

CURTIN MEDICAL SCHOOL

PAEDIATRICS

**SPECIFIC LEARNING
OBJECTIVES**

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

Council of Medical Student Education in Paediatrics (COMSEP) and Ambulatory Paediatrics Association (APA). COMSEP Curriculum Revision. 2005.

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

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TABLE OF CONTENTS

CLINICAL PROBLEM SOLVING IN PAEDIATRICS	1
<i>Interviewing Skills</i>	1
<i>Physical Examination Skills</i>	1
<i>Patient Communication Skills</i>	4
<i>Peer Communication Skills</i>	4
<i>Problem-solving Skills</i>	5
HEALTH SUPERVISION	5
GROWTH	6
DEVELOPMENT	6
BEHAVIOUR	7
NUTRITION	8
PREVENTION	9
ISSUES UNIQUE TO ADOLESCENCE	10
ISSUES UNIQUE TO THE NEWBORN	11
MEDICAL GENETICS AND DYSMORPHOLOGY	12
COMMON ACUTE PAEDIATRIC ILLNESSES	12
COMMON CHRONIC ILLNESSES AND DISABILITIES	14
THERAPEUTICS.....	15
FLUID AND ELECTROLYTE MANAGEMENT.....	16
POISIONING.....	17
PAEDIATRIC EMERGENCIES.....	17
CHILD ABUSE.....	19
CHILD ADVOCACY.....	19
RANGE OF PAEDIATRIC PATIENTS TO BE SEEN BY STUDENTS	20
APPENDIX A: COMMON PAEDIATRIC ILLNESS TABLE	21
APPENDIX B: PARROT CHARTS.....	24
BIBLIOGRAPHY	25

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
	<i>History of Presenting Illness</i>	
	<i>Past History</i>	
	i. Previous significant illnesses/hospitalisations/surgeries	
	ii. Chronic medical conditions.	
	<i>Birth History</i>	
	i. Gestational age, type of delivery, resuscitation, birth weight, head circumference, administration of Vitamin K and Hepatitis B vaccine	
	<i>Antenatal History</i>	
	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).	
	<i>Immunisations</i>	
	<i>Medications</i>	
	<i>Allergies</i>	
	<i>Growth</i>	
	<i>Development</i>	
	<i>Nutrition</i>	
	<i>Family History</i>	
	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.	
	<i>Social History</i>	
	i. Household composition and socioeconomic status.	
	ii. School, caregiver, and peer relationships.	
	iii. <u>HEADSS</u> 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:	
	<i>Appearance</i>	
	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

<i>Vital signs</i>		
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
<i>Growth</i> (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
ii.	Calculate, plot, and interpret BMI and Z score; and	2.6
iii.	Use longitudinal data in assessing growth.	2.4
<i>Development</i> (See section on Development)		
i.	Identify and interpret major developmental milestones of the neonate, infant, toddler, school-aged child, and adolescent.	2.6
<i>HEENT</i>		
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
ii.	Palpate sutures and fontanelles 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
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
Neck		
i.	Palpate lymph nodes and describe anatomical location, size, mobility, tenderness, consistency, discolouration and what anatomic areas they drain.	2.3
ii.	Demonstrate manoeuvres that test for nuchal rigidity; and	2.3
iii.	Palpate the thyroid and any other neck masses.	2.3
<i>Chest</i>		
i.	Observe, measure and interpret the rate, pattern and effort of breathing.	2.3
ii.	Identify normal variations of respiration and signs of respiratory distress (e.g. grunting, flaring, retraction, stridor).	2.3

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
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	2.6
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.	2.3
Cardiovascular		
i.	Identify the pulses in the upper and lower extremities through palpation.	2.3
ii.	Observe and palpate precordial activity.	2.5
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.	2.3
iv.	Assess peripheral perfusion, using a test for capillary refill; and	2.3
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
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
<i>Back</i>		
i.	Perform and interpret a screening test for scoliosis; and	
ii.	Examine the back for midline tufts of hair, pits, sacral dimples, or masses.	
<i>Neurologic examination</i>		
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.	
<i>Skin</i>		
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: <ul style="list-style-type: none"> i. Establishment of rapport by taking into account the patient's age and development stage. 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. iii. Identification of the primary concerns of the patient and/or family; and iv. Avoidance of medical jargon during discussions of medical information that is understandable to patients and families. 	2.1 3.2 2.8 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
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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: <ul style="list-style-type: none"> 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

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
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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
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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

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:	Theme 2: Patient & Doctor: Clinical Practice	2.3
	<ul style="list-style-type: none">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; andiii. Adolescent: Sequence of physical maturation (e.g. Tanner scales), cognitive development, and assessment of psychosocial and emotional development (e.g. HEADSS).		

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:	Theme 1: Scientific Foundations of Medicine	1.3
	<ul style="list-style-type: none">i. newborn infants: development and evolution of social skills.ii. toddler: autonomy.iii. school age: independence; andiv. adolescence: abstract thinking.		
2	Describe the typical presentation of common behavioural problems and issues in different age groups such as:	Theme 1: Scientific Foundations of Medicine	1.3
	<ul style="list-style-type: none">i. newborn/infants: sleep problems, colic.ii. toddler: temper tantrums, toilet training, feeding problems.iii. school age: enuresis, attention deficit, encopresis, autism; andiv. adolescence: eating disorders, risk-taking behaviour, conduct disorders.		
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: <ul style="list-style-type: none"> 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
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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:	Theme 2: Patient & Doctor: Clinical Practice	2.9
	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.		

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:	Theme 2: Patient & Doctor: Clinical Practice	2.9
	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.		

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 eHEEDSS) 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:	Theme 1: Scientific Foundations of Medicine	1.3
	<ul style="list-style-type: none"> 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). 		
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
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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.):	Theme 1: Scientific Foundations of Medicine	1.3
	<ul style="list-style-type: none"> i. Abdominal pain. 		

	<ul style="list-style-type: none"> 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. Oitalgia. x. Rash. xi. Rhinorrhoea. xii. Seizures. xiii. Sore throat; and xiv. Vomiting. 		
2	<p>List the age-appropriate differential diagnosis for paediatric patients presenting with each of the following physical findings. (See Appendix A for differential diagnoses.)</p> <ul style="list-style-type: none"> 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	<p>List the age-appropriate differential diagnosis for paediatric patients presenting with each of the following laboratory findings. (See Appendix A for differential diagnoses.)</p> <ul style="list-style-type: none"> 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	<p>Describe the epidemiology, clinical, laboratory, and radiographic findings of each of the paediatric conditions listed for each presenting complaint (Appendix A).</p>	Theme 1: Scientific Foundations of Medicine	1.3
5	<p>Explain with specific examples how the physical manifestations of disease and the evaluation and management may vary with the age of the patient.</p>	Theme 1: Scientific Foundations of Medicine	1.3
6	<p>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.</p>	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
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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: <i>Common conditions seen in ambulatory settings:</i> 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.		
	<i>Common conditions seen in hospitalised patients</i>		
i.	Pneumonia.		
	<i>Life threatening conditions</i>		
i.	Sepsis/meningitis; and		
ii.	Status epilepticus.		
5	Describe the ways medication errors are systematically 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.

