

System-Based Competencies

Students should be able to.....

Neonatology

NN1 Respiratory Distress Syndrome

List the risk factors for RDS.
Describe the pathophysiology of RDS.
Describe the presentation, complications and clinical course of RDS.
Outline the modes of action of ventilation, surfactant and antenatal steroids in RDS.

NN2 Prematurity

List the risk factors for preterm delivery.
Define premature and the numbers of infants born premature.
Outline problems associated in various systems in the very premature infant.
Describe the long term outlook for those born very premature.
Discuss the ethics of interventions in the extremely premature.

NN3 Birth Asphyxia

Define birth asphyxia, stillbirth.
List and discuss the use of obstetric monitoring to prevent birth asphyxia.
Describe the features of the birth asphyxiated infant at birth and the clinical course.
Describe and demonstrate the immediate management of the asphyxiated infant. (BLS)
Discuss interventions used in early management of such infants.
Comment on the parental response to this situation.
Describe the outcome of infants who were asphyxiated around birth.

NN4 Neonatal Jaundice

List and group the common causes of jaundice in the neonatal period.
Describe the pathophysiological mechanisms responsible for the main groups of neonatal jaundice causes.
Describe a plan for assessing, investigating and managing jaundiced infants.
Outline the role of phototherapy and exchange blood transfusion in the management of neonatal jaundice.

NN5 Intrauterine growth retardation

Define IUGR, small for gestational age, symmetrical and asymmetric IUGR.
Assess growth in a growth restricted infant.
List and group the common causes of IUGR.
Outline common problems that IUGR infants may have in the neonatal period.

NN6 Congenital heart disease

List and classify congenital heart disease conditions.
Describe the changes in circulation at birth.
Assess a blue infant, a baby in cardiac failure and a baby with an innocent murmur.
Describe the pathophysiology of ventricular septal defects and of Fallot's tetralogy.
Discuss investigation in a neonate with suspected heart disease.
Outline the use of prostin and surgery in congenital heart disease.

NN7 Talipes

Define the different forms of talipes.
Outline the management of talipes.

NN8 Hypoglycaemia

Define hypoglycaemia in the neonate.
List the causes of hypoglycaemia in the neonate.
Describe metabolic fuels that can be used in an infant.
Outline the management of an infant with a low blood sugar.

NN9 Dysmorphic syndromes

List the common conditions (genetic, chromosomal and non-chromosomal) that cause dysmorphism in infants.
Assess systematically the infant who is dysmorphic.
Describe ways of communicating with parents after the birth of a dysmorphic child.

NN10 Congenital dislocation of the hips

Describe the pathophysiology of CDH.
List the risk factors for CDH.
Describe the presentation of CDH in the neonatal period and later.
Demonstrate Ortolani's and Barlow's tests.
Outline the treatment options for CHD.

NN11 Cleft lip and palate

Outline the management plan for cleft lip or palate.

NN12 Congenital infections

List the common congenital infections.
Describe interventions to reduce the rate of congenital infections.
Describe the common features of congenital infections.

NN13 Neural tube defects

Define neural tube defects.
Describe interventions to prevent and diagnose neural tube defects antenatally.
Outline the postnatal effects and interventions for spina bifida and anencephaly.

Respiratory and Airway

R

Discuss the important differences in anatomy between adults and children that affect the lungs, chest wall and respiratory drive.
Describe the symptoms of respiratory problems in children and their pathophysiology.
Discuss the differences in presentation of children and adults with respiratory disease.

R1 Asthma

Describe the pathophysiology of asthma.
Discuss the differences in presentation of asthma at different ages.
List the risk factors for development of asthma.
Outline the management of chronic asthma in the community, with reference to the different drug delivery devices and the mode of action of different agents.
Describe the emergency management of severe asthma in children.

R2 Cystic fibrosis

Describe the pathophysiology of CF.
Discuss how CF leads to different types of presentation in children.
Outline the themes used for management of a child with CF.
Outline the clinical course and prognosis of CF.

R3 Bronchiolitis

List the agents responsible for bronchiolitis.
Describe the presentation of bronchiolitis.
Outline the management themes of infants with bronchiolitis.

R4 Pneumonia

List the common agents responsible for pneumonia in children at different ages.
Describe the presentation of pneumonia in children of different ages.
Outline management strategies for children with pneumonia.

