A) GENERAL DESCRIPTION

Paediatrics Clinical Teaching Unit – Emergency, New-born & Ward:

Clinical paediatric electives are located at Windsor Regional Hospital – Metropolitan Campus. Students will work closely with paediatricians and may be involved in one or more of the following activities:

- caring for patients in the outpatient subspecialty and general paediatric clinics
- caring for patients in the Emergency Department
- caring for patients on the inpatient unit in the form of consultations or on-going care
- being on-call
- attending rounds
- presenting rounds

B) GENERAL LEARNING OBJECTIVES

The student is able to:

1. Demonstrate proficiency in acquiring a complete and accurate paediatric history with consideration of the child’s age, development, and the family’s cultural, socioeconomic and educational background.
2. Describe differences between the medical management of paediatric patients versus adult patients.
3. Recognize an acutely ill child and describe an initial management plan.
4. Demonstrate an approach to the following core clinical paediatric presentations (see below – chart 1).
5. Demonstrate physical examination skills that reflect consideration of the clinical presentation as well as the comfort, age, development and cultural context of the infant, child, or adolescent.
6. Demonstrate competence with the listed paediatric physical examination skills in addition to general physical examination skills (see below – chart 2).
Demonstrate an approach to the following core clinical paediatric presentations including:

- differential diagnosis
- initial diagnostic investigations
- management plan

Listed beside each core clinical paediatric presentation are key topics/conditions. The key conditions are neither a differential diagnosis nor a scheme (approach to the clinical presentation). The highlighted conditions are those that may be unique to paediatrics, that are essential, or that are common. The key conditions are those conditions that must be known in detail.

Please use *Nelson Essentials of Pediatrics* (recommended textbook) as a guide to the depth of knowledge expected.

- SGY1 = small group year 1
- SGY2 = small group year 2

<table>
<thead>
<tr>
<th>Core Clinical Presentation</th>
<th>Key Conditions</th>
<th>Additional Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal Pain</td>
<td>Appendicitis</td>
<td>Describe the clinical features of recurrent abdominal pain that suggest a pathologic medical condition (SGY2)</td>
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<tr>
<td></td>
<td>Intussception</td>
<td>List the major medical disorders that present with chronic or recurrent abdominal pain in childhood (SGY2)</td>
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<tr>
<td></td>
<td>Constipation</td>
<td>Describe the effect of IBD or other chronic disease on normal development in school age, adolescent and young adult patients (SGY2)</td>
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<td></td>
<td>Recurrent abdominal pain of childhood</td>
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<td></td>
<td>Inflammatory bowel disease</td>
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<td></td>
<td>Infection (gastroenteritis and UTI)</td>
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<td></td>
<td>Henoch Scholein Purpura (HSP)</td>
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<tr>
<td>Altered Level of Consciousness</td>
<td>Seizure</td>
<td>Distinguish based on clinical presentation common toxidromes and their emergency antidotes</td>
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<td></td>
<td>Poisoning / intoxication</td>
<td>Describe the pathophysiology of concussion and the protocol for return to sport</td>
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<tr>
<td></td>
<td>Head injury / concussion</td>
<td>Name and classify the most common CNS pathogens based on organism type and area</td>
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<tr>
<td></td>
<td>Meningoencephalitis</td>
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<td></td>
<td>Hypoglycemia</td>
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<td></td>
<td>Metabolic disease</td>
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<tr>
<td>Knowledge of specific diseases is not expected</td>
<td>(knowledge of specific diseases is not expected)</td>
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<td>------------------------------------------------</td>
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<td>of brain commonly affected</td>
<td>• Describe the difference in CSF findings in various CNS infections</td>
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<td></td>
<td>• List preventive strategies, complications and long term prognosis for childhood meningitis (SGY2)</td>
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<tr>
<td></td>
<td>• Describe the different clinical presentations of inborn errors of metabolism</td>
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</table>

### Bruising and Bleeding
- Idiopathic thrombocytopenic purpura (ITP)
- HSP
- Hemophilia / von Willebrand disease
- Meningococceemia

### Dehydration
- Mild / moderate / severe dehydration
- Hypo / hypernatremia
- Diabetic Ketoacidosis

<table>
<thead>
<tr>
<th>Dehydration</th>
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<tbody>
<tr>
<td>• Describe the clinical signs of dehydration</td>
</tr>
<tr>
<td>• Describe the principles of rehydration</td>
</tr>
<tr>
<td>• Explain the effect of hyperglycemia on fluid, electrolyte and acid-base status</td>
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<tr>
<td>• Describe the management of diabetic ketoacidosis</td>
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### Developmental & Behavioral Problems
- Autism / Pervasive developmental delay
- Attention deficit hyperactivity disorder
- Isolated and global developmental delay
- Down Syndrome
- Fetal alcohol syndrome
- Temper tantrums

