital cataracts, retinopathy of prematurity, and paediatric glaucoma. • Refractive disorders, amblyopia, and strabismus. • Ocular involvement in systemic diseases (e.g., juvenile idiopathic arthritis, neurofibromatosis).
Specific Skills Competences	• Perform visual screening in neonates, infants, and children. • Recognise red flag signs requiring urgent ophthalmology referral (e.g., leukocoria, persistent squint, sudden vision loss). • Perform post-surgical care following paediatric ophthalmic interventions. • Determine the need for specialist referral

Paediatric ENT (Ear, Nose, and Throat)

Knowledge	• Congenital airway anomalies (e.g., laryngomalacia, tracheomalacia). • Otitis media, tonsillitis, and adenoid hypertrophy. • Hearing loss and speech delay due to ENT pathology
Specific Skills Competences	• Perform Screening and early identification of ENT conditions affecting speech, hearing, and breathing. • Set indications for tonsillectomy, adenoidectomy • Perform post-surgical care for airway reconstruction, cochlear implantation, and sinus surgery. • Determine the need for specialist referral

Paediatric Gynaecology

Knowledge	• Precocious or delayed puberty and menstrual disorders. • Congenital anomalies of the female reproductive tract. • Gynaecological infections and disorders (e.g., ovarian torsion, vulvovaginitis)
Specific Skills Competences	• Recognise normal versus abnormal pubertal development. • Manage menstrual irregularities in adolescent girls. • Perform post-surgical care for congenital gynaecological anomalies. • Determine the need for specialist referral

Paediatric Dentistry

Knowledge	• Early childhood caries and dental trauma. • Orofacial anomalies (e.g., cleft lip and palate) • Dental implications of systemic diseases (e.g., amelogenesis imperfecta, osteogenesis imperfecta)
Specific Skills Competences	• Perform screening for dental health issues and promote oral hygiene • Perform pre- and post-surgical care for craniofacial anomalies. • Recognise conditions requiring referral to paediatric dental specialists

II. Organisation of training

The organisation of training in paediatrics aims to ensure a structured, competency-based approach that aligns with European Training Requirements (ETRs). This section outlines the framework for training, including minimum duration, curriculum structure, assessment methodology, and governance.

a. Schedule of Training

Minimum Duration of Training

- Training in paediatrics should consist of 5 years of full-time supervised clinical training (with an absolute minimum of 4 years).

Required Timing

The programme's overall structure must be designed using block and/or longitudinal experiences and should encompass different components with a balance of inpatient, ambulatory, community and individualised experiences. A rotation in different paediatric settings should be promoted.

Recommended minimum time allocations are:

Core Rotation	**Recommended Minimum Duration**
Inpatient General Paediatrics	6-12 months
Neonatology (incl. NICU exposure)	6 months
Acute Emergency Paediatrics/ Paediatric Intensive Care (PICU)	6 months
Outpatient / Primary Care / Community Paediatrics	6 months
Subspecialty rotations (≥5 subspecialties, as already required in the Curriculum of Training)	12-18 months
Flexible/elective (based on individual progress and EPA entrustment)	12-24 months

The first years should cover basic paediatric competences for the different paediatric populations. The final year should focus on developing autonomy in clinical decision-making, exposure to subspecialty care, and integrated child health services.

Training should be competency-based, allowing for flexibility in duration for trainees who require additional time to achieve proficiency.

b. Curriculum of Training

The curriculum must be organised to maximize trainees' educational experiences, ensuring appropriate duration and continuity of supervision. These experiences should include a balanced mix of supervised patient care responsibilities, clinical teaching, and structured educational activities.
The paediatric training curriculum should be structured, standardised, and competency driven and must include:

- Core paediatric competences, including general paediatrics, neonatology, developmental paediatrics, and paediatric emergency medicine.
- Structured clinical rotations in inpatient, outpatient, and community settings.
- Exposure to at least 5 paediatric subspecialties
- Interdisciplinary training, including child protection, adolescent health, palliative care, and integrated care models.
- Integration of evidence-based medicine, research methodology, and quality improvement projects.
- Simulation-based training for procedural skills, resuscitation, and communication skills.

