Curtin University

CURTIN MEDICAL SCHOOL

PAEDIATRICS

SPECIFIC LEARNING OBJECTIVES

Curtin Medical School acknowledges that this document has been adapted from:

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with substantive revisions and input from the academic staff and adjunct staff of Curtin Medical School

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CLINICAL PROBLEM SOLVING IN PAEDIATRICS

A. KNOWLEDGE: None specified for this topic.

B. SKILLS: Students should demonstrate specific skills, including:

1	**Interviewing Skills**	Theme 2: Patient & Doctor: Clinical Practice
	Obtain the following information in an age-appropriate and sensitive manner from a child and the accompanying adult:	2.2
	History of Presenting Illness	
	Past History	
	i. Previous significant illnesses/hospitalisations/surgeries	
	ii. Chronic medical conditions.	
	Birth History	
	i. Gestational age, type of delivery, resuscitation, birth weight, head circumference, administration of Vitamin K and Hepatitis B vaccine	
	Antenatal History	
	ii. Maternal complications (e.g. extent of prenatal care, infections, exposure to drugs, alcohol or medications, pre-eclampsia, gestational diabetes, diagnostic procedures or investigations).	
	iii. Problems in the newborn period (e.g. prematurity and related complications, respiratory distress, jaundice, hypoglycaemia and infections).	
	Immunisations	
	Medications	
	Allergies	
	Growth	
	Development	
	Nutrition	
	Family History	
	i. Age and health of family members to include acute and chronic medical conditions.	
	ii. Drug and alcohol abuse; and	
	iii. Family pedigree, if relevant.	
	Social History	
	i. Household composition and socioeconomic status.	
	ii. School, caregiver, and peer relationships.	
	iii. HEADSS assessment; and	
	iv. Environmental and Personal Safety Assessment:	
	a. Seat belts and car seats	
	b. Bicycle helmets	
	c. Firearms in the home	
	d. Smoking	
	e. Lead exposure	
	f. Home safety for infants and toddlers	
2	**Physical Examination Skills**	Theme 2: Patient & Doctor: Clinical Practice
	Students should be able to perform the following examinations:	
	Appearance	
	i. Interpret the general appearance of the child, including dysmorphic features, neurocutaneous lesions, behaviours and interaction with the parent and examiner; and	2.3
	ii. Identify signs of acute and chronic illness.	2.4

Vital signs		
i.	Measure vital signs, demonstrating knowledge of the appropriate blood pressure cuff size and normal variation in temperature depending on the route of measurement (e.g. oral, rectal, axillary or tympanic); and	2.6
ii.	Identify variations in vital signs based on age of the patient and recognising the patterns that suggest early warning signs by use of charts such as Paediatric Acute Recognition and Response Chart (PARROT)[1] and Children's Early Warning Tool.	2.4
Growth (See section on Growth)		
i.	Accurately plot and interpret height (length up to 2 years of age), weight, and head circumference. For children born before 37 weeks gestation, plot the parameters for their corrected age until 2 years of age.	2.6 2.6 2.6 2.6
ii.	Calculate, plot, and interpret BMI and Z score; and	2.4
iii.	Use longitudinal data in assessing growth.	
Development (See section on Development)		
i.	Identify and interpret major developmental milestones of the neonate, infant, toddler, school-aged child, and adolescent.	2.6
HEENT		
i.	Observe, measure and describe size, shape and symmetry of the head, facial features, and ear position as part of the examination for dysmorphic features.	2.5 2.6
ii.	Palpate sutures and fontanels in neonates and interpret the findings.	2.6
iii.	Identify the red reflex and discuss how it is used to detect cataract, retinoblastoma (particularly in neonates) and corneal opacities and intraocular masses.	2.3 2.3 2.6
iv.	Detect the corneal light reflection and discuss how it is used to identify strabismus.	2.3
v.	Assess hydration of the mucous membranes.	
vi.	Assess dentition.	
vii.	Observe the tympanic membrane using an otoscope and an insufflator; and	2.3
viii.	Identify the structures of the oropharynx (e.g. uvula, tonsils, palate, tongue) and recognise signs of pathology.	2.6 2.3
Neck		
i.	Palpate lymph nodes and describe anatomical location, size, mobility, tenderness, consistency, discolouration and what anatomic areas they drain.	2.3 2.3
ii.	Demonstrate manoeuvres that test for nuchal rigidity; and	
iii.	Palpate the thyroid and any other neck masses.	2.3
Chest		
i.	Observe, measure and interpret the rate, pattern and effort of breathing.	2.3 2.3
ii.	Identify normal variations of respiration and signs of respiratory distress (e.g. grunting, flaring, retraction, stridor).	

[1] PARROT charts can be both found at the end of this document (**Appendix B**), and on Blackboard.