R5 Epiglottitis

Describe the presentation of epiglottitis.
Outline the important steps in the management of suspected epiglottitis.

R6 Croup (Laryngotracheobronchitis)

List the agents responsible for croup.
Describe the presentation of mild and more severe croup.
Outline the steps in the management of croup.

R7 Otitis media

List the causative agents for OM.
Discuss the role of antibiotics in the management of childhood OM.

R8 Tonsillitis

List the causative agents for tonsillitis.
Discuss the role of antibiotics in the management of childhood tonsillitis.

Heart and Cardiovascular

C

Describe the changes that occur around the time of birth in the CVS.
Describe the symptoms of cardiovascular problems in children and their pathophysiology
Know the normal heart rate at several ages in childhood.
List risk factors and causes of congenital heart disease.

Discuss the use of palliation and curative operations in congenital heart disease.

C1 VSD

Describe the pathophysiology of a small or large VSD.
Describe the clinical features of VSD's.
Discuss the place of investigations in VSD management.
Outline the principles of management of infants and children with VSD's.

C2 Fallot's tetralogy

List the anatomical features of Fallot's.
Describe how the clinical features are produced by this anatomy.
Describe how to manage a "spell".
Outline the principles of management of infants and children with VSD's.

C3 Innocent murmurs

List the features suggesting that a murmur is **not** innocent.

C4 Cyanotic heart defects

List the congenital cyanotic heart defects.
Outline the anatomy of each.
Describe the differences between acyanotic and cyanotic heart disease presentations and respiratory problems.
Describe how to assess and treat a neonate with suspected cyanotic heart disease.
Outline a management strategy for cyanotic heart disease.

C5 Other acyanotic heart defects

List the congenital acyanotic heart defects.
Outline the anatomy of each.
Describe distinguishing features of a PDA, coarctation, ASD.
Outline a management strategy for cyanotic heart disease.

C6 Coarctation of aorta

Discuss how coarctation might present in a child.
Describe the long term effects of untreated coarctation.
Describe the management of coarctation.

C7 Kawasaki disease

Describe the presentation of KD.

Neurology and Development

N

Describe the symptoms of neurological problems in children and their pathophysiology
Describe the important structural changes in the brain during fetal life.
List the normal primitive reflexes and when they should disappear.
List the developmental systems and milestones in each.
List the routine developmental examinations and the purpose of each.
Outline the association between neurological problems and congenital syndromes.
Discuss the impact on the family of a child with a neurological problem.
Approximate the statistics of seizures, CP, down's.

N1 Febrile fits

Describe the features of a typical febrile convulsion.
Outline the theories about their causes.
Discuss management strategies in the acute and longer term settings.

N2 Cerebral palsy

List the major groups and causes of CP.
Define CP.
Discuss problems associated with CP.
Outline strategies used in the management of CP.

N3 Types of fits

List and describe the different types of convulsions seen in children.
For each, outline a plan of investigation and first line preventative treatment.

N4 Down's syndrome

List risk factors for down's syndrome.
List the features of down's in the fetus, the neonate and the older child.
List common associations with down's.
Outline a strategy for the long term management of down's.

N5 Developmental delay

Define developmental delay.
Outline how developmental delay can be investigated.
Discuss how developmental delay can be managed and the role of the MDT.

N6 Muscular dystrophy

List the clinical features and describe the presentation of MD.

N7 Children with special needs

Define what "special needs" are.
Describe how children with special needs are evaluated and investigated.
Discuss the interventions that can be used in such children.

N8 Language delay

List the common causes for language delay.
Describe the role of interventions for language delay.

N9 Migraine

Discuss the clinical features of migraine in children, and the differences with adults.
Outline lines of management of migraine in children.

N10 Squint

Describe how squints are picked up in children.
List the common causes of squint.
Outline the investigation and management of squint.

N11 Autism

Describe the features of Autism.

Urinary Tract and Nephrology

UR

Describe the symptoms of UT or renal disease in children and their pathophysiology.
Know the normal blood pressure in a neonate, child or adolescent.
Describe the purpose, process and uses of ultrasound, DMSA, DTPA, MAG3, MCUG and IVU in a child.
Approximate the statistics of UTI's and renal failure in children.
Discuss the differences in renal function in a baby and a child.