Trainees must maintain **a continuous, structured e-portfolio** - whichever system is used nationally or institutionally - that consistently logs clinical encounters, workplace-based assessments, and EPA entrustment decisions in the format and detail described in this document.

c. Assessment and Evaluation

Definitions Used in the ETR

Learning Outcomes

Learning outcomes define what a trainee should be able to know, understand, and demonstrate upon the completion of their training. These outcomes are articulated in terms of:

- **KNOWLEDGE:** The theoretical and evidence-based understanding necessary to practise paediatric medicine.
- **SKILLS:** The practical and clinical abilities necessary to provide high-quality care.
- **COMPETENCES:** Observable abilities of a healthcare professional (Personal descriptor) related to a specific activity that integrates knowledge, skills, values, attitudes and behaviours.
- **ENTRUSTABLE PROFESSIONAL ACTIVITIES (EPA):** Essential tasks of a discipline (Work descriptors) that a learner can be trusted to perform without direct supervision and a clinician entering practice can perform unsupervised in a given healthcare context, once sufficient competence has been demonstrated (Powell DE, Carraccio C. Toward Competency-Based Medical Education. N ENG J MED 2018: 378,1).

Assessment

Assessment refers to the process of evaluating a trainee's competences in relation to the established learning objectives. It includes formative (continuous) and summative (final) assessments. This assessment is mapped to specific EPAs and levels of competences.

Levels of competence widely used are

1: The trainee has observed, has knowledge of, describes
2: The trainee performs, manages, demonstrates under direct supervision
3: The trainee performs, manages, demonstrates under distant supervision
4: The trainee performs, manages, demonstrates independently

Formative Assessment (Continuous Evaluation)

Workplace-based assessments

Workplace-based assessments are integrated into routine clinical activity throughout training, rather than conducted as separate or artificial exercises.
In practice:

- **Mini-CEX** is used during real patient encounters - for example, a trainee performing a focused history and examination of an acutely unwell child in the emergency department or ward, observed and scored by a supervisor in real time, followed by immediate feedback.
- **DOPS** is applied during specific procedural moments - such as lumbar puncture, venous cannulation, or neonatal resuscitation - where a supervisor directly observes and assesses technical competence against a structured checklist.
- **Case-based Discussion (CbD)** is typically conducted after clinical activity, using a case the trainee has personally managed (e.g. from a ward round or outpatient clinic), to explore clinical reasoning, decision-making, and documentation in a structured discussion with a supervisor.
- **Multisource Feedback (MSF)** is collected periodically (e.g. every 6-12 months) from a range of colleagues - nurses, allied health professionals, peers, and where appropriate patients/families - to assess professionalism, communication, and teamwork across different clinical contexts, rather than a single observed encounter.
- Self-assessment and reflective practice, encouraging trainees to track their own progress.

These tools are typically scheduled and tracked through the trainee's e-portfolio, with a minimum expected frequency per training year (e.g. X Mini-CEX, Y DOPS, Z CbD per rotation), and complemented by regular educational supervisor meetings to review progress, agree learning goals, and identify areas requiring additional support.

Summative Assessment (Final Evaluation)

- **Completion of core competences** as documented in the training portfolio.
- **Objective Structured Clinical Examinations (OSCEs)** to evaluate clinical and procedural skills.
- Written or computer-based examinations assessing **paediatric knowledge and decision-making**.
- **National or Certificated European Board Exams (CESMA) are recommended.**
- A final **structured assessment interview** to determine readiness for independent practice or subspecialty training, with this assessment related to specific EPAs (Appendix C-D) and levels of competences.

Position of the European Board Exam (CESMA)

The National or Certificated European Board Exam (CESMA) is a knowledge-based examination and serves as a tool for harmonisation of theoretical knowledge across European training programmes. It does not assess clinical competence, workplace performance, or Entrustable Professional Activities (EPAs).
Certification of a paediatric specialist remains a national responsibility, based on the trainee's portfolio, EPA entrustment decisions, workplace-based assessments, and the final structured assessment interview.

Future Perspectives

At national level, certification and final sign-off are expected to remain the responsibility of national competent authorities for the foreseeable future. At European level, the continued development of CESMA as a shared knowledge-based standard is supported, alongside future consideration of how a more comprehensive, competence-based European assessment could eventually complement national certification.