iii.	Elicit findings on percussion such as resonant (normal) and hyper-resonant or dull (abnormal) notes.	2.3 2.3
iv.	Elicit findings on auscultation such as normal breath sounds and abnormal breath sounds such as crackles, wheeze, decreased air entry and bronchial breathing.	2.3
v.	Identify transmitted upper airway sounds; and	
vi.	Observe and describe breast tissue according to developmental stage (e.g. Tanner scale) and palpate breast tissue in age-appropriate sensitive manner with permission and presence of a chaperone if required.	2.6 2.3 2.3
Cardiovascular		
i.	Identify the pulses in the upper and lower extremities through palpation.	2.3
ii.	Observe and palpate precordial activity.	
iii.	Identify cardiac rhythm, rate, and quality (e.g. intensity, pitch, and location) of the heart sounds and murmurs and variation with manoeuvres through auscultation.	2.5 2.3
iv.	Assess peripheral perfusion, using a test for capillary refill; and	
v.	Identify central versus peripheral cyanosis.	2.3
Abdomen		
i.	Inspect for distension, umbilicus	2.5
ii.	Palpation: Describe tenderness/guarding/rigidity if any; If liver is palpable, describe size in centimetres below the costal margin, edge, surface, tenderness; if spleen is palpable, describe size in centimetres below the costal margin, identify the notch; If kidneys are palpable, check if they are ballotable.	2.3
iii.	Elicit signs for presence of ascitic fluid by percussion if suspected.	2.3
iv.	Describe if any other masses including faecal matter can be palpated.	2.3
v.	Auscultate to check presence of bowel sounds.	
vi.	Determine the need for a rectal examination and demonstrate the age- appropriate technique.	2.3
Genitalia and inguinal region		
i.	Describe appearance of male and female genitalia at different pubertal stages using Tanner's charts.	
ii.	Recognise and describe ambiguity of external genitalia.	2.5/ 2.6
iii.	In males, recognise abnormalities such as cryptorchidism, undescended testes, hypospadias, phimosis, hernia, hydrocele and testicular mass; and	2.3 2.6
iv.	In females, recognise abnormalities such as signs of virilisation, imperforate hymen, labial adhesions and signs of injury.	2.6
Extremities		
i.	Examine the hips of a newborn for developmental dysplasia of the hip using the Ortolani and Barlow manoeuvres.	2.6
ii.	Observe and describe the gait of children at different ages.	
iii.	Identify age-related variations in the examination of the extremities (e.g. tibial torsion, genu valgus, flat	2.6

	feet, etc.); and	
	iv. Recognise pathology, such as joint effusions, signs of trauma, and inflammation and restricted or excessive joint mobility.	2.6
	Back	
	i. Perform and interpret a screening test for scoliosis; and	
	ii. Examine the back for midline tufts of hair, pits, sacral dimples, or masses.	
	Neurologic examination	
	i. Elicit the primitive reflexes that are present at birth and describe how they change during infancy.	
	ii. Assess the quality and symmetry of tone, strength and reflexes, using age- appropriate techniques; and	
	iii. Assess the major developmental milestones of newborns, infants, toddlers, school aged, children, and adolescents.	
	Skin	
	i. Describe and assess turgor, perfusion, colour, hypo and hyperpigmented lesions, and rashes through observation and palpation; and	
	ii. Identify jaundice, petechiae, purpura, bruising, vesicles, and urticaria.	
3	**Patient Communication Skills**	Theme 2: Patient & Doctor: Clinical Practice
a	Conduct an effective interview by adapting the interview to the visit (e.g. first visit, acute care, health supervision), or chief complaint.	2.1
b	Demonstrate effective verbal and non-verbal communications skills with children and their parents or families or carers that include:	2.1
	i. Establishment of rapport by taking into account the patient's age and development stage.	2.1
	ii. Use of communication techniques that enable development of a therapeutic alliance and being sensitive to the unique social condition and cultural background of the family.	3.2
	iii. Identification of the primary concerns of the patient and/or family; and	2.8
	iv. Avoidance of medical jargon during discussions of medical information that is understandable to patients and families.	2.9
c	Correctly identify the need for an interpreter in specific interactions with patients.	2.1
d	Effectively communicate information about the diagnosis, diagnostic plan, and treatment to the patient and family and assess the patient's and family's understanding.	2.9
e	Describe the important role of patient education in treatment of acute and chronic illness, and prevention of disease.	2.10
f	Observe and reflect on the communication of sensitive information/test results/diagnosis to parents, children and adolescents.	2.1
4	**Peer Communication Skills**	Theme 2: Patient & Doctor: Clinical Practice
a	Demonstrate effective oral and written communication with the health care team. Avoid jargon and vague terms (e.g. clear and normal chest).	2.1

b	Present a complete, well-organised verbal summary of the patient's history and physical examination findings, including an assessment and plan modifying the presentation to fit the constraints and educational goals of the situation.		2.1
c	Document the history, physical examination, assessment and plan using a format appropriate to the clinical situation (e.g. inpatient admission, progress note, office or clinic visit, acute illness, health supervision visit, and interval care visits).		2.15
d	Write admission and daily orders for a hospitalised patient in consultation with treating team.		2.15
e	Write a sample prescription (see Therapeutics section) (U) specific for a child's weight.		2.11
5	**Problem-solving Skills**	Theme 2: Patient & Doctor: Clinical Practice	
a	Generate an age-appropriate differential diagnosis and problem list based on the interview and physical examination.		2.4
b	Outline a diagnostic plan based on the differential diagnosis and justify the diagnostic tests and procedures (taking into account the test's sensitivity, specificity, and predictive value, as well as its invasiveness, risks, benefits, limitations, and costs).		2.7
c	Interpret the results of diagnostic tests or procedures, recognising the age-appropriate values for commonly used laboratory tests, such as the Complete Blood Count, urinalysis, serum electrolytes, chest X-ray etc.		2.5
d	Formulate a management plan appropriate to the working diagnosis.		2.7
e	Formulate an educational plan to inform the health care team and family of your thought process and decisions.		2.9
g	Search for relevant information using electronic (or other) databases and critically appraise the information obtained to make evidence-based decisions.	Theme 1: Scientific Foundations of Medicine	1.4

C. PROFESSIONAL BEHAVIOURS: Students should be able to:

1	Demonstrate sensitivity to confidentiality, privacy, and modesty, during the medical interview and physical examination.	Theme 4: Professional & Personal Development	4.2

HEALTH SUPERVISION

A. KNOWLEDGE: Students should be able to:

1	List the most common preventable morbidities in childhood and describe strategies for prevention.	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe the components of a health supervision visit including health promotion, disease and injury prevention, appropriate use of screening tools and immunisations.	Theme 3: Health & Illness in Society	3.5
3	Describe the rationale for childhood immunisations. (See Prevention.)	Theme 3: Health & Illness in Society	3.5
4	Describe the indications, appropriate use, interpretation, and limitations of the following screening tests: i. Neonatal screening. ii. Developmental screening. iii. Hearing and vision screening.	Theme 3: Health & Illness in Society	3.5
5	Define anticipatory guidance and describe how it changes	Theme 1: Scientific	1.2

	based on the age of the child.	Foundations of Medicine	

B. SKILLS: Students should be able to:

1	Provide age-appropriate anticipatory guidance about: i. nutrition. ii. behaviour. iii. immunisations. iv. injury prevention. v. pubertal development. vi. sexuality; and vii. substance use and abuse.	Theme 2: Patient & Doctor: Clinical Practice	2.8