UR1 Urinary Tract Infection

List the common causes (structural and bacteriological) of UTI's.
Discuss the use of different methods of urine collection and their interpretation.
Discuss the use of the various investigations in children of different ages.
Discuss the use of prophylactic antibiotics in children with UTI's.

UR2 Nephrotic syndrome

Define nephrotic syndrome.
List the complications of nephritic syndrome.
Discuss the use of investigations in the management of nephrotic syndrome.
Outline the management of nephrotic syndrome.

UR3 Undescended testes

Describe the normal course and timing of testicular descent.
Discuss the problems of having undescended testes.
Discuss the management of UDT's.

UR4 Chronic renal failure

Define chronic renal failure.
List the common causes in the UK.
Outline a management strategy for CRF.

UR5 Acute renal failure

List the common causes of ARF in children.
Discuss strategies to prevent ARF.
Describe the clinical features of ARF in children.
Outline management strategies for children with ARF.

Gastro-Intestinal Disease

G

Describe the symptoms of gastrointestinal problems in children and their pathophysiology.
Discuss why fluid and nutritional requirements differ from those in adults.
List systemic diseases that commonly have gastro-intestinal manifestations.

G1 Coeliac disease

Describe the pathophysiology of coeliac disease.
Describe the clinical features of coeliac disease.

Outline the investigation and management of children with coeliac disease.

G2 Gastro-oesophageal reflux

Define GOR and describe its pathophysiology.
Distinguish between possetting, vomiting and GOR.
List the associations of GOR.
Discuss the investigation of GOR.
Outline the management of a child thought to have GOR.

G3 The acute abdomen in children

List the common causes of the acute abdomen in children.
Describe the clinical features of children with acute abdomen.
Outline the role of investigations and surgery in the acute abdomen.

G4 Hernias

List the common associations of hernia in children.
Discuss why hernias are managed differently in children than in adults.

G5 Intussusception

Describe the pathophysiology of intussusception.
Describe the presentation of intussusception.
Outline the use of investigations in suspected intussusception.

G6 Hirschsprung's disease

Describe the pathophysiology of Hirschsprung's disease.
Describe the presentation of Hirschsprung's disease.
Outline the management of Hirschsprung's disease.

G7 Pyloric stenosis

Describe the pathophysiology of pyloric stenosis.
Describe the presentation of pyloric stenosis including biochemical abnormalities.
Outline the management of pyloric stenosis.

G8 Inflammatory bowel diseases

Outline the epidemiology of IBD in children.
Describe the presentation of IBD in children.
Outline investigations and types of treatment for IBD.

Metabolic and Endocrine

M

Describe the symptoms of Metabolic or Endocrine problems in children and their pathophysiology.
Interpret common blood gas abnormalities in children.
Describe the important influences on growth.

ME1 Diabetes mellitus

Discuss current theories about the causes of diabetes.
Describe the presentation of diabetes in childhood.
Describe the acute management of DKA.
Outline the principles of long term diabetic management.
Discuss particular problems faced by children with diabetes.

ME2 Growth faltering (Failure to thrive)

Define growth faltering.
List the common causes of growth faltering.
Discuss the investigation of a child who is growth faltering.

ME3 Hypothyroidism

Describe the aetiologies of hypothyroidism in children.
Discuss how children are screened for hypothyroidism.
Describe the clinical features and effects of hypothyroidism.
Outline the role of investigations in the assessment of children with hypothyroidism.
Outline the management of children with hypothyroidism.

ME4 Puberty

Describe the hormonal changes in normal puberty.
Define delayed and precocious puberty.
List the common causes of delayed and precocious puberty.
Describe the assessment of a child with delayed and precocious puberty including clinical and endocrine features.
Outline the management steps in affected children.

ME5 Growth hormone deficiency

List the causes of growth hormone deficiency.
Describe the features of an affected child.
Outline the assessment and treatment.

ME6 Congenital adrenal hyperplasia

Outline the biosynthetic pathways of adrenal steroid hormones.

Describe the hormonal interactions involving the pituitary and adrenal gland.

Describe the clinical features of CAH.

Outline the investigation and management of an intersex infant.