POISONING

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 exanthem 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), haematological 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

Paediatric Acute Recognition and Response Observation Tool



Age less than 3 months

EMR300000

Hospital/health service:

(Affix patient identification label here)

URN:

**AGE LESS
THAN 3
MONTHS**

Family name:

Given name(s):

Address:

Date of birth:

Gender: M F I

Other charts in use

Fluid Balance Weight Neurological Neurovascular Glucose monitoring Pain and analgesia Respiratory assessment Other

General instructions

General instructions for using chart

- To obtain an Early Warning Score all observations must be recorded
- Record the observation as a dot; connect to previous dot with a straight line to represent a graph
- Any observation outside graph area or in a coloured area must be written as a number in allocated box
- Always refer to local process

A full set of observations must be completed

- At time of initial presentation/admission to area and as appropriate for the patient's clinical condition
- When a patient is experiencing, or at risk of experiencing, an episode of acute deterioration
- When the clinician or family are worried about the patient

If observation falls within coloured area

- A full set of observations must be completed
- Refer to EWS Escalation or Sepsis Recognition Escalation Pathway for action plan, unless a modification has been made: refer to local process

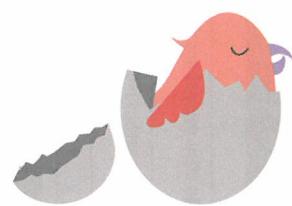
Modification to Early Warning Score (EWS)

- Acceptable parameters can be modified based on the patient's specific clinical, treatment and/or pre-existing conditions.
- All modifications must adhere to local process and be reviewed frequently by the treating consultant.
- Modifications must NEVER be used to normalise a clinically unstable patient.**

Observations	Accepted parameters and modified EWS	Date and time	Duration (hrs)	Name and signature
		/ / :		Name
Reason:		/ / :		Signature
		/ / :		Name
Reason:		/ / :		Signature
		/ / :		Name
Reason:		/ / :		Signature

Events – record event details, including interventions, and concerns from clinician or family

	Intervention/comment	Initials
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		



(Affix patient identification label here)

URN:	AGE LESS
Family name:	THAN 3
Given name(s):	MONTHS
Address:	
Date of birth:	Gender: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> I

Age less than 3 months

Paediatric Acute Recognition and Response Observation Tool

Early Warning Score Escalation Pathway	
Score	Clinical response
	<ul style="list-style-type: none"> • Remain vigilant • Complete a full set of observations • Notify nurse in charge • Optimise treatment • A plan must be documented • Reassess EWS after interventions • Consider transfer to higher care • Responders to ensure patient team are aware of deterioration
1-3	<p>Senior Nursing Review</p> <ul style="list-style-type: none"> • Increase frequency of observations • Consider Medical Review
4-5	<p>Timely Medical Review</p> <ul style="list-style-type: none"> • Request treating medical team/RMO to review within 30 mins. • Reassess observations within 30 mins. of Medical Review
6-7	<p>Urgent Treating Team Review</p> <ul style="list-style-type: none"> • Request Senior Medical or Consultant to review within 15 mins. • Consider Emergency Telehealth Service/ Critical Care referral/transfer of care • Reassess observations within 15 mins. of Urgent Medical Review
8+	<p>Rapid Response Review/MET</p> <ul style="list-style-type: none"> • Request Senior Medical/Consultant review within 5 mins. • Assess the patient and initiate appropriate clinical care • If no response within 5 mins. or if clinically concerned place a Medical Emergency Call/ Code Blue
E	<p>Immediate Medical Emergency Call/Code Blue</p> <ul style="list-style-type: none"> • Emergency response team with APLS equipment and skills • Initiate BLS and/or APLS as required
Emergency Call for any of the following:	
<ul style="list-style-type: none"> • Airway threat • Cardiac or respiratory arrest • Apnoea or cyanosis • Seizure/prolonged convulsion • Major bleeding 	
<ul style="list-style-type: none"> • Severe respiratory distress • Any observation in the purple zone • You are worried about the patient 	

Sepsis Recognition Escalation Pathway	
Use if suspected infection OR abnormal temperature ($<36^{\circ}\text{C}$ or $\geq 38^{\circ}\text{C}$)	Consider sepsis, bacterial infection and need for antibiotics. If sepsis recognition prompt not triggered, respond as per early warning score. Action as per local process.
High-risk patients – have a lower threshold for requesting medical review if:	
<ul style="list-style-type: none"> • Infants less than 3 months • Immunosuppression, chemotherapy, long-term steroids or asplenia • Invasive devices • Recent surgery, burn or wound • Unimmunised/incomplete immunisation • Rural, remote or low socioeconomic status • Re-presentation or delayed presentation 	
Sepsis recognition prompt	Clinical Response
EWS 6-7 OR any of the following	<p>Urgent Medical Review</p> <ul style="list-style-type: none"> • Mottled, CRT ≥ 3 or cold peripheries • Non-blanching rash • Drowsy or confused • Unexplained pain • Lactate 2–4 mmol/L • Family and/or clinician concern is continuing or increasing
EWS 8+ OR any of the following	<p>Rapid Response Review</p> <ul style="list-style-type: none"> • Any observation in red zone • AVPU score P • Lactate >4 mmol/L • BSL <3 mmol/L

Paediatric Acute Recognition and Response Observation Tool



Age less than 3 months

Involve the family

- Include the parent/carer in determining what is normal for their child and what may have changed
- Acknowledge parental concern – they know their child best
- Engage with the parent/carer to agree a management plan and escalation criteria
- If applicable assess observations with parent/carer to review parental concern

Patients of concern include those with

- Increasing oxygen requirement
- Changes in circulation (e.g. mottled/pallor)
- Altered mental state
- Greater than expected fluid loss
- Reduced urine output (<1mL/kg/hr)
- New, increasing or uncontrolled pain
- Blood glucose level ≤3mmol/L
- Family or clinician worried
- Changes to respiratory distress

Assessment of respiratory distress

Instructions – Select the score related to the highest criteria obtained for the patient's clinical condition