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

GROWTH

A. KNOWLEDGE: Students should be able to:

1	Describe variants of normal growth in healthy children (e.g. familial macrocephaly, familial short stature) and constitutional delay in pubertal development.	Theme 1: Scientific Foundations of Medicine	1.3
2	Identify and describe abnormal growth patterns based on preferably longitudinal growth patterns (e.g. microcephaly, macrocephaly, short stature, growth abnormalities related to specific physical findings).	Theme 1: Scientific Foundations of Medicine	1.3
3	Identify failure to thrive using commonly used definitions in young children and overweight/obesity in children and adolescents using BMI/Z score.	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to:

1	Measure and assess growth including height/length, weight, and head circumference and body mass index in patient encounters using standard growth charts.	Theme 2: Patient & Doctor: Clinical Practice	2.6

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

DEVELOPMENT

A. KNOWLEDGE: Students should be able to:

1	Describe the four developmental domains of childhood as defined by the Denver Developmental assessment (e.g. gross motor, fine motor, language, and social development). Develop familiarity with other screening tools used such as the Ages and Stages Questionnaire (ASQ).	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe how deviations from the norm would suggest a diagnosis of developmental delay, and intellectual disability.	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe the initial evaluation and need to refer a patient with evidence of developmental delay or abnormality. Note: Specific assessment tools are used to diagnose	Theme 1: Scientific Foundations of Medicine	1.3

	Autism Spectrum Disorder, ADHD etc		

B. SKILLS: Students should be able to:

1	Assess psychosocial, language, physical maturation, and motor development in paediatric patients using appropriate resources (e.g. Bright Futures, the Denver Developmental Standard Test 2, and HEADSS). Key features might include the following: i. Newborn/Infant: Disappearance of primitive reflexes; changes in tone and posture; cephalocaudal progression of motor milestones during the first year; stranger anxiety. ii. Toddler/child: Separation and autonomy in two to three-year olds; sequence of language development; concept of school readiness; and iii. Adolescent: Sequence of physical maturation (e.g. Tanner scales), cognitive development, and assessment of psychosocial and emotional development (e.g. HEADSS).	Theme 2: Patient & Doctor: Clinical Practice	2.3

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

BEHAVIOUR

A. KNOWLEDGE: Students should be able to:

1	Identify normal pattern of behaviours in the developing child such as: i. newborn infants: development and evolution of social skills. ii. toddler: autonomy. iii. school age: independence; and iv. adolescence: abstract thinking.	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe the typical presentation of common behavioural problems and issues in different age groups such as: i. newborn/infants: sleep problems, colic. ii. toddler: temper tantrums, toilet training, feeding problems. iii. school age: enuresis, attention deficit, encopresis, autism; and iv. adolescence: eating disorders, risk-taking behaviour, conduct disorders.	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe the emotional disturbances or medical conditions that may manifest as alterations in school performance and peer or family relationships.	Theme 1: Scientific Foundations of Medicine	1.3
4	Distinguish between age-appropriate behaviour, inappropriate or abnormal behaviour, and those that suggest severe psychiatric or development illness in children of different ages (e.g. head banging, threatening gestures, suicidal).	Theme 1: Scientific Foundations of Medicine	1.3

5	Describe how somatic complaints may represent psychosocial problems (e.g. recurrent abdominal pain, headache, fatigue, and neurologic complaints).	Theme 1: Scientific Foundations of Medicine	1.3
6	Describe the adverse family situations (e.g. alcoholism, domestic violence, depression) which may contribute to childhood behaviour problems.	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to:

1	Identify behavioural and psychosocial problems of childhood using the medical history, interview including use of HEADSS screen in adolescents and physical examination.	Theme 2: Patient & Doctor: Clinical Practice	2.4
2	Counsel parents and children about the management of common behavioural concerns (e.g. discipline, toilet training, and eating disorders).	Theme 2: Patient & Doctor: Clinical Practice	2.9

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

NUTRITION

A. KNOWLEDGE: Students should be able to:

1	Describe the advantages of breastfeeding and describe common difficulties experienced by breastfeeding mothers.	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe the signs and symptoms of common nutritional deficiencies in infants and children (e.g. protein, energy, iron, vitamins, micronutrients, fluoride, and how to prevent them.	Theme 1: Scientific Foundations of Medicine	1.3
3	Identify children with specific or special nutritional needs (e.g. patients with chronic illnesses, prematurity, abnormal growth patterns, failure to thrive, obesity, or when family risk factors suggest the possibility that nutritional modification will be needed).	Theme 1: Scientific Foundations of Medicine	1.3
4	Describe nutritional factors that contribute to the development of childhood obesity and to failure to thrive.	Theme 1: Scientific Foundations of Medicine	1.3
5	Discuss risk factors for the development of cardiac disease and diabetes with families.	Theme 1: Scientific Foundations of Medicine	1.3
6	Describe the endocrine, cardiovascular, and orthopaedic consequences of childhood obesity.	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to demonstrate specific skills, including:

1	Obtain a dietary history in children of different ages that includes the following: i. Infants: frequency of breast feeds; volume, type and frequency of formula feeds, solid foods, and dietary supplements (vitamins, iron, fluoride); ii. Toddler/school age child: amount of milk, juice, soda, fast foods, and meal patterns; and iii. Adolescents: meal patterns, nutritional supplements, milk, juice, soda, alcohol, snacking, and fad diets.	Theme 2: Patient & Doctor: Clinical Practice	2.2