Evaluation is used to **determine whether the trainee has met the required competences** and is **eligible for progression** to advanced training.

d. Governance

Governance of paediatric training should be transparent, evidence-based, and aligned with European standards. Key elements include:

- Regulation by national medical authorities and professional paediatric bodies (e.g. UEMS Paediatric Section, CESMA).
- Alignment with European Board of Paediatrics requirements (exam, ETR).
- Quality assurance through external audits, regular accreditation visits, and regular curriculum updates.
- **Annual review of training outcomes, ensuring that training standards remain relevant and up to date.**
- Trainee representation in curriculum development and training evaluation.

Role of the Training Programme Director

Each accredited training institution must designate a Training Programme Director (TPD), who holds overall responsibility for the oversight, coordination, and quality assurance of the local training programme. The TPD's responsibilities include:

- Ensuring full delivery of the curriculum as defined in this ETR, including all core rotations and competency domains;
- Creating and maintaining a protected learning environment, ensuring an appropriate balance between clinical service and educational activity;
- Monitoring trainee workload and well-being, including duty hours and access to rest facilities;
- Overseeing the implementation of workplace-based assessments, EPA entrustment decisions, and portfolio review;
- Collaborating with trainers, faculty, and institutional leadership to align local training delivery with this ETR and with national/European quality standards;
- Acting as the primary point of contact for trainees, national competent authorities, and accrediting bodies regarding the quality and conduct of the training programme.

Training institutions must ensure that governance structures support equitable access to training, mentor supervision, and professional development opportunities.

III. Training Requirements for Trainers

Process for Recognition as Trainer

a. Requested qualification and experience

The director of the training programme should be a certified specialist with at least 10 years of practice after specialist certification. He or she should possess the proper educational, organisational and leadership qualities, especially considerable knowledge and experience in postgraduate training, and should have completed the 'Training the Trainer Courses'
Trainers play a crucial role in shaping paediatric trainees, ensuring high-quality supervision and education. Trainers should be certified specialists and collaborate with other certified co-trainers. It is recommended that trainers are at least certified specialists with a minimum of 10 years of practice.

b. Core Competences for Trainers

Special Qualifications of the trainers (if not covered by EU Directive on Professional Qualifications) should include but not be limited to the following:

Trainers should:

- know all aspects of the given specialty curriculum and the problems related to its clinical implementation.
- be familiar with principles of modern medical education with focus on assessment tools, how to support trainees in difficulty and how to give effective feedback, including career advice.
- be able to promote trainee's competences including ethical behaviours and humanistic values as well as trainee's scientific curiosity.
- further develop their own leadership and mentorship competences

All recognised trainers must complete formal pedagogical training ("Train-the-Trainer") through structured faculty development courses covering workplace-based assessment (WBA) delivery, EPA evaluation, and constructive feedback, prior to or within a defined period of taking on trainer responsibilities.

In subspecialised training areas, trainers may require **additional certification or accreditation** from relevant professional bodies.

c. Quality Management for Trainers

- Ample time should be assigned to the daily management of the training programme.
- Adequate administrative support should be provided.
- The programme director should be responsible for creating a safe and prosperous learning environment. He/she should ensure that there is an appropriate balance between service and training, He/she should meet regularly with the trainees, ascertain that necessary assessments are carried out and provide support and advice regarding professional development.
- There should be a minimum number of specialists on the staff to ensure adequate supervision of trainees. (maximum 1:2 for active clinical supervision).
- Staff policy should include support for trainers, including psychological support, and mandate continuous professional development for programme directors and trainers **through the mandatory 'Train-the-Trainer' course described above.**
- Training institutions must allocate protected educational hours within trainers' formal job plans, to prevent burnout and ensure high-quality mentoring.

- Anonymous annual trainee feedback on trainer performance is mandatory and must be incorporated into the trainer reaccreditation process (360-degree evaluation).

IV. Training Requirements for Training Institutions

Process for Recognition as a Training Centre

a. Requirements on Staff and Clinical Activities

- *Minimal number of patients cared for as inpatients and as outpatients; kind and minimal number of (surgical) procedures*
  The programme must expose trainees to a diverse range of paediatric patients (all subpopulations mentioned in the ETR)—varying in diagnosis complexity, condition types, and age groups—to ensure trainees meet all required learning objectives

- Accredited centres must maintain a minimum staffing threshold of certified paediatric specialists (e.g. at least 3 full-time equivalents) to guarantee training continuity during staff leave or illness.