	MILD – Score 1	MODERATE – Score 2	SEVERE – Score 3
Airway	<ul style="list-style-type: none"> Stridor on exertion/crying 	<ul style="list-style-type: none"> Some inspiratory stridor at rest Partial airway obstruction 	<ul style="list-style-type: none"> Biphasic stridor at rest Imminent airway obstruction
Behaviour and feeding	<ul style="list-style-type: none"> Normal Age appropriate vocalisation 	<ul style="list-style-type: none"> Some/intermittent irritability Difficulty vocalising Difficulty feeding 	<ul style="list-style-type: none"> Increased irritability or lethargy Looks exhausted Unable to vocalise or feed Changes in conscious state such as agitated, confused or drowsy
Respiratory rate/pattern	<ul style="list-style-type: none"> Mildly increased 	<ul style="list-style-type: none"> Respiratory rate increased Abnormal pauses 	<ul style="list-style-type: none"> Respiratory rate significantly increased/absent breath sounds/silent chest Increased/reduced respiratory rate as child tires
Work of breathing	<ul style="list-style-type: none"> Mild intercostal and suprasternal recession 	<ul style="list-style-type: none"> Moderate intercostal and suprasternal recession Nasal flaring or tracheal tug 	<ul style="list-style-type: none"> Marked intercostal, suprasternal and sternal recession
Other		<ul style="list-style-type: none"> May have brief apnoeas (5-10 secs) 	<ul style="list-style-type: none"> Gasping, grunting Extreme pallor, cyanosis Increasingly frequent or prolonged apnoeas (≥20 secs)

Level of consciousness AVPU

ALERT Awake and alert

VOICE Responds to verbal stimuli

PAIN Responds to painful stimuli

UNRESPONSIVE No response to stimuli

Activity level

NORMAL	Bright-eyed look, infant seems focused and will gaze and able to be quiet when alert
SLEEPY	Eyes may open but dull and heavy lidded, dazed look, closed or fluttering eyelids, variable activity level, the infant's responses often delayed and motor activity at a minimum
IRRITABLE/JITTERY	Eyes open, considerable motor activity, brief fussy cries, intense crying which is difficult to break through with stimulation, motor activity high, may see startle movement or twitches
POOR TONE	Flaccid or hypertonic tone or uneven tone

Level of Sedation (UMSS – University of Michigan Sedation Scale) ONLY complete if sedation administered as per local policy

Response

0 = Awake and alert	Monitor
1 = Minimally sedated: may appear tired/sleepy, responds to verbal conversation and/or sound	Monitor
2 = Moderately sedated: somnolent/sleeping, easily roused with tactile stimulation or simple verbal command	Monitor
3 = Deep sedation: deep sleep, rousable only with deep or physical stimulation	Rapid Response Review
4 = Unrousable	Medical Emergency Call

Pain scales used – select (with tick) appropriate pain assessment tool

<input type="checkbox"/> FLACC	Categories	Score 0	Score 1	Score 2
Each category is scored 0-2, resulting in a total score of 0-10. Add the score of each box and total to a score of 10.	Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
	Legs	Normal position, or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
	Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
	Cry	No cry (awake or asleep)	Moans or whimpering, occasional complaint	Crying steadily, screams or sobs, frequent complaints
	Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficult to console or comfort

Communicate on the importance of timely action in recognising and responding to a patient's changing condition

NEEDS

- What type of review does this patient need?
- What is the time frame for this review?
- What do I need to do or say right now to ensure my patient is safe?

OBSERVATIONS

- What are the specific observations raising concerns about the patient?
- What do I know about my patient's condition?
- What clinical signs and symptoms are a problem?

WHY

- What are the potential consequences to the patient if there is a delay in taking action?



Establish the level of need and urgency, then plan the required communication

Paediatric Acute Recognition and Response Observation Tool

Age 3-12 months



Hospital/health service:

(Affix patient identification label here)

URN:

Family name:

Given name(s):

Address:

Date of birth:

Gender: M F I3-12
MONTHS**Other charts in use**

- Fluid Balance Weight Neurological Neurovascular Glucose monitoring Pain and analgesia Respiratory assessment Other

General instructions**General instructions for using chart**

- To obtain an Early Warning Score all observations must be recorded
- Record the observation as a dot; connect to previous dot with a straight line to represent a graph
- Any observation outside graph area or in a coloured area must be written as a number in allocated box
- Always refer to local process

A full set of observations must be completed

- At time of initial presentation/admission to area and as appropriate for the patient's clinical condition
- When a patient is experiencing, or at risk of experiencing, an episode of acute deterioration
- When the clinician or family are worried about the patient

If observation falls within coloured area

- A full set of observations must be completed
- Refer to EWS Escalation or Sepsis Recognition Escalation Pathway for action plan, unless a modification has been made: refer to local process

Modification to Early Warning Score (EWS)

- Acceptable parameters can be modified based on the patient's specific clinical, treatment and/or pre-existing conditions.
- All modifications must adhere to local process and be reviewed frequently by the treating consultant.
- Modifications must NEVER be used to normalise a clinically unstable patient.**

Observations	Accepted parameters and modified EWS	Date and time	Duration (hrs)	Name and signature
		/ / :		Name
Reason:		/ / :		Signature
		/ / :		Name
Reason:		/ / :		Signature
		/ / :		Name
Reason:				Signature

Events – record event details, including interventions, and concerns from clinician or family

	Intervention/comment	Initials
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		



(Affix patient identification label here)

URN:	3-12 MONTHS
Family name:	
Given name(s):	
Address:	
Date of birth:	Gender: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> I

3-12 MONTHS

Age 3-12 months

Paediatric Acute Recognition and Response Observation Tool



EMR300010

Early Warning Score Escalation Pathway

Score	Clinical response
	<ul style="list-style-type: none"> • Remain vigilant • Complete a full set of observations • Notify nurse in charge • Optimise treatment • A plan must be documented • Reassess EWS after interventions • Consider transfer to higher care • Responders to ensure patient team are aware of deterioration
1-3	<p>Senior Nursing Review</p> <ul style="list-style-type: none"> • Increase frequency of observations • Consider Medical Review
4-5	<p>Timely Medical Review</p> <ul style="list-style-type: none"> • Request treating medical team/RMO to review within 30 mins. • Reassess observations within 30 mins. of Medical Review
6-7	<p>Urgent Treating Team Review</p> <ul style="list-style-type: none"> • Request Senior Medical or Consultant to review within 15 mins. • Consider Emergency Telehealth Service/ Critical Care referral/transfer of care • Reassess observations within 15 mins. of Urgent Medical Review
8+	<p>Rapid Response Review/MET</p> <ul style="list-style-type: none"> • Request Senior Medical/Consultant review within 5 mins. • Assess the patient and initiate appropriate clinical care • If no response within 5 mins.. or if clinically concerned place a Medical Emergency Call/ Code Blue
E	<p>Immediate Medical Emergency Call/Code Blue</p> <ul style="list-style-type: none"> • Emergency response team with APLS equipment and skills • Initiate BLS and/or APLS as required
Emergency Call for any of the following:	
<ul style="list-style-type: none"> • Airway threat • Cardiac or respiratory arrest • Apnoea or cyanosis • Seizure/prolonged convulsion • Major bleeding 	
<ul style="list-style-type: none"> • Severe respiratory distress • Any observation in the purple zone • You are worried about the patient 	