2	Determine the caloric adequacy of an infant's diet.	Theme 2: Patient & Doctor: Clinical Practice	2.6
3	Provide nutritional advice to families regarding the following: i. Breastfeeding vs. formula feeding. ii. Addition of solids to an infant's diet. iii. Introduction of cow's milk to an infant's diet. iv. Healthy food choices for children and adolescents; and v. Importance of exercise and avoidance of excessive screen time to prevent obesity.	Theme 2: Patient & Doctor: Clinical Practice	2.9

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

PREVENTION

A. KNOWLEDGE: Students should be able to define, describe, and discuss:

1	Describe how risk of illness and injury change during growth and development and give examples of age-and development-related illnesses and injuries.	Theme 1: Scientific Foundations of Medicine	1.3
2	List the immunisations currently recommended from birth through adolescence and identify patients whose immunisations are delayed.	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe the rationale and contraindications of immunisations.	Theme 1: Scientific Foundations of Medicine	1.3
4	Explain how screening for family/domestic violence may serve as an important preventive health practice.	Theme 1: Scientific Foundations of Medicine	1.3
5	Describe the key components of a pre-participation sports physical.	Theme 1: Scientific Foundations of Medicine	1.3
6	Describe infection control precautions that help limit the spread of infectious diseases in patients and health care providers (e.g. handwashing, gloves, masks, and situation specific personal protective equipment such as in patients confirmed to have tuberculosis or COVID-19).	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to demonstrate specific skills, including:

1	Provide age-appropriate anticipatory guidance for the following: i. Motor vehicle safety. ii. Infant sleeping position. iii. Falls. iv. Burns. v. Poisoning. vi. Fire safety. vii. Choking. viii. Water safety. ix. Bike safety. x. Sexually transmitted diseases; and xi. Firearms and weapons.	Theme 2: Patient & Doctor: Clinical Practice	2.9

C. PROFESSIONAL BEHAVIOURS: None specified for this topic

ISSUES UNIQUE TO ADOLESCENCE

A. KNOWLEDGE: Students should be able to:

1	Describe the unique features of the physician-patient relationship during adolescence including confidentiality and consent.	Theme 4: Professional & Personal Development	4.6
2	Identify and describe the sequence of the physical changes of puberty (e.g. Tanner scale) from physical examination if appropriate and use of cartoons.	Theme 1: Scientific Foundations of Medicine	1.3
3	List the components of health supervision for an adolescent, such as personal habits, pubertal development, immunizations, acne, scoliosis, sports participation, and indications for pelvic examination.	Theme 1: Scientific Foundations of Medicine	1.3
4	Describe the common risk-taking behaviours of adolescents, such as alcohol and other drug use, sexual activity and violence.	Theme 1: Scientific Foundations of Medicine	1.3
5	Describe the contributions of unintentional injuries, homicide, suicide and HIV/AIDS to the morbidity and mortality of adolescents.	Theme 1: Scientific Foundations of Medicine	1.3
6	Describe the features of common mental health problems in adolescence, including school failure, attention deficit, body image, eating disorders, depression and suicide.	Theme 1: Scientific Foundations of Medicine	1.3
7	Describe an approach to counselling an adolescent regarding sexual activity, substance abuse, and personal safety.	Theme 1: Scientific Foundations of Medicine	1.3
8	Describe the unique difficulties encountered by adolescents with chronic diseases, including adherence and issues of autonomy vs. dependence.	Theme 1: Scientific Foundations of Medicine	1.3
9	Discuss the characteristics of early, mid and late adolescence in the terms of cognitive and psychosocial development.	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to demonstrate specific skills, including:

1	Interview an adolescent patient, using the HEADSS (or eHEEADSS) method, to ask sensitive questions about lifestyle choices that affect health and safety (e.g. sexuality, drug, tobacco and alcohol use) and give appropriate counselling.	Theme 2: Patient & Doctor: Clinical Practice	2.1
2	Conduct a physical examination of an adolescent that demonstrates respect for privacy and modesty, employing a chaperone when appropriate.	Theme 2: Patient & Doctor: Clinical Practice	2.3
3	Conduct a pre-participation sports examination and demonstrate the key components of that examination necessary to clear an individual for participation in strenuous exercise (e.g. special senses, cardiac, pulmonary, neurological, and Musculo-skeletal).	Theme 2: Patient & Doctor: Clinical Practice	2.3
4	Conduct a health supervision visit for a healthy adolescent, incorporating a psychosocial interview, developmental assessment and appropriate screening and preventive measures.	Theme 2: Patient & Doctor: Clinical Practice	2.3

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

ISSUES UNIQUE TO THE NEWBORN

A. KNOWLEDGE: Students should be able to:

1	Describe the transition from the intrauterine to the extrauterine environment, including temperature regulation, cardiovascular/respiratory adjustment, glucose regulation, and initiation of feeding.	Theme 1: Scientific Foundations of Medicine	1.3
2	List the information from the history of pregnancy, labour, and delivery obtained from the parents or medical record that has implications for the health of the newborn.	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe how gestational age can be assessed with an instrument such as the Ballard scale and identify key indicators of gestational maturity.	Theme 1: Scientific Foundations of Medicine	1.3
4	Describe the challenges for parents adjusting to a new infant in the home.	Theme 1: Scientific Foundations of Medicine	1.3
5	List the differential diagnosis and complications for the following common problems that are seen in the newborn: i. jaundice. ii. respiratory distress. iii. poor feeding. iv. large and small for gestation infants. v. congenital infection. vi. "state" abnormalities which includes tremulousness, irritability, lethargy from causes such as drug withdrawal, hypoglycaemia, sepsis; and vii. prematurity.	Theme 1: Scientific Foundations of Medicine	1.3
6	Describe how gestational age affects risks of morbidity or mortality in the newborn period (e.g. lung disease, hypothermia, and glucose homeostasis).	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to:

1	Perform a complete physical examination of the newborn infant.	Theme 2: Patient & Doctor: Clinical Practice	2.3
2	Give parents of a newborn anticipatory guidance for the following issues: i. the benefits of breast-feeding vs. formula for the newborn and mother. ii. normal bowel and urinary elimination patterns. iii. normal neonatal sleep patterns. iv. newborn screening tests to include Guthrie card screen (for cystic fibrosis, hypothyroidism, galactosemia, phenylketonuria, other metabolic and occasionally for infections) and hearing test. v. appropriate car seat use. vi. prevention of Sudden Infant Death Syndrome ("back to sleep"). vii. immunisations (e.g. HBV). viii. medications (e.g. eye prophylaxis and vitamin K); and ix. the issues related to circumcision.	Theme 2: Patient & Doctor: Clinical Practice	2.9

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

MEDICAL GENETICS AND DYSMORPHOLOGY

A. KNOWLEDGE: Students should be able to:

1	Describe the genetic basis and clinical manifestations of the following syndromes, malformations, and associations: i. Common chromosomal abnormalities, (e.g. Trisomy 21, Turner syndrome, Klinefelter syndrome). ii. Syndromes due to teratogens (e.g. foetal alcohol syndrome). iii. Other common genetic disorders (e.g. cystic fibrosis, sickle cell disease, haemophilia); and iv. Single malformations with multifactorial aetiology (e.g. spina bifida, congenital heart disease, cleft lip and palate).	Theme 1: Scientific Foundations of Medicine	1.3
2	List common medical and metabolic disorders (e.g. hearing loss, hypothyroidism, PKU, hemoglobinopathies) detected through newborn screening programs and other specific tests.	Theme 1: Scientific Foundations of Medicine	1.3
3	Discuss the effects of maternal health and potentially teratogenic agents on the foetus and child, including maternal diabetes and age, alcohol use, illicit drug use, and prescribed medications (e.g. phenytoin, valproate, and retinoic acid).	Theme 1: Scientific Foundations of Medicine	1.3
4	List common prenatal diagnostic assessments (e.g. maternal serum screening, chorion villous biopsy, amniocentesis, and ultrasonography) and understand their use.	Theme 1: Scientific Foundations of Medicine	1.3
5	Describe the use of chromosome studies in the diagnosis of genetic disorders.	Theme 1: Scientific Foundations of Medicine	1.3
6	Discuss the role of genetics in common multifactorial conditions (e.g. coeliac disease, inflammatory bowel disease, pyloric stenosis, congenital heart disease, cleft lip, diabetes and cancer).	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to:

1	Take family history to construct a pedigree (e.g. for the evaluation of a possible genetic disorder).	Theme 2: Patient & Doctor: Clinical Practice	2.4

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

COMMON ACUTE PAEDIATRIC ILLNESSES

A. KNOWLEDGE: Students should be able to:

1	List the age-appropriate differential diagnosis for paediatric patients presenting with each of the following symptoms. (See **Appendix A** for differential diagnoses.): i. Abdominal pain.	Theme 1: Scientific Foundations of Medicine	1.3

	ii. Cough and/or wheeze. iii. Diarrhoea. iv. Fever and rash. v. Fever without a source. vi. Headache. vii. Lethargy or irritability. viii. Limp or extremity pain. ix. Otalgia. x. Rash. xi. Rhinorrhoea. xii. Seizures. xiii. Sore throat; and xiv. Vomiting.		
2	List the age-appropriate differential diagnosis for paediatric patients presenting with each of the following physical findings. (See **Appendix A** for differential diagnoses.) i. Abdominal mass. ii. Bruising. iii. Heart murmur. iv. Hepatomegaly. v. Lymphadenopathy. vi. Splenomegaly. vii. Petechiae and/or purpura. viii. Red or wandering eye; and ix. White pupillary reflex.	Theme 1: Scientific Foundations of Medicine	1.3
3	List the age-appropriate differential diagnosis for paediatric patients presenting with each of the following laboratory findings. (See **Appendix A** for differential diagnoses.) i. Anaemia. ii. Haematuria. iii. Proteinuria; and iv. Positive Mantoux skin test (PPD) (especially Aboriginal and Torres Strait Islander peoples and refugees).	Theme 1: Scientific Foundations of Medicine	1.3
4	Describe the epidemiology, clinical, laboratory, and radiographic findings of each of the paediatric conditions listed for each presenting complaint (**Appendix A**).	Theme 1: Scientific Foundations of Medicine	1.3
5	Explain with specific examples how the physical manifestations of disease and the evaluation and management may vary with the age of the patient.	Theme 1: Scientific Foundations of Medicine	1.3
6	Discuss the characteristics of the patient and the illness that must be considered when making the decision to manage the patient in the hospital or in the outpatient setting.	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to:

1	Perform an age-appropriate history and physical examination pertinent to the presenting complaint of the child (see also Clinical Skills).	Theme 2: Patient & Doctor: Clinical Practice	2.2/ 2.3
2	Generate an age-appropriate differential diagnosis and initial diagnostic and therapeutic plan for each of the following symptoms, physical examination findings, or laboratory findings (see also Clinical Reasoning).	Theme 2: Patient & Doctor: Clinical Practice	2.4/ 2.7

Symptoms

i. Abdominal pain.
ii. Cough and/or wheeze.
iii. Diarrhoea.
iv. Fever and rash.
v. Fever without a source.
vi. Headache.
vii. Lethargy or irritability.
viii. Limp or extremity pain.
ix. Otalgia.
x. Rash.
xi. Rhinorrhoea.
xii. Seizures.
xiii. Sore throat; and
xiv. Vomiting.

Physical examination findings

i. Abdominal mass.
ii. Bruising.
iii. Heart murmur.
iv. Hepatomegaly.
v. Lymphadenopathy.
vi. Splenomegaly.
vii. Petechiae and/or purpura.
viii. Red or wandering eye; and
ix. White pupillary reflex.