- Accredited centres must have active multidisciplinary teams (MDTs), including paediatric specialised nurses, dietitians, child psychologists, and social workers.

- *Range of clinical specialties required for the training programme*
  The programme must offer a full range of paediatric services, encompassing both inpatient and outpatient general paediatrics, newborn care, adolescent medicine, developmental-behavioural paediatrics, neonatal intensive care, paediatric emergency and acute care, paediatric critical care, plus a **minimum of 5 subspecialty** services.

- *Composition and availability of faculty/ Trainee /trainer ratio*
  The programme requires a designated faculty programme director with full oversight authority and accountability.
  Effective graduate medical education depends on core leaders and faculty members having adequate dedicated time to perform critical educational, supervisory, evaluative, and mentoring functions.

  Core faculty must maintain substantial involvement in trainee education and supervision, allocating significant professional time to training and/or administrative duties, including teaching, assessment, and formative feedback provision.

  The trainee/trainer ratio should be close to 10-15/1 FTE (full time equivalent) fully dedicated to learning activities. This ratio should be rebalanced according to the percentage of time that each faculty member devotes to teaching activities.

  The training supervisor undertakes the education of only a limited number of specialist trainees, determined by the number of deliveries, the number of paediatric emergency admissions, the responsible activity, the number of paediatric hospitalisations including paediatric day hospitalisations, the number of paediatric consultations within the training department, and the number of accredited medical specialists in the training department.

- *Training programme defined, guidelines application*
- *Relevant scientific activity*
- *A system for support, counselling and career guidance of trainees*

b. Requirements on Equipment and Accommodation

Medical-technical specialty-specific equipment

- *Clinical and educational activities supporting trainees' acquisition of competences*
- *Opportunities for Research and Development*

Information technology support: those required for research, healthcare information systems, patient data, electronic or distance learning resources

- Programmes must ensure trainees can easily access relevant reference materials—both specialty-specific and general resources—in print or electronic format, along with electronic medical literature databases providing full-text capabilities
- Mandatory access to modern diagnostic tools, paediatric simulation facilities, the tele-health infrastructure, and digital library resources.

Virtual and artificial intelligence resources
Physical spaces for study to ensure a learning environment

- The programme must provide healthy, safe learning environments supporting trainee well-being, including duty-hour food access and safe, quiet, clean, private rest facilities appropriately located for resident use and patient safety.

Physical spaces and resources for research

- State-of-the-art medical equipment for paediatric diagnostics, treatment, and emergency care.
- Access to a comprehensive paediatric library and e-learning resources.
- Facilities for simulation-based training in paediatric emergencies and procedural skills.
- Opportunities for research and development (R&D) to advance paediatric knowledge and practice.

Quality Management within Training Institutions

To ensure continuous improvement in paediatric training, institutions must adhere to quality assurance standards, including:

Accreditation and reaccreditation by the national competent authority

- *A strict 5-year re-accreditation cycle for training centres, involving peer-review audits*.

Clinical Governance

- Accreditation by national and European medical education authorities.
- Implementation of clinical governance policies to ensure patient safety and high-quality care.
- Training institutions must ensure access to occupational health support for trainees, including risk assessment and appropriate accommodations for vulnerable staff (e.g. Pregnant trainees) regarding exposure to infectious diseases, ionising radiation, and other occupational hazards.

Manpower planning as part of the defined national manpower plan

- Regular workforce planning to ensure adequate trainer capacity.
- Support for faculty development programmes to enhance teaching and mentoring skills.
- Active monitoring of trainees' working hours, and provision of accessible, confidential, non-punitive feedback systems, together with mental health, well-being, and peer-support services, to protect trainees from professional burnout and ensure psychological safety.

- Safe, anonymous, confidential, and independent reporting mechanisms enabling trainees to report curriculum deviations, clinical safety concerns, or undermining behaviour, without fear of academic penalty.

Regular report on teaching and scientific activities sent to relevant authorities

- Submission of annual training reports to accreditation bodies.

External auditing

- External auditing of training quality by independent evaluators.
- *Internal auditing and quality assurance*
- *Transparency of training programmes*
- Institutions must ensure clarity in training objectives, rotations, and assessment criteria.
- A formalised structure for trainee feedback and participation in programme improvement.

Structure for coordination of training

- Continuous curriculum review and adaptation to reflect advancements in paediatrics and medical education.