ME7 Phenylketonuria

Describe the metabolic abnormality and its cause.

Outline the clinical effects of PKU, screening and treatment.

ME8 Inborn errors of metabolism.

Define inborn errors of metabolism.

Provide an overview of typical presentations and biochemical abnormalities.

Immunology, Allergy, Dermatology

IAD

List the UK routine immunisation schedule.

List vaccinations that need to be given to at risk groups.

Describe the differences between an infant's and an adults immune system.

Discuss the possible causes for the increase in allergies in recent years.

IAD1 Eczema

Describe the typical presentation of eczema at different ages.

Describe the interventions used in eczema management, their advantages and disadvantages.

List complications of eczema.

IAD2 Nappy rash

List the common causes of nappy rash.

Describe the differences between each and the treatment of each type.

IAD3 Substance allergies

List agents that may cause an allergy.

Describe different presentations of substance allergy.

Describe the presentation and management of acute anaphylaxis.

Outline the long term management of allergy.

IAD4 Henoch-Schonlein purpura

Describe the clinical features of HSP.

List the complications of HSP.

IAD5 Birth marks

List the common birth marks.

For each, describe the clinical course and any associated problems in other systems.

IAD6 Neonatal skin disorders

Describe milia, miliaria, erythem toxicum neonatorum, capillary and cavernous haemangiomas, their course and any treatment that is appropriate.

IAD7 Immunodeficiencies

Outline the immune defects and resulting effects in SCID, CGD, cyclical neutropaenia, pancytopenia, and viral infection.

Infections

Describe the general symptoms of infections and immunity problems in children.

Explain why neonates and children are particularly susceptible to infections.

Describe the host response to various types of infection.

List the common bacterial agents that affect children of various ages.

I1 Gastroenteritis

List the common agents causing gastroenteritis.

Describe the clinical features and effects of gastroenteritis.

Discuss the assessment and management of gastroenteritis.

I2 Meningitis

List the common agents causing meningitis at different ages.

Describe the clinical features of meningitis at each age.

Discuss the role of CT and LP in the management of meningitis.

Discuss the acute and long term management of meningitis.

I3 Meningococcal septicaemia

Describe the clinical features of meningococcal septicaemia.

Discuss the pathogenesis of septic shock and DIC in such children.

Outline the management of affected children.

Discuss the role of prophylaxis in contacts.

I4 AIDS

List the modes of transmission to a child of the HIV virus.

List risk factors for being HIV positive.

Describe the ways of making an HIV or AIDS diagnosis.

List AIDS defining illnesses.

Explore the ethical implications of HIV testing in a child.

Discuss the management of the HIV viral illness.

Describe presentations of AIDS in children.

Outline management strategies for children affected by AIDS.

I5 Staphylococcal Infections

Describe common staphylococcal infections in children.

Describe their treatment.

I6 Streptococcal Infections

Describe common streptococcal infections in children.

Describe their treatment.

I7 Chicken pox

Describe the clinical features of chicken pox.

Distinguish between varicella zoster, herpes zoster, superinfection of varicella, and eczema herpeticum.

Describe the complications of chicken pox.

Identify groups at risk of severe chicken pox.

I8 Pertussis

Describe the different manifestations of pertussis and complications that may occur.

Outline the investigation and treatment of affected children.

I9 Measles/Mumps/Rubella

List the features of each disease and their complications.

I10 Malaria

Describe the features and risk factors for malaria. Outline the investigation and management of malaria.

I11 TB

Describe common presentations of TB in children. Discuss strategies to prevent spread of TB.

I12 Hepatitis

Outline the manifestations of the different forms of hepatitis in children.

I13 EBV

Outline the manifestations of EBV and CMV in children.

Child Psychiatry and Aspects of Social medicine

CPS1 Sudden infant death

List the risk factors for SIDS.

Describe the investigation of a case of SIDS.

CPS2 Enuresis

Define primary and secondary enuresis.

List the common causes of each.

Describe the investigation of a child with secondary enuresis.

Outline the management of enuresis.

CPS3 Child abuse

Define the different types of child abuse.

Describe the different presentations of child abuse.

List the risk factors for child abuse.

Discuss the plan of investigation for suspected non-accidental injury or child sexual abuse.

Outline the legal provisions useful in child abuse.