Sepsis Recognition Escalation Pathway

Use if suspected infection **OR** abnormal temperature
($<36^{\circ}\text{C}$ or $>38^{\circ}\text{C}$)

Consider sepsis, bacterial infection and need for antibiotics. If sepsis recognition prompt not triggered, respond as per early warning score.

high-risk patients – have a lower threshold for requesting medical review if:

- Infants less than 3 months
 - Immunosuppression, chemotherapy, long-term steroids or asplenia
 - Invasive devices
 - Recent surgery, burn or wound
 - Unimmunised/incomplete immunisation
 - Rural, remote or low socioeconomic status
 - No presentation or delayed presentation

Sepsis recognition prompt	Clinical Response
<p>EWS 6-7 OR any of the following</p> <ul style="list-style-type: none"> • Mottled, CRT ≥ 3 or cold peripheries • Non-blanching rash • Drowsy or confused • Unexplained pain • Lactate 2-4 mmol/L • Family and/or clinician concern is continuing or increasing 	<p>Urgent Medical Review</p> <ul style="list-style-type: none"> • Request treating medical team or Registrar review within 15 mins. • State sepsis review required • Refer to local paediatric sepsis guideline • Reassess observations within 15 mins. Consider Emergency Telehealth Service/Critical Care referral or transfer to

EWS 8+ OR any of the following	higher level of care
<ul style="list-style-type: none"> • Any observation in red zone • AVPU score P • Lactate >4 mmol/L • BSL <3 mmol/L 	<p>Rapid Response Review</p> <ul style="list-style-type: none"> • Request senior medical or consultant review within 5 mins. • State sepsis review required • Refer to local paediatric sepsis guideline • Assess the patient and initiate appropriate clinical care • If no response within 5 mins. or if clinically concerned place a Medical Emergency Call/Code Blue

Level of sedation UMSS*

Level of sedation UMSS*

(ONLY complete if sedation administered)	
Date	
Time	
0	0
1	0
2	0
3	RR
4	E

Paediatric Acute Recognition and Response Observation Tool

Age 3-12 months



Involve the family

- Include the parent/carer in determining what is normal for their child and what may have changed
- Acknowledge parental concern – they know their child best
- Engage with the parent/carer to agree a management plan and escalation criteria
- If applicable assess observations with parent/carer to review parental concern

Patients of concern include those with

- Increasing oxygen requirement
- Changes in circulation (e.g. mottled/pallor)
- Altered mental state
- Greater than expected fluid loss
- Reduced urine output (<1mL/kg/hr)
- New, increasing or uncontrolled pain
- Blood glucose level ≤3mmol/L
- Family or clinician worried
- Changes to respiratory distress

Assessment of respiratory distress

Instructions – Select the score related to the highest criteria obtained for the patient's clinical condition

	MILD – Score 1	MODERATE – Score 2	SEVERE – Score 3
Airway	<ul style="list-style-type: none"> Stridor on exertion/crying 	<ul style="list-style-type: none"> Some inspiratory stridor at rest Partial airway obstruction 	<ul style="list-style-type: none"> Biphasic stridor at rest Imminent airway obstruction
Behaviour and feeding	<ul style="list-style-type: none"> Normal Age appropriate vocalisation 	<ul style="list-style-type: none"> Some/intermittent irritability Difficulty vocalising Difficulty feeding 	<ul style="list-style-type: none"> Increased irritability or lethargy Looks exhausted Unable to vocalise or feed Changes in conscious state such as agitated, confused or drowsy
Respiratory rate/pattern	<ul style="list-style-type: none"> Mildly increased 	<ul style="list-style-type: none"> Respiratory rate increased Abnormal pauses 	<ul style="list-style-type: none"> Respiratory rate significantly increased/absent breath sounds/silent chest Increased/reduced respiratory rate as child tires
Work of breathing	<ul style="list-style-type: none"> Mild intercostal and suprasternal recession 	<ul style="list-style-type: none"> Moderate intercostal and suprasternal recession Nasal flaring or tracheal tug 	<ul style="list-style-type: none"> Marked intercostal, suprasternal and sternal recession
Other		<ul style="list-style-type: none"> May have brief apnoeas (5-10 secs) 	<ul style="list-style-type: none"> Gasping, grunting Extreme pallor, cyanosis Increasingly frequent or prolonged apnoeas (≥20 secs)

Level of consciousness AVPU

ALERT Awake and alert

VOICE Responds to verbal stimuli

PAIN Responds to painful stimuli

UNRESPONSIVE No response to stimuli

DO NOT WRITE IN MARGIN

Level of Sedation (UMSS – University of Michigan Sedation Scale) ONLY complete if sedation administered as per local policy

Response

0 = Awake and alert	Monitor
1 = Minimally sedated: may appear tired/sleepy, responds to verbal conversation and/or sound	Monitor
2 = Moderately sedated: somnolent/sleeping, easily roused with tactile stimulation or simple verbal command	Monitor
3 = Deep sedation: deep sleep, rousable only with deep or physical stimulation	Rapid Response Review
4 = Unrousable	Medical Emergency Call

Pain scales used – select (with tick) appropriate pain assessment tool

FLACC	Categories	Score 0	Score 1	Score 2
Each category is scored 0-2, resulting in a total score of 0-10. Add the score of each box and total to a score of 10.	Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
	Legs	Normal position, or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
	Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
	Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
	Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficult to console or comfort

Communicate on the importance of timely action in recognising and responding to a patient's changing condition

NEEDS

- What type of review does this patient need?
- What is the time frame for this review?
- What do I need to do or say right now to ensure my patient is safe?

OBSERVATIONS

- What are the specific observations raising concerns about the patient?
- What do I know about my patient's condition?
- What clinical signs and symptoms are a problem?

WHY

- What are the potential consequences to the patient if there is a delay in taking action?



Establish the level of need and urgency, then plan the required communication

Paediatric Acute Recognition and Response Observation Tool

Age 1-4 years



EMR300020

Hospital/health service:

(Affix patient identification label here)

URN:

Family name:

Given name(s):

Address:

Date of birth:

Gender: M F I

1-4
YEARS

Other charts in use

- Fluid Balance Weight Neurological Neurovascular Glucose monitoring Pain and analgesia Respiratory assessment Other

General instructions

General instructions for using chart

- To obtain an Early Warning Score all observations must be recorded
- Record the observation as a dot; connect to previous dot with a straight line to represent a graph
- Any observation outside graph area or in a coloured area must be written as a number in allocated box
- Always refer to local process

A full set of observations must be completed

- At time of initial presentation/admission to area and as appropriate for the patient's clinical condition
- When a patient is experiencing, or at risk of experiencing, an episode of acute deterioration
- When the clinician or family are worried about the patient

If observation falls within coloured area

- A full set of observations must be completed
- Refer to EWS Escalation or Sepsis Recognition Escalation Pathway for action plan, unless a modification has been made: refer to local process

Modification to Early Warning Score (EWS)

- Acceptable parameters can be modified based on the patient's specific clinical, treatment and/or pre-existing conditions.
- All modifications must adhere to local process and be reviewed frequently by the treating consultant.
- Modifications must NEVER be used to normalise a clinically unstable patient.**

Observations	Accepted parameters and modified EWS	Date and time	Duration (hrs)	Name and signature
		/ / :		Name
Reason:		/ / :		Signature
		/ / :		Name
Reason:		/ / :		Signature
		/ / :		Name
Reason:		/ / :		Signature

Events – record event details, including interventions, and concerns from clinician or family

	Intervention/comment	Initials
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		



(Affix patient identification label here)

URN:	
Family name:	
Given name(s):	
Address:	
Date of birth:	Gender: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> I



Paediatric Acute Recognition and Response Observation Tool

Age 1-4 years

AIRWAY & BREATHING

Any airway threat escalate to MEDICAL EMERGENCY. If any increase in oxygen requirement, consider early escalation.