Framework of approval – how are they approved

- Training centres should have a structured approval and re-accreditation process.

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APPENDIX A

Structured and detailed system-based history and symptom assessment

For suspected **allergic diseases** in children

- Nature, onset, and duration of symptoms.
- Precipitating and aggravating factors (e.g., food exposure, aeroallergens, medications, exercise).
- Family history of atopy (asthma, allergic rhinitis, eczema, food allergies).
- Environmental factors, including home and school exposures (e.g., pets, tobacco smoke, pollution).
- Seasonal variation and geographic influences on allergic conditions.
- Previous episodes of anaphylaxis and their management.

For **dermatological conditions**

- Onset, duration, and evolution of skin lesions.
- Itching, pain, burning, or other sensory symptoms.
- Aggravating and relieving factors (e.g., heat, cold, allergens, medications).
- Previous episodes and response to treatment.
- Associated systemic symptoms (e.g., fever, weight loss, joint pain).
- Family history of atopic diseases, autoimmune conditions, or genodermatoses.
- Environmental and lifestyle factors (e.g., exposure to pets, travel history, personal care products, sun exposure).
- Vaccination and medication history, including recent drug exposures.

For **endocrinological symptoms**

- Polyuria, polydipsia, weight changes, and fatigue.
- Recurrent infections and delayed wound healing (diabetes-related).
- Symptoms of hypothyroidism (fatigue, constipation, cold intolerance) and hyperthyroidism (palpitations, tremors, weight loss).
- Signs of hyperandrogenism in adolescent females.

For **gastro-enterology/hepatology and nutrition**

- Abdominal pain, vomiting, diarrhoea, constipation, weight loss, rectal bleeding, jaundice, and failure to thrive, gastro-intestinal bleeding, dysphagia, pruritus, easy bruising, oedema, lethargy, obesity and feeding difficulties.

For **haematology/oncology**

- Fatigue, pallor, failure to thrive, bleeding, fever, night sweats, unexplained weight loss, lymphadenopathy, bone pain, easy bruising, petechiae, recurrent infections,
- Prolonged bleeding, epistaxis, menorrhagia, haemarthrosis.
- Hereditary blood disorders.
- Thrombosis in the child or family members.
- Family history of childhood malignancies or cancer predisposition syndromes.

On **immunology**

- History of immunodeficiency, autoimmunity, malignant haematological diseases, or unexplained early deaths in the family.
- Consanguinity as a risk factor for inherited immunodeficiencies.
- Chronic rashes, joint pain, oral ulcers, unexplained fevers.
- Food, inhalant and drug allergies, anaphylaxis, and history of adverse reactions to vaccines.
- Adverse reactions or failure to respond to vaccines (e.g., persistent measles after vaccination, absence of seroconversion).

On **metabolic diseases**

- Developmental delay, abnormal growth, recurrent metabolic decompensation.
- Neurological symptoms (e.g., seizures, ataxia, hypotonia).

For **Nephro-urology**

- Recurrent UTIs, haematuria, proteinuria.
- Symptoms of hypertension (headache, visual disturbances, seizures).
- Nocturnal or daytime enuresis, dysuria, or voiding dysfunction.
- Family history of renal disease or hypertension.

For **Neurology**

- Perform developmental history taking and developmental assessment including
- Signs and symptoms of developmental regression.
- Parental concerns about developmental delay or regression.
- **Seizure and Paroxysmal Event History:**
  Description of events, triggers, duration, postictal state.
- **Neuromuscular and Functional Symptoms:**
  Motor weakness, hypotonia, spasticity, fatigability.
  Loss of motor milestones or progressive muscle weakness.
- **Headache and Pain Syndromes:**
  Features of primary headache disorders (e.g., migraine, tension-type headache)

For **Respiratory disorders**

- History of antenatal lung anomalies, prematurity, or neonatal ventilation.
- Feeding difficulties or choking episodes.
- Recurrent respiratory infections or hospitalisations.
- Chronic cough, wheezing, or exercise intolerance.
- Family history of atopy, asthma, or cystic fibrosis.
- Exposure to tobacco smoke, air pollution, allergens.
- Indoor environment and access to healthcare.

For **rheumatic disorders**

- Onset, duration, and pattern of joint pain, stiffness, and swelling.
- Morning stiffness or worsening after inactivity.
- History of preceding infections or trauma.
- Oral ulcers.
- Raynaud’s phenomenon, photosensitivity, or sicca symptoms.