Laboratory tests

i. Anaemia.
ii. Haematuria.
iii. Proteinuria; and
iv. Positive Mantoux skin test (PPD).

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

COMMON CHRONIC ILLNESSES AND DISABILITIES

A. KNOWLEDGE: Students should be able to:

1	Describe the clinical features of chronic medical conditions seen in children such as: i. Asthma. ii. Atopic dermatitis. iii. Cerebral palsy. iv. Cystic fibrosis. v. Diabetes mellitus. vi. Epilepsy. vii. Malignancy (e.g. acute lymphocytic leukaemia and Wilms tumour). viii. Obesity. ix. Seasonal allergies. x. Sickle cell disease. xi. HIV/AIDS; and xii. Sensory impairment.	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe how chronic illness can influence a child's growth and development, educational achievement, and psychosocial functioning.	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe the impact that chronic illness has on the family's emotional, economic and psychosocial functioning.	Theme 1: Scientific Foundations of Medicine	1.3

4	Describe the impact of a patient's culture on the understanding, reaction to, and management of a chronic illness.	Theme 3: Health & Illness in Society	3.2
5	Describe the contributions of each member of a multidisciplinary health care team in caring for children with a chronic illness.	Theme 4: Professional & Personal Development	4.8
6	Identify the key components of "breaking bad news" in relation to chronic illness.	Theme 1: Scientific Foundations of Medicine	3.1
7	Explain the management strategies for common chronic illnesses seen in children (e.g. asthma, seasonal allergies, diabetes, and atopic dermatitis).	Theme 1: Scientific Foundations of Medicine	1.2

B. SKILLS: Students should be able to:

1	Perform a medical interview and a physical examination in a child with a chronic illness that includes the: i. Effects of the chronic illness on growth and development. ii. Emotional, economic and psychosocial functioning of the patient and family; and iii. The treatments used, including "complementary and alternative therapies".	Theme 2: Patient & Doctor: Clinical Practice	2.2/ 2.3

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

THERAPEUTICS

A. KNOWLEDGE: Students should be able to:

1	Describe how to assess whether a drug is excreted in the breastmilk and safe to use by a breast-feeding mother.	Theme 1: Scientific Foundations of Medicine	1.3
2	List medications (e.g. aspirin, tetracycline, and oral retinoic acid) that are contraindicated or must be used with extreme caution in specific paediatric populations.	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe the appropriate use of the following common medications in the outpatient setting, including when it is NOT appropriate to treat with a medication: i. Analgesics / antipyretics. ii. Antibiotics. iii. Bronchodilators. iv. Corticosteroids. v. Cough and cold preparations. vi. Ophthalmic preparations. vii. Otic preparations; and viii. Vitamin / mineral supplements.	Theme 1: Scientific Foundations of Medicine	1.3
4	Select generally accepted pharmacologic therapy for common or life-threatening conditions in paediatric patients. These conditions could include: *Common conditions seen in ambulatory settings:* i. Acne. ii. Acute otitis media. iii. Allergic rhinitis. iv. Asthma. v. Atopic dermatitis. vi. Bronchiolitis.	Theme 1: Scientific Foundations of Medicine	1.3

	vii. Candida dermatitis. viii. Fever. ix. Impetigo; and x. Streptococcal pharyngitis. *Common conditions seen in hospitalised patients* i. Pneumonia. *Life threatening conditions* i. Sepsis/meningitis; and ii. Status epilepticus.		
5	Describe the ways medication errors are systemically prevented.	Theme 1: Scientific Foundations of Medicine	1.6

B. SKILLS: Student should be able to demonstrate specific skills, including:

1	Use of databases such as Australian Medicines Handbook (AMH), MIMS.	Theme 2: Patient & Doctor: Clinical Practice	
2	Calculate a drug dose for a child based on body weight.	Theme 2: Patient & Doctor: Clinical Practice	2.6
3	Write a prescription (e.g. for a common medication such as an antibiotic).	Theme 2: Patient & Doctor: Clinical Practice	2.11
4	Negotiate a therapeutic plan with the patient and family to maximise adherence with the agreed upon treatment regimens and assess the family's understanding of the plan.	Theme 2: Patient & Doctor: Clinical Practice	2.9

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

FLUID AND ELECTROLYTE MANAGEMENT

A. KNOWLEDGE: Students should be able to:

1	Describe the conditions in which fluid administration may need to be restricted (e.g. the syndrome of inappropriate ADH secretion, congestive heart failure, or renal failure) or increased (e.g. moderate to severe dehydration).	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe the physical findings in hypovolemic shock, interpretation of vital signs and the approach to restoration of circulating fluid volume (i.e., bolus fluid).	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe the causes and consequences of fluid and electrolyte disturbances leading to dehydration and other derangements (e.g. hypernatremia, hyponatremia, hyperkalaemia, hypokalaemia, and severe acidosis).	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to:

1	Obtain historical and physical finding information necessary to assess the hydration status of a child.	Theme 2: Patient & Doctor: Clinical Practice	2.2/ 2.3
2	Calculate and write orders for intravenous maintenance fluids for a child considering daily water and electrolyte requirements.	Theme 2: Patient & Doctor: Clinical Practice	2.11
3	Calculate and write orders for the fluid therapy for a child with severe dehydration caused by gastroenteritis to include "bolus" fluid to replenish circulating volume, deficit fluid, and ongoing maintenance.	Theme 2: Patient & Doctor: Clinical Practice	2.11
4	Explain to parents how to use oral rehydration therapy for mild to moderate dehydration.	Theme 2: Patient & Doctor: Clinical Practice	2.9