CIRCULATION

If the temperature, HR and CRT is increased, refer to Sepsis Recognition Escalation Pathway

Heart rate beats/minute	≥180	3																		3	≥180
	170	3																		3	170
	160	2																		2	160
	150	1																		1	150
	140	1																		1	140
	130	0																		0	130
	120	0																		0	120
	110	0																		0	110
	100	0																		0	100
	90	1																		1	90
Assess for 60 seconds	80	2																		2	80
	70	3																		3	70
	≤60	E																		E	≤60
Heart rate	(number)																				
Score on systolic	≥130	3																		3	≥130
	125	1																		1	125
	120	1																		1	120
	115	0																		0	115
	110	0																		0	110
	105	0																		0	105
	100	0																		0	100
	95	0																		0	95
	90	0																		0	90
	85	0																		0	85
Blood pressure (mmHg)	80	0																		0	80
	75	1																		1	75
	70	1																		1	70
Mark BP as	65	2																		2	65
	60	2																		2	60
	55	3																		3	55
	<50	3																		3	<50
Mark X for MAP	E																			E	
Blood pressure (mmHg)	Systolic/Diastolic																				
Capillary refill time	≥4 seconds	2																		2	≥4 secs.
	2-3 seconds	1																		1	2-3 secs.
	<2 seconds	0																		0	<2 secs.

DISABILITY

If not alert, consider GCS assessment. Consider clinician review for unrelieved/unexpected pain. Pain scale used: FLACC FPS-R

EXPOSURE

If suspected infection or temperature $<36^{\circ}\text{C}$ or $>38^{\circ}\text{C}$ refer to Sepsis Recognition Escalation Pathway

Early Warning Score Escalation Pathway	
Score	Clinical response
	<ul style="list-style-type: none"> • Remain vigilant • Complete a full set of observations • Notify nurse in charge • Optimise treatment • A plan must be documented • Reassess EWS after interventions • Consider transfer to higher care • Responders to ensure patient team are aware of deterioration
1-3	<p>Senior Nursing Review</p> <ul style="list-style-type: none"> • Increase frequency of observations • Consider Medical Review
4-5	<p>Timely Medical Review</p> <ul style="list-style-type: none"> • Request treating medical team/RMO to review within 30 mins. • Reassess observations within 30 mins. of Medical Review
6-7	<p>Urgent Treating Team Review</p> <ul style="list-style-type: none"> • Request Senior Medical or Consultant to review within 15 mins. • Consider Emergency Telehealth Service/ Critical Care referral/transfer of care • Reassess observations within 15 mins. of Urgent Medical Review
8+	<p>Rapid Response Review/MET</p> <ul style="list-style-type: none"> • Request Senior Medical/Consultant review within 5 mins. • Assess the patient and initiate appropriate clinical care • If no response within 5 mins. or if clinically concerned place a Medical Emergency Call/ Code Blue
E	<p>Immediate Medical Emergency Call/Code Blue</p> <ul style="list-style-type: none"> • Emergency response team with APLS equipment and skills • Initiate BLS and/or APLS as required
Emergency Call for any of the following:	
<ul style="list-style-type: none"> • Airway threat • Cardiac or respiratory arrest • Apnoea or cyanosis • Seizure/prolonged convulsion • Major bleeding 	
<ul style="list-style-type: none"> • Severe respiratory distress • Any observation in the purple zone • You are worried about the patient 	

Sepsis Recognition Escalation Pathway

Use if suspected infection OR abnormal temperature ($<36^{\circ}\text{C}$ or $\geq 38^{\circ}\text{C}$)

Consider sepsis, bacterial infection and need for antibiotics. If sepsis recognition prompt not triggered, respond as per early warning score.

Action as per local process.

High-risk patients – have a lower threshold for requesting medical review if:

- Infants less than 3 months
- Immunosuppression, chemotherapy, long-term steroids or asplenia
- Invasive devices
- Recent surgery, burn or wound
- Unimmunised/incomplete immunisation
- Rural, remote or low socioeconomic status
- Re-presentation or delayed presentation

Sepsis recognition prompt	Clinical Response
<p>EWS 6-7 OR any of the following</p> <ul style="list-style-type: none"> • Mottled, CRT ≥ 3 or cold peripheries • Non-blanching rash • Drowsy or confused • Unexplained pain • Lactate 2-4 mmol/L • Family and/or clinician concern is continuing or increasing 	<p>Urgent Medical Review</p> <ul style="list-style-type: none"> • Request treating medical team or Registrar review within 15 mins. • State sepsis review required • Refer to local paediatric sepsis guideline • Reassess observations within 15 mins. Consider Emergency Telehealth Service/Critical Care referral or transfer to higher level of care.

EWS 8+ OR any of the following	higher level of care
<ul style="list-style-type: none"> • Any observation in red zone • AVPU score P • Lactate >4 mmol/L • BSL <3 mmol/L 	<p>Rapid Response Review</p> <ul style="list-style-type: none"> • Request senior medical or consultant review within 5 mins. • State sepsis review required • Refer to local paediatric sepsis guideline • Assess the patient and initiate appropriate clinical care • If no response within 5 mins. or if clinically concerned place a Medical Emergency Call/Code Blue

Level of sedation UMSS*

Paediatric Acute Recognition and Response Observation Tool

Age 1-4 years



Involve the family

- Include the parent/carer in determining what is normal for their child and what may have changed
- Acknowledge parental concern – they know their child best
- Engage with the parent/carer to agree a management plan and escalation criteria
- If applicable assess observations with parent/carer to review parental concern

Patients of concern include those with

- Increasing oxygen requirement
- Changes in circulation (e.g. mottled/pallor)
- Altered mental state
- Greater than expected fluid loss
- Reduced urine output (<1mL/kg/hr)
- New, increasing or uncontrolled pain
- Blood glucose level ≤3mmol/L
- Family or clinician worried
- Changes to respiratory distress

Assessment of respiratory distress

Instructions – Select the score related to the highest criteria obtained for the patient's clinical condition