APPENDIX B

Focused system-based physical examination

- Conduct a systematic examination to identify clinical signs associated with allergic diseases:
    - Skin examination: Identification of atopic dermatitis, urticaria, angioedema, and allergic contact dermatitis.
    - Respiratory assessment: Examination for nasal congestion, allergic shiners, mouth breathing, nasal polyps, and wheezing indicative of allergic rhinitis or asthma.
    - Gastrointestinal assessment: Recognition of symptoms such as vomiting, diarrhoea, and failure to thrive in suspected food allergy or eosinophilic oesophagitis.
- Assessment for systemic allergic reactions: Recognition of signs of anaphylaxis, including hypotension, bronchospasm, and generalised urticaria.
- Identify digital clubbing, chest deformities
- Perform a structured examination of the skin, hair, nails, and mucous membranes, including:
    - General Inspection: Assessment of lesion distribution, symmetry, and anatomical localisation.
    - Morphological Description: Ability to differentiate primary and secondary lesions (e.g., macules, papules, plaques, vesicles, pustules, nodules, ulcers).
    - Pattern Recognition: Identifying classic dermatological patterns, such as annular, linear, reticulated, or dermatomal distributions.
    - Palpation: Assessing lesion texture, temperature, and tenderness.
    - Examination Under Different Lighting Conditions: Using natural and artificial light, as well as Wood's lamp examination where appropriate.
- Calculate growth velocity and mid-parental height assessment.
- Perform abdominal palpation for hepatosplenomegaly, kidney enlargement or bladder distension.
- Identify abdominal tenderness, distension, masses, organomegaly, hepatomegaly, splenomegaly, signs of dehydration and/or malnutrition
- Perform skin assessment for pallor, petechiae, ecchymoses, hyperpigmentation, jaundice
- Perform palpation of lymph nodes (size, consistency, distribution).
- Perform joint examination for haemarthrosis in bleeding disorders.
- Recognise dysmorphic features (e.g., DiGeorge syndrome).
- Recognise signs of chronic lung disease (e.g., bronchiectasis in primary ciliary dyskinesia).
- Test developmental milestones, hypotonia, hyperreflexia.
- Recognise oedema
- Perform blood pressure measurement using an appropriate paediatric cuff
- Perform genital examination for undescended testes, hypospadias, phimosis
- Perform neurological assessment of tone (eg spasticity, floppy baby), power (eg muscle weakness), reflexes, coordination and gait in children of different chronological and developmental age
- Evaluate primitive reflexes (and their disappearance)
- Identify skin lesions indicative of neurocutaneous syndromes
- Perform a cranial nerve assessment
- Perform Motor examination: tone, power, reflexes, coordination, gait.
- Perform Sensory examination, including proprioception and vibration sense.
- Identify joint swelling, tenderness, range of motion, and function.
- Perform enthesitis assessment (heel, patellar, Achilles tendon tenderness).
- Assess muscle strength and signs of myositis.

APPENDIX C

ENTRUSTABLE PROFESSIONAL ACTIVITIES

EPA	Title & Description	Key Functions / Scope	CanMEDS Roles (Primary / Secondary)	Suggested Assessment Tools	Target Entrustment Level*	Training Stage / Milestone*
EPA 1	Provide comprehensive, family-centred care for healthy neonates	This EPA encompasses the care of healthy full-term and late preterm infants. Paediatricians are additionally expected to address typical complications and issues that commonly arise in this newborn population.	Primary: Medical Expert, Communicator Secondary: Health Advocate, Professional	• Mini-CEX • Direct Observation • Parent Feedback	To be defined — EPA Working Group	To be defined — EPA Working Group
EPA 2	Provide comprehensive, family-centred care for healthy children and adolescents	• Assess growth and development from birth through puberty, identify deviations, initiate work-up/management, refer, and communicate findings to families. • Assess nutritional status and promote optimal nutrition from birth through puberty. • Administer vaccines safely, ensure documentation/storage, and counsel families to promote uptake. • Assess age-appropriate screening and promote a healthy lifestyle. • Assess adolescent development across biological, psychological, and social domains; provide confidential, developmentally appropriate care.	Primary: Medical Expert, Health Advocate Secondary: Communicator, Scholar	• Mini-CEX • CbD • Portfolio • Audit (vaccination/growth)	To be defined — EPA Working Group	To be defined — EPA Working Group
EPA 3	Provide comprehensive, rights-based, and trauma-informed care for vulnerable infants, children, and adolescents	This EPA involves the recognition, assessment, and management of children in vulnerable situations, including those at risk of harm, experiencing safeguarding concerns, mental health disorders, adverse childhood experiences, neurodevelopmental conditions, rare diseases, migration-related health needs, and substance use.	Primary: Professional, Medical Expert Secondary: Collaborator, Communicator, Health Advocate	• CbD • MSF • Simulation • Reflective Portfolio	To be defined — EPA Working Group	To be defined — EPA Working Group