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

POISIONING

A. KNOWLEDGE: Students should be able to:

1	Describe the developmental vulnerability for poisoning and accidental ingestions in infants, toddlers, children, and adolescents.	Theme 1: Scientific Foundations of Medicine	1.3
2	List the ages at which prevalence of unintentional and intentional poisonings is highest, and the passive and active interventions that decrease the incidence of childhood ingestions (e.g. locks or safety caps).	Theme 1: Scientific Foundations of Medicine	1.3
3	Describe the emotions of guilt and anxiety that may be present in the parent, caregiver or child at the time of ingestion.	Theme 1: Scientific Foundations of Medicine	1.3
4	Describe the acute signs and symptoms of accidental or intentional ingestion of paracetamol, iron, alcohol, narcotics, tricyclic antidepressants, volatile hydrocarbons, and caustics.	Theme 1: Scientific Foundations of Medicine	1.3
5	Describe the immediate emergency management of children with toxic ingestions (e.g. acetaminophen, iron, hydrocarbons, and strong alkali) or exposure to gases.	Theme 1: Scientific Foundations of Medicine	1.3
6	Describe the role of the Poisons Information Centre and other information resources in the management of the patient with an accidental or intentional ingestion.	Theme 1: Scientific Foundations of Medicine	1.3
7	Describe the agents and acute signs and symptoms of intentional administration of chemical (e.g. cholinergic) or biologic agents.	Theme 1: Scientific Foundations of Medicine	1.3

B. SKILLS: Students should be able to:

1	Provide anticipatory guidance regarding home safety and appropriate techniques to prevent accidental ingestions (see also Prevention).	Theme 2: Patient & Doctor: Clinical Practice	2.9
2	Elicit a complete history when evaluating an unintentional ingestion or exposure to a toxic substance (including the substance, the route of exposure, the quantity, timing, and general preventive measures in the household).	Theme 2: Patient & Doctor: Clinical Practice	2.2
3	Elicit a complete history surrounding the intentional ingestion of a toxic substance (including the substance, route of exposure, amount, timing, antecedent events, and stressors).	Theme 2: Patient & Doctor: Clinical Practice	2.2

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

PAEDIATRIC EMERGENCIES

A. KNOWLEDGE: Students should be able to :

1	List the symptoms of and describe the initial emergency management of shock, respiratory distress, lethargy, apnoea, and status epilepticus in paediatric patients.	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe the age-appropriate differential diagnosis and the key clinical findings that would suggest a diagnosis for each of the Core emergent clinical problems in the table below.	Theme 1: Scientific Foundations of Medicine	1.3

Table 1 – Paediatric Emergencies

Emergent Clinical Problem	Diagnoses to Consider (Core paediatric level)	Diagnoses to Consider (Advanced paediatric level)
Airway Obstruction / Respiratory distress	Croup, bronchiolitis, asthma, pneumonia, foreign body aspiration, anaphylaxis.	Peritonsillar or retropharyngeal abscesses.
Altered mental status (Delirium/lethargy)	Head injury, increased ICP, substance abuse, infection (encephalitis, meningitis), diabetic ketoacidosis, hypoglycaemia, abuse, shock, hypoxemia.	
Apnoea	Acute life-threatening event (ALTE), Brief Resolved Unexplained Episode (BRUE), seizures, respiratory infections (RSV and pertussis), GERD, sepsis, meningitis	Cardiac dysrhythmias, breath holding spells, Abusive head trauma
Ataxia		Ingestion, infection, and tumour.
Gastrointestinal bleeding	Meckel's diverticulum, fissure, intussusception.	Inflammatory bowel disease, allergic colitis, peptic ulcer disease.
Injuries and accidents	Animal bites, minor head injury, pulled elbow.	Sprains and fractures, burns, near drowning, lacerations.
Proptosis		Tumour and orbital cellulitis.
Seizures	Infection (i.e. meningitis or encephalitis), status epilepticus, febrile seizures, ingestion, hypoxemia, shock, electrolyte disturbances, hypoglycaemia.	Tumour.
Shock	Sepsis, severe dehydration, diabetic ketoacidosis, anaphylaxis, congestive heart failure and ingestion.	Burns, neurogenic shock, ductal dependent heart lesions, and adrenal insufficiency.
Suicidal Ideation	Depression.	
Sepsis		
Aggressive behaviours/psychosis		
Poisoning		

B. SKILLS: Students should be able to**:**

1	Demonstrate the appropriate anticipatory guidance to prevent life-threatening conditions (e.g. infant positioning for sudden infant death syndrome (SIDS), locks to prevent poisoning, and the use of car seats and bicycle helmets) (see also Prevention).	Theme 3: Health & Illness in Society	3.5
2	Demonstrate the "ABC" assessment as a means for identifying who requires immediate medical attention and intervention.	Theme 2: Patient & Doctor: Clinical Practice	2.12

C. PROFESSIONAL BEHAVIOURS: None specified for this topic.

CHILD ABUSE

A. KNOWLEDGE: Students should be able to:

1	List characteristics of the history and physical examination that should trigger concern for possible physical, sexual, and psychological abuse and neglect (e.g. inconsistency in the history, unexplained delays in seeking care, injuries with specific patterns or distributions on the body, or injuries incompatible with the child's development).	Theme 1: Scientific Foundations of Medicine	1.3
2	Describe the medical-legal importance of a full, detailed, carefully documented history and physical examination in the evaluation of child abuse.	Theme 4: Professional & Personal Development	4.10
3	Discuss the concurrence of domestic violence and child abuse and describe markers that suggest the occurrence of family violence.	Theme 1: Scientific Foundations of Medicine	1.3
4	Describe the unique communication skills required to work with families around issues of maltreatment.	Theme 1: Scientific Foundations of Medicine	1.3
5	Summarise the responsibilities of the "mandatory reporter" to identify and report suspected child abuse. Know to whom such a report should be submitted.	Theme 4: Professional & Personal Development	4.10