Outline the immediate management of NAI.

Discuss the role of parental consent in the context of NAI.

CPS4 Reaction to chronic disease

Discuss an infant's, a child's and an adolescent's response to hospital admission.

Discuss an infant's, a child's and an adolescent's response to chronic illness.
Discuss the effect of a child's chronic illness on the family.

CPS5 Encopresis

Define encopresis.
List common causes of encopresis.
Outline the management of encopresis.

CPS6 School refusal

Define school refusal.
Discuss the common causes of school refusal.
Outline the management of school refusal.

CPS7 Attention deficit hyperactivity disorder

Define ADHD.
Describe the presentation of ADHD.
List the associations of these conditions.
Outline the assessment of suspected ADHD.
Outline a plan of management.

CPS8 Munchausen by Proxy

Define Munchausen by proxy.
Describe common presentations and suspicious features.

CPS9 Autism

See neurology/development

CPS10 Sleep problems

Describe common sleep disorders in children.
Outline the management of these.

CPS11 Deliberate self harm and Suicide

List the common modes of suicide and parasuicide in children.
Identify features suggesting intention to die.
Outline a management plan for children after a suicide attempt.

Musculoskeletal and Joint

MS

Discuss the differences in the adult, infant and child proportions.

Describe the differences in the composition, structure, performance and radiological appearance of the bones between these age groups.
Describe the examination findings in the first year of the skull.
List associations between systemic diseases and bony manifestations.

MS1 Septic arthritis

Describe the site and presentations of septic arthritis.
List causative organisms and the appropriate treatment.

MS2 Juvenile rheumatoid arthritis (JRA)

Outline the classification of JRA.
Describe the types of presentation of JRA.
Outline the management strategies and prognosis of the different arthritides.

MS3 Rickets

Describe the clinical and biochemical features of rickets.
Outline the investigation and treatment of rickets.

Haematology and Oncology

H1 Iron deficiency anaemia

List the risk factors for iron deficiency anaemia.
Advise a parent about dietary modifications to prevent iron deficiency.
Describe the presentation of iron deficiency in children.
Differentiate the haematological features distinguishing iron deficiency from other forms of anaemia.

H2 Sickle cell disease

Discuss the benefits and problems with screening for sickle disease in children.
Outline the different presentations of SCD in children.
Describe the long term complications of the disease and its treatment.

H3 Haemoglobinopathies in children

List the common haemoglobinopathies in children.

Describe typical presentations of these.
Outline how these may be distinguished from other causes of anaemia.

Respiratory arrest
A convulsion
Arrest at birth

H4 Idiopathic thrombocytopaenic purpura

Non-emergency situations

Describe the typical presentation of ITP.

The premature newborn

H5 Overview of the management of malignancy in children

The blue neonate

The blue child

Outline the prevalence of malignancy in children.

Outline the prognosis of ALL, Wilms's and Neuroblastoma in children.

Discuss the approach to management of tumours, including induction, tumour lysis syndrome, supportive care, psychological problems.

The jaundiced baby

The child ... with wheeze

With difficulty in breathing

With a cough

With a fever

with a rash

with a low blood pressure

with diarrhoea

with constipation

who is not thriving

who is developmentally delayed

who you suspect is being abused

who may be neglected

who has a distended or painful

abdomen

who has a squint

who has dysuria

H6 Acute lymphoblastic leukaemia

Describe the presentation of ALL.

Describe the typical blood film in ALL.

Outline initial management.

H7 Wilm's tumour

Describe the presentation of Wilm's tumour.

Investigations

H8 Neuroblastoma

Describe the presentation of neuroblastoma.

Interpret common results encountered when ordering

Chest radiographs

Full blood counts

Blood chemistry

Urine microscopy and culture

Arterial blood gases

Paediatric Pharmacology

Students should understand principles of prescribing for children and why children may metabolise and be affected by drugs differently to adults.

Students should be able to describe treatment of all "1" and emergency (*) conditions and elsewhere where indicated in the system-based competencies.

Scenario - based skills

Students should be able to describe an outline plan for making a diagnosis and treatment for the following situations in a child or infant:-

Emergencies

Cardio-pulmonary arrest

Acute asthma

Acute croup

Septicaemia

Diabetic keto-acidosis