EPA 4	Provide routine assessment and management of children and adolescents with common mild-to-moderate illnesses (ambulatory, emergency, or inpatient)	• Evaluate severity and determine whether immediate emergency intervention, stabilisation, or transfer is required. • Collect critical information through history, examination, and preliminary laboratory testing. • Formulate an appropriate differential diagnosis guiding diagnostic tests. • Integrate evidence-based practice into diagnostic approaches, treatment plans, follow-up, or referral. • Prioritise patient-centred care.	Primary: Medical Expert Secondary: Communicator, Scholar	• Mini-CEX • CbD • Chart Review	To be defined – EPA Working Group	To be defined – EPA Working Group
EPA 5	Resuscitate and initiate stabilisation of the severely ill child/adolescent (immediate life-saving actions) and triage by severity	• Recognise the severely ill patient requiring resuscitation. • Prioritise and act in rapid sequence: assessment, targeted history/physical, initiation of emergency treatment. • Resuscitate a patient with acute decompensation, including invasive procedures as required (varies by setting/resources). • Communicate effectively while managing a severely ill patient. • Reflect after resuscitation and know when to seek help. • Transition care to another provider after initial stabilisation.	Primary: Medical Expert, Leader Secondary: Communicator, Professional	• Simulation • DOPS • Team-based assessment • MSF	To be defined – EPA Working Group	To be defined – EPA Working Group

EPA 6	Provide care for neonates requiring special or intensive care	• Recognise and manage complications of prematurity and neonatal illness. • Provide respiratory, nutritional, and supportive care appropriate to the neonatal setting. • Initiate and coordinate care in neonatal intensive care environments. • Communicate effectively with families in high-stress situations. • Ensure safe transition and discharge planning, including follow-up.	Primary: Medical Expert Secondary: Communicator, Collaborator, Professional	• DOPS • Mini-CEX • MSF • Simulation	To be defined – EPA Working Group	To be defined – EPA Working Group
EPA 7	Provide comprehensive care for children and young people with chronic conditions, disabilities, and medical complexity	• Manage chronic diseases and coordinate multidisciplinary care. • Support children with neurodevelopmental disorders, disabilities, and rare diseases. • Develop individualised care plans in partnership with families. • Provide longitudinal, holistic, family-centred care across physical, developmental, and psychosocial domains, emphasising quality of life. • Promote participation, quality of life, and transition to adult care. • Navigate healthcare, educational, and social systems.	Primary: Medical Expert, Collaborator Secondary: Health Advocate, Leader	• MSF • Portfolio (care plans) • CbD	To be defined – EPA Working Group	To be defined – EPA Working Group

EPA 8	Provide acute care for children and young people with severe, complex, or life-threatening conditions	• Manage complex diagnostic and therapeutic challenges in acute care. • Lead care for hospitalised patients with severe or multisystem disease. • Coordinate care with subspecialists and intensive care teams. • Make high-stakes clinical decisions under uncertainty. • Communicate prognosis and uncertainty with families. • Engage in advance care and palliative care planning and goals-of-care discussions.	Primary: Medical Expert, Collaborator Secondary: Leader, Communicator	• Simulation • Mini-CEX • CbD • MSF	To be defined – EPA Working Group	To be defined – EPA Working Group

**Target Entrustment Level and Training Stage/Milestone will be completed by the dedicated EPA Working Group, which is finalising the clinical context, key risk factors, required knowledge/skills/attitudes, entrustment levels (UEMS four - level scale: 1. obse rves → 2. direct supervision → 3. indirect supervision → 4. independent), and expected training milestone for each EPA.*