	MILD – Score 1	MODERATE – Score 2	SEVERE – Score 3
Airway	<ul style="list-style-type: none"> Stridor on exertion/crying 	<ul style="list-style-type: none"> Some inspiratory stridor at rest Partial airway obstruction 	<ul style="list-style-type: none"> Biphasic stridor at rest Imminent airway obstruction
Behaviour and feeding	<ul style="list-style-type: none"> Normal Age appropriate vocalisation 	<ul style="list-style-type: none"> Some/intermittent irritability Difficulty talking/crying Difficulty feeding or eating 	<ul style="list-style-type: none"> Increased irritability or lethargy Looks exhausted Unable to talk or eat Changes in conscious state such as agitated, confused or drowsy
Respiratory rate/pattern	<ul style="list-style-type: none"> Mildly increased 	<ul style="list-style-type: none"> Respiratory rate increased Abnormal pauses 	<ul style="list-style-type: none"> Respiratory rate significantly increased/absent breath sounds/silent chest Increased/reduced respiratory rate as child tires
Work of breathing	<ul style="list-style-type: none"> Mild intercostal and suprasternal recession 	<ul style="list-style-type: none"> Moderate intercostal and suprasternal recession Nasal flaring or tracheal tug 	<ul style="list-style-type: none"> Marked intercostal, suprasternal and sternal recession
Other		<ul style="list-style-type: none"> May have brief apnoeas (5-10 secs) 	<ul style="list-style-type: none"> Gasping, grunting Extreme pallor, cyanosis Increasingly frequent or prolonged apnoeas (≥20 secs)

Level of consciousness AVPU

ALERT Awake and alert

VOICE Responds to verbal stimuli

PAIN Responds to painful stimuli

UNRESPONSIVE No response to stimuli

Level of Sedation (UMSS – University of Michigan Sedation Scale) ONLY complete if sedation administered as per local policy

Response

0 = Awake and alert	Monitor
1 = Minimally sedated: may appear tired/sleepy, responds to verbal conversation and/or sound	Monitor
2 = Moderately sedated: somnolent/sleeping, easily roused with tactile stimulation or simple verbal command	Monitor
3 = Deep sedation: deep sleep, rousable only with deep or physical stimulation	Rapid Response Review
4 = Unrousable	Medical Emergency Call

Pain scales used – select (with tick) appropriate pain assessment tool

	Categories	Score 0	Score 1	Score 2
<input type="checkbox"/> FLACC	Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Each category is scored 0-2, resulting in a total score of 0-10. Add the score of each box and total to a score of 10.	Legs	Normal position, or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
<input type="checkbox"/> FPS-R	Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
The face on the left means no pain and on the far right means extreme pain, ask the patient to point to the face that shows how much you hurt right now.	Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
	Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficult to console or comfort



Communicate on the importance of timely action in recognising and responding to a patient's changing condition

NEEDS

- What type of review does this patient need?
- What is the time frame for this review?
- What do I need to do or say right now to ensure my patient is safe?

OBSERVATIONS

- What are the specific observations raising concerns about the patient?
- What do I know about my patient's condition?
- What clinical signs and symptoms are a problem?

WHY

- What are the potential consequences to the patient if there is a delay in taking action?

**iSOB
AR**

Establish the level of need and urgency, then plan the required communication

Paediatric Acute Recognition and Response Observation Tool

Age 5-11 years



EMR3000030

Hospital/health service:

(Affix patient identification label here)

URN:

Family name:

Given name(s):

Address:

Date of birth:

Gender: M F I

**5-11
YEARS**

Other charts in use

- Fluid Balance Weight Neurological Neurovascular Glucose monitoring Pain and analgesia Respiratory assessment Other

General instructions

General instructions for using chart

- To obtain an Early Warning Score all observations must be recorded
- Record the observation as a dot; connect to previous dot with a straight line to represent a graph
- Any observation outside graph area or in a coloured area must be written as a number in allocated box
- Always refer to local process

A full set of observations must be completed

- At time of initial presentation/admission to area and as appropriate for the patient's clinical condition
- When a patient is experiencing, or at risk of experiencing, an episode of acute deterioration
- When the clinician or family are worried about the patient

If observation falls within coloured area

- A full set of observations must be completed
- Refer to EWS Escalation or Sepsis Recognition Escalation Pathway for action plan, unless a modification has been made: refer to local process

Modification to Early Warning Score (EWS)

- Acceptable parameters can be modified based on the patient's specific clinical, treatment and/or pre-existing conditions.
- All modifications must adhere to local process and be reviewed frequently by the treating consultant.
- **Modifications must NEVER be used to normalise a clinically unstable patient.**

Observations	Accepted parameters and modified EWS	Date and time	Duration (hrs)	Name and signature
		/ / :		Name Signature
Reason:		/ / :		Name Signature
		/ / :		Name Signature
Reason:		/ / :		Name Signature
Reason:		/ / :		Name Signature

Events – record event details, including interventions, and concerns from clinician or family

	Intervention/comment	Initials
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		

Paediatric Acute Recognition and Response Observation Tool

Age 5-11 years



Involve the family

- Include the parent/carer in determining what is normal for their child and what may have changed
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- Reduced urine output (<1mL/kg/hr)
- New, increasing or uncontrolled pain
- Blood glucose level ≤3mmol/L
- Family or clinician worried
- Changes to respiratory distress

Assessment of respiratory distress

Instructions – Select the score related to the highest criteria obtained for the patient's clinical condition

	MILD – Score 1	MODERATE – Score 2	SEVERE – Score 3
Airway	<ul style="list-style-type: none"> Stridor on exertion/crying 	<ul style="list-style-type: none"> Some inspiratory stridor at rest Partial airway obstruction 	<ul style="list-style-type: none"> Biphasic stridor at rest Imminent airway obstruction
Behaviour and feeding	<ul style="list-style-type: none"> Normal Age appropriate vocalisation 	<ul style="list-style-type: none"> Some/intermittent irritability Difficulty talking/crying Difficulty feeding or eating 	<ul style="list-style-type: none"> Increased irritability or lethargy Looks exhausted Unable to talk or eat Changes in conscious state such as agitated, confused or drowsy
Respiratory rate/pattern	<ul style="list-style-type: none"> Mildly increased 	<ul style="list-style-type: none"> Respiratory rate increased Abnormal pauses 	<ul style="list-style-type: none"> Respiratory rate significantly increased/absent breath sounds/silent chest Increased/reduced respiratory rate as child tires
Work of breathing	<ul style="list-style-type: none"> Mild intercostal and suprasternal recession 	<ul style="list-style-type: none"> Moderate intercostal and suprasternal recession Nasal flaring or tracheal tug 	<ul style="list-style-type: none"> Marked intercostal, suprasternal and sternal recession
Other		<ul style="list-style-type: none"> May have brief apnoeas (5-10 secs) 	<ul style="list-style-type: none"> Gasping, grunting Extreme pallor, cyanosis Increasingly frequent or prolonged apnoeas (≥20 secs)

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Level of Sedation (UMSS – University of Michigan Sedation Scale) ONLY complete if sedation administered as per local policy

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3 = Deep sedation: deep sleep, rousable only with deep or physical stimulation	Rapid Response Review
4 = Unrousable	Medical Emergency Call

Pain scales used – select (with tick) appropriate pain assessment tool

	Categories	Score 0	Score 1	Score 2
<input type="checkbox"/> FLACC	Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
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<input type="checkbox"/> FPS-R	Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
The face on the left means no pain and on the far right means extreme pain, ask the patient to point to the face that shows how much you hurt right now.	Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
<input type="checkbox"/> Numeric	Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficult to console or comfort



Communicate on the importance of timely action in recognising and responding to a patient's changing condition

NEEDS

- What type of review does this patient need?
- What is the time frame for this review?
- What do I need to do or say right now to ensure my patient is safe?