B. SKILLS: None specified for this topic.

C. PROFESSIONAL BEHAVIOUR: None specified for this topic.

CHILD ADVOCACY

A. KNOWLEDGE: Students should be able to:

1	Describe barriers that prevent children from gaining access to health care, including financial, cultural and geographic barriers.	Theme 1: Scientific Foundations of Medicine	1.3
2	Identify opportunities for advocacy during a health supervision visit.	Theme 3: Health & Illness in Society	3.3
3	Describe critical components of partnering with the community members to promote child health.	Theme 3: Health & Illness in Society	3.5
4	Describe the types of problems that benefit more from a community approach rather than an individual approach.	Theme 3: Health & Illness in Society	3.5
5	Identify a specific paediatric healthcare issue and outline a potential approach to advocacy.	Theme 3: Health & Illness in Society	3.5

B. SKILLS: None specified for this topic.

C. PROFESSIONAL BEHAVIOUR: None specified for this topic.

RANGE OF PAEDIATRIC PATIENTS TO BE SEEN BY STUDENTS

All students should see a range of paediatric patients including:

- An infant, toddler, school aged, and adolescent child for a health care supervision visit.
- Patient/s with real or possible (e.g. parental concern) issues related to growth. patient/s with real or possible (e.g. parental concerns) issues related to development.
- Patient/s with an individual or parental concern over a specified behaviour or group of behaviours.
- Patient/s with self or parental concerns or questions about appropriate nutrition.
- Adolescent patient/s.
- One or more newborns and a newborn with jaundice.
- Patient/s with the following system/symptom-based complaints:
    i. Upper respiratory tract complaint.
    ii. Lower respiratory tract complaint.
    iii. Gastrointestinal tract complaint.
    iv. Skin or mucous membrane complaint.
    v. Central nervous system complaint; and
    vi. Fever without localising findings.
- Patient/s with respiratory distress (real/simulated).
- Patient/s with a chronic condition

APPENDIX A: COMMON PAEDIATRIC ILLNESS TABLE

The table lists the suggested differential diagnosis for each presenting symptom, finding, or laboratory value.

Presenting symptom, finding, or laboratory value	Differential diagnoses students are required to know
Cough and/or wheeze	Asthma
	Bronchiolitis
	Community acquired pneumonia
	Croup
	Viral upper respiratory tract infection
Fever without a focus	Bacteremia/sepsis
	Meningitis
	Occult bacteremia
	Urinary tract infection
	Viral illnesses
Sore Throat	Group A streptococcal pharyngitis
	Infectious Mononucleosis
	Postnasal drip
	Viral upper respiratory tract infection
Otalgia	Otitis media, Acute and Recurrent
	Otitis media with effusion
	Otitis externa
Rhinorrhea	Allergic rhinitis
	Sinusitis
	Viral URI
Fever and rash	Group A streptococcal infection
	Kawasaki disease
	Meningococcemia
	Viral exanthem
Abdominal pain	Appendicitis
	Constipation/encopresis
	Gastroenteritis
	Henoch Schonlein Purpura (HSP)
	Intussusception
	Pelvic inflammatory disease
	Urinary tract infection/pyelonephritis
Diarrhoea	Gastroenteritis
Vomiting	Gastroenteritis
	Gastroesophageal reflux
	Pyloric stenosis
	UTI/pyelonephritis
Rash	Atopic dermatitis
	Contact dermatitis

Presenting symptom, finding, or laboratory value	Differential diagnoses students are required to know
	Cellulitis
	Impetigo
	lice
	Monilial infections
	Scabies
	Seborrhea
	Urticaria
	Viral enanthem
	Viral exanthem
	Meningococcal infections
	Side effects of drugs
Limp or extremity pain	Developmental dysplasia of the hip
	Fracture
	Legg-Calve-Perthes disease
	Pulled elbow
	Osgood Schlatter disease
	Osteomyelitis
	Septic arthritis
	Slipped capital femoral epiphysis
	Transient synovitis
Headache	Meningitis, Tumours, low or raised intracranial pressure
	Tension headache, migraine
Seizures	Febrile and afebrile seizures
	Epilepsy
	Breath holding spells
Bruising	Trauma
Petechiae/purpura	Immune Thrombocytopenic Purpura (ITP)
	Sepsis
	Trauma
	Vasculitis
	Viral infections
Heart murmur	Innocent murmur vs. pathological
Lymphadenopathy	Bacterial adenitis
	Streptococcal pharyngitis
	Viral illnesses (general or specific such as EBV)
Splenomegaly	Malignancy (e.g. leukemia), heamatological conditions
Hepatomegaly	Hepatitis, congestive heart failure, haematological and storage conditions, chronic liver diseases
Abdominal mass	Hydronephrosis
	Malignancy
	Pregnancy
	Stool
White pupillary	Cataracts

Presenting symptom, finding, or laboratory value	Differential diagnoses students are required to know
reflex	Retinoblastoma
Red eye	Conjunctivitis
Wandering eye	Amblyopia
Anemia	Iron deficiency anemia, Vitamin B12 deficiency
	Sickle cell anemia
	Thalassemia
Hematuria	Glomerulonephritis
	Trauma
	UTI
Proteinuria	Nephrotic syndrome
	Orthostatic proteinuria
Positive Mantoux skin test	Latent tuberculosis
	Active tuberculosis

APPENDIX B: PARROT Charts

BIBLIOGRAPHY

ASQ https://agesandstages.com/asq-online/

Denver Developmental Exam https://www.ccmedical.org/forms/1428352937_171971.pdf

South M, Isaacs D, editors. Practical Paediatrics. 7th ed. Edinburgh, Scotland: Churchill Livingstone Elsevier; 2012. [ISBN 9780702042928]

Talley, N. J. and S. O'Connor (2017). Talley and O'Connor's clinical examination, Elsevier. https://catalogue.curtin.edu.au/permalink/61CUR_INST/1ti2cgm/cdi_askewsholts_vlebooks_9780729586184

Thomson K, Tey D, Marks M, editors. Paediatric Handbook. Royal Children's Hospital, Melbourne, Victoria. 8th ed. Chichester, West Sussex, England: Wiley-Blackwell; 2009. [ISBN 9781405174008]