OBSERVATIONS

- What are the specific observations raising concerns about the patient?
- What do I know about my patient's condition?
- What clinical signs and symptoms are a problem?

WHY

- What are the potential consequences to the patient if there is a delay in taking action?

iSOBAR

Establish the level of need and urgency, then plan the required communication

Paediatric Acute Recognition and Response Observation Tool



Age 12 years and above

Hospital/health service:

(Affix patient identification label here)

URN:

Family name:

Given name(s):

Address:

Date of birth:

Gender: M F I

**AGE
12 YEARS
AND ABOVE**

Other charts in use

- Fluid Balance Weight Neurological Neurovascular Glucose monitoring Pain and analgesia Respiratory assessment Other

General instructions

General instructions for using chart

- To obtain an Early Warning Score all observations must be recorded
- Record the observation as a dot; connect to previous dot with a straight line to represent a graph
- Any observation outside graph area or in a coloured area must be written as a number in allocated box
- Always refer to local process

A full set of observations must be completed

- At time of initial presentation/admission to area and as appropriate for the patient's clinical condition
- When a patient is experiencing, or at risk of experiencing, an episode of acute deterioration
- When the clinician or family are worried about the patient

If observation falls within coloured area

- A full set of observations must be completed
- Refer to EWS Escalation or Sepsis Recognition Escalation Pathway for action plan, unless a modification has been made: refer to local process

Modification to Early Warning Score (EWS)

- Acceptable parameters can be modified based on the patient's specific clinical, treatment and/or pre-existing conditions.
- All modifications must adhere to local process and be reviewed frequently by the treating consultant.
- Modifications must NEVER be used to normalise a clinically unstable patient.**

Observations	Accepted parameters and modified EWS	Date and time	Duration (hrs)	Name and signature
		/ / :		Name Signature
Reason:		/ / :		Name Signature
Reason:		/ / :		Name Signature
Reason:		/ / :		Name Signature

Events – record event details, including interventions, and concerns from clinician or family

	Intervention/comment	Initials
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		

EMR300040

DO NOT WRITE IN MARGIN



(Affix patient identification label here)	
URN:	
Family name:	AGE 12 YEARS AND ABOVE
Given name(s):	
Address:	
Date of birth:	Gender: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> I



Age 12 years and above

Paediatric Acute Recognition and Response Observation Tool

Date	Time	Family/clinician concern*		AIRWAY & BREATHING Any airway threat escalate to MEDICAL EMERGENCY. If any increase in oxygen requirement, consider early escalation.														
Assessment of respiratory distress		Severe	3													3	Severe	
Moderate		2													2	Moderate		
Mild		1													1	Mild		
Nil		0													0	Nil		
Respiratory rate breaths/minute		≥45	3													3	≥45	
40		3													3	40		
35		2													2	35		
30		1													1	30		
25		0													0	25		
20		0													0	20		
15		1													0	15		
10		2													1	10		
≤5		E													2	≤5		
Respiratory rate (number)																		
O ₂ saturations		≥92	0													0	≥92	
89-91		1													1	89-91		
86-88		2													2	86-88		
≤85		E													E	≤85		
O ₂ saturations % (number %)																		
Probe change																Probe Δ		
O ₂ therapy instructions For HHF only use FiO ₂ Room air (RA) Nasal prongs (NP) Face mask (FM) Non-rebreather mask (NRM) Tracheostomy (T) CPAP (C) Non-invasive ventilation (NIV) HHFNP (HHF)																		
O ₂ therapy litres/minute or FiO ₂		≥10L	>50%	3													3	
>5-10L		40-49%	2													2		
>2-5L		30-39%	1													1		
≤2L		21-29%	0													0		
Mode of O ₂ delivery																		
CIRCULATION If the temperature, HR and CRT is increased, refer to Sepsis Recognition Escalation Pathway																		
Heart rate beats/minute		≥150	3													3	≥150	
140		3													3	140		
130		2													2	130		
120		1													1	120		
110		0													0	110		
100		0													0	100		
90		0													0	90		
80		0													0	80		
70		0													0	70		
60		0													0	60		
50		1													1	50		
≤40		3													3	≤40		
Heart rate (number)																		
Score on systolic blood pressure (mmHg)		E													E	≥200		
195		3													3	195		
190		3													3	190		
185		2													2	185		
180		2													2	180		
175		2													2	175		
170		1													1	170		
165		1													1	165		
160		1													1	160		
155		1													1	155		
150		0													0	150		
145		0													0	145		
140		0													0	140		
135		0													0	135		
130		0													0	130		
125		0													0	125		
120		0													0	120		
115		0													0	115		
110		0													0	110		
105		0													0	105		
100		0													0	100		
95		0													0	95		
90		1													1	90		
85		1													1	85		
80		2													2	80		
75		2													2	75		
70		3													3	70		
65		3													3	65		
<60		E													E	<60		
Blood pressure (mmHg) Systolic/Diastolic																		
Capillary refill time Central (seconds)		≥4 seconds	2													2	≥4 secs.	
2-3 seconds		1													1	2-3 secs.		
<2 seconds		0													0	<2 secs.		
DISABILITY If not alert, consider GCS assessment. Consider clinician review for unrelieved/unexpected pain. Pain scale used: <input type="checkbox"/> FLACC <input type="checkbox"/> FPS-R <input type="checkbox"/> Numeric																		
Pain scale*		7-10	2													2	7-10	
4-6		1													1	4-6		
0-3		0													0	0-3		
Level of Consciousness*		Alert	0													0	Alert	
Voice		1													1	Voice		
Pain		2													2	Pain		
AVPU		Unresponsive	E													E	Unresp.	
EXPOSURE If suspected infection or temperature <36°C or ≥38°C refer to Sepsis Recognition Escalation Pathway																		
Temperature °C		>40	-													-	>40	
39.5		-													-	39.5		
39		-													-	39		
38.5		-													-	38.5		
38		-													-	38		
37.5		-													-	37.5		
37		-													-	37		
36.5		-													-	36.5		
36		-													-	36		
35.5		-													-	35.5		
35		-													-	35		
Temperature °C (number)																		
Total Early Warning score																		
Events																		
Initials																		

Early Warning Score Escalation Pathway		
Score	Clinical response	
1-3	<ul style="list-style-type: none"> • Remain vigilant • Complete a full set of observations • Notify nurse in charge • Optimise treatment • A plan must be documented • Reassess EWS after interventions • Consider transfer to higher care • Responders to ensure patient team are aware of deterioration 	
4-5	<p>Senior Nursing Review</p> <ul style="list-style-type: none"> • Increase frequency of observations • Consider Medical Review 	
6-7	<p>Timely Medical Review</p> <ul style="list-style-type: none"> • Request treating medical team/RMO to review within 30 mins. • Reassess observations within 30 mins. of Medical Review 	
8+	<p>Urgent Treating Team Review</p> <ul style="list-style-type: none"> • Request Senior Medical or Consultant to review within 15 mins. • Consider Emergency Telehealth Service/ Critical Care referral/transfer of care • Reassess observations within 15 mins. of Urgent Medical Review 	
E	<p>Rapid Response Review/MET</p> <ul style="list-style-type: none"> • Request Senior Medical/Consultant review within 5 mins. • Assess the patient and initiate appropriate clinical care • If no response within 5 mins. or if clinically concerned place a Medical Emergency Call/ Code Blue <p>Immediate Medical Emergency Call/Code Blue</p> <ul style="list-style-type: none"> • Emergency response team with APLS equipment and skills • Initiate BLS and/or APLS as required <p>Emergency Call for any of the following:</p> <ul style="list-style-type: none"> • Airway threat • Cardiac or respiratory arrest • Apnoea or cyanosis • Seizure/prolonged convulsion • Major bleeding • Severe respiratory distress • Any observation in the purple zone • You are worried about the patient 	
Sepsis Recognition Escalation Pathway		
Use if suspected infection OR abnormal temperature (<36°C or ≥38°C)		
Consider sepsis, bacterial infection and need for antibiotics. If sepsis recognition prompt not triggered, respond as per early warning score.		
Action as per local process.		
High-risk patients – have a lower threshold for requesting medical review if:		
<ul style="list-style-type: none"> • Infants less than 3 months • Immunosuppression, chemotherapy, long-term steroids or asplenia • Invasive devices • Recent surgery, burn or wound • Unimmunised/incomplete immunisation • Rural, remote or low socio-economic status • Re-presentation or delayed presentation 		
Sepsis recognition prompt	Clinical Response	
EWS 6-7 OR any of the following		
<ul style="list-style-type: none"> • Mottled, CRT ≥3 or cold peripheries • Non-blanching rash • Drowsy or confused • Unexplained pain • Lactate 2-4 mmol/L • Family and/or clinician concern is continuing or increasing 		
EWS 8+ OR any of the following	Rapid Response Review	
<ul style="list-style-type: none"> • Any observation in red zone • AVPU score P • Lactate >4 mmol/L • BSL <3 mmol/L 		
Level of sedation UMSS* (ONLY complete if sedation administered)		
Date		
Time		
0 0		
1 0		
2 0		
3 RR		
4 E		

Paediatric Acute Recognition and Response Observation Tool

Age 12 years and above



Involve the family

- Include the parent/carer in determining what is normal for their child and what may have changed
- Acknowledge parental concern – they know their child best
- Engage with the parent/carer to agree a management plan and escalation criteria
- If applicable assess observations with parent/carer to review parental concern

Patients of concern include those with

- Increasing oxygen requirement
- Changes in circulation (e.g. mottled/pallor)
- Altered mental state
- Greater than expected fluid loss
- Reduced urine output (<1mL/kg/hr)
- New, increasing or uncontrolled pain
- Blood glucose level ≤3mmol/L
- Family or clinician worried
- Changes to respiratory distress

Assessment of respiratory distress

Instructions – Select the score related to the highest criteria obtained for the patient's clinical condition

	MILD – Score 1	MODERATE – Score 2	SEVERE – Score 3
Airway	<ul style="list-style-type: none"> Stridor on exertion/crying 	<ul style="list-style-type: none"> Some inspiratory stridor at rest Partial airway obstruction 	<ul style="list-style-type: none"> Biphasic stridor at rest Imminent airway obstruction
Behaviour and feeding	<ul style="list-style-type: none"> Normal Age appropriate vocalisation 	<ul style="list-style-type: none"> Some/intermittent irritability Difficulty talking/crying Difficulty feeding or eating 	<ul style="list-style-type: none"> Increased irritability or lethargy Looks exhausted Unable to talk or eat Changes in conscious state such as agitated, confused or drowsy
Respiratory rate/pattern	<ul style="list-style-type: none"> Mildly increased 	<ul style="list-style-type: none"> Respiratory rate increased Abnormal pauses 	<ul style="list-style-type: none"> Respiratory rate significantly increased/absent breath sounds/silent chest Increased/reduced respiratory rate as child tires
Work of breathing	<ul style="list-style-type: none"> Mild intercostal and suprasternal recession 	<ul style="list-style-type: none"> Moderate intercostal and suprasternal recession Nasal flaring or tracheal tug 	<ul style="list-style-type: none"> Marked intercostal, suprasternal and sternal recession
Other		<ul style="list-style-type: none"> May have brief apnoeas (5-10 secs) 	<ul style="list-style-type: none"> Gasping, grunting Extreme pallor, cyanosis Increasingly frequent or prolonged apnoeas (>20 secs)

Level of consciousness AVPU

ALERT Awake and alert

VOICE Responds to verbal stimuli

PAIN Responds to painful stimuli

UNRESPONSIVE No response to stimuli

Level of Sedation (UMSS – University of Michigan Sedation Scale) ONLY complete if sedation administered as per local policy

Response

0 = Awake and alert	Monitor
1 = Minimally sedated: may appear tired/sleepy, responds to verbal conversation and/or sound	Monitor
2 = Moderately sedated: somnolent/sleeping, easily roused with tactile stimulation or simple verbal command	Monitor
3 = Deep sedation: deep sleep, rousable only with deep or physical stimulation	Rapid Response Review
4 = Unrousable	Medical Emergency Call

Pain scales used – select (with tick) appropriate pain assessment tool

	Categories	Score 0	Score 1	Score 2
<input type="checkbox"/> FLACC	Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Each category is scored 0-2, resulting in a total score of 0-10. Add the score of each box and total to a score of 10.	Legs	Normal position, or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
<input type="checkbox"/> FPS-R	Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
The face on the left means no pain and on the far right means extreme pain, ask the patient to point to the face that shows how much you hurt right now.	Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
<input type="checkbox"/> Numeric	Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficult to console or comfort



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Establish the level of need and urgency, then plan the required communication

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