<table>
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<tr>
<th>Developmental &amp; Behavioral Problems</th>
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</thead>
<tbody>
<tr>
<td>• Describe the concept of developmental surveillance</td>
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<tr>
<td>• Define the 5 developmental domains used in describing childhood development</td>
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<tr>
<td>• List major age-related developmental milestones through age 6</td>
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<tr>
<td>• Describe typical patterns of social-emotional development</td>
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<td>• Recognize major deviations from the normal range of development and behavior</td>
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<tr>
<td>• For a child with disruptive behavior, outline the prognosis for the following diagnoses: normal temper tantrums, ADHD and autism (SGY2)</td>
</tr>
<tr>
<td>• Outline a management plan for a preschooler with hyperactive, inattentive, impulsive and distractible behavior (SGY2)</td>
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### Diarrhea
- Gastroenteritis
- Celiac disease
- Hemolytic uremic syndrome
- Inflammatory bowel disease
- Cow’s milk protein intolerance

<table>
<thead>
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<tbody>
<tr>
<td>• Identify infectious and non-infectious causes of diarrhea and describe the pathophysiology of these conditions</td>
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<td>Toddler’s diarrhea</td>
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### Edema
- Nephrotic syndrome and proteinuria
- Nephritic syndrome and hematuria
- Acute kidney injury

- Distinguish between transient, benign, and pathologic proteinuria
- Distinguish between pre-renal, renal and post-renal failure
- Describe non-renal causes of edema
- Describe initial fluid management in acute kidney injury and list the indications for dialysis

### Fever
- Meningitis
- Occult bacteremia / Sepsis (< 1 mon., 1-3 mon and > 3 mon.)
- Kawasaki disease
- Urinary tract infection

- Describe the approach to the evaluation of fever without a focus

### Growth Problems
- Failure to thrive
- Hypothyroidism
- Precocious and delayed puberty
- Short stature
- Obesity
- Anorexia
- Turner’s syndrome

- Describe the normal pattern of growth velocity in infants, children and adolescents
- Describe the typical and atypical timing and progression of sexual maturation
- Differentiate abnormal growth from normal growth variants (SGY2)
- Demonstrate correct plotting of growth parameters and calculation of body mass index
- Calculate target heights (predicted adult height) based on parental height (SGY2)
- Discuss the clinical signs of normal puberty and their usual progression (SGY2)
- List clinical features which would suggest growth hormone deficiency, syndromic or a genetic disorder in a child with short stature (SGY2)
- Describe the sequence of investigations for children with short stature (SGY2)

### Headache
- Migraine
- Brain tumor
- Increased ICP

- Describe the history and physical exam findings in a patient with increased intracranial pressure
- Discuss the initial medical management of increased ICP

### Inadequately explained injury (child abuse)
- Physical abuse
- Abusive head trauma
- Sexual abuse
- Neglect
- Emotional abuse

- Define the different types of child maltreatment (physical abuse, sexual abuse, neglect and emotional abuse)
- List the risk factors for child maltreatment
- Recognize normal and abnormal patterns of injury in children
<table>
<thead>
<tr>
<th>Limp / Extremity pain</th>
<th>Lymphadenopathy</th>
<th>Murmur and/or cyanosis</th>
<th>Neonatal Jaundice</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Osteomyelitis</td>
<td>- Reactive / benign</td>
<td>- Innocent murmurs (Stills and venous hum)</td>
<td>- Biliary atresia</td>
</tr>
<tr>
<td>- Septic arthritis</td>
<td>- Cervical adenitis</td>
<td>- VSD</td>
<td>- TORCH infections</td>
</tr>
<tr>
<td>- Juvenile idiopathic arthritis</td>
<td>- Malignancy (leukemia / lymphoma)</td>
<td>- Coarctation of the aorta</td>
<td>- Neonatal hepatitis</td>
</tr>
<tr>
<td>- Rheumatic fever</td>
<td>- Mononucleosis</td>
<td>- ASD</td>
<td>- Sepsis</td>
</tr>
<tr>
<td>- Transient synovitis</td>
<td></td>
<td>- Tetralogy of Fallot</td>
<td>- Breast feeding jaundice</td>
</tr>
<tr>
<td>- Developmental dysplasia of the hip</td>
<td></td>
<td>- Transposition of the great arteries</td>
<td>- Breast milk jaundice</td>
</tr>
<tr>
<td>- Legg Calve Perthes disease</td>
<td></td>
<td>- PDA</td>
<td>- Physiologic jaundice</td>
</tr>
<tr>
<td>- Slipped capital femoral epiphysis</td>
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<td></td>
<td>- Birth trauma/bruising</td>
</tr>
<tr>
<td>- Growing pains</td>
<td></td>
<td></td>
<td>- Isoimmune/hemolysis</td>
</tr>
<tr>
<td>- Osgood Schlater disease</td>
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<td>- Kernicterus</td>
</tr>
</tbody>
</table>

- Describe characteristics of limb pain which would suggest child abuse (SGY2)
- Develop a systematic method to approaching acute limb pain (SGY2)
- List at least 4 important factors for the diagnosis of acute limb pain (SGY2)
- Describe how to clinically differentiate normal from pathological lymph nodes in children (SGY1)
- Classify congenital heart defects according to pathophysiology
- Describe the structural and dynamic changes that occur following birth in the cardiovascular system, including closure of the ductus arteriosus (SGY1)
- Compare the etiology of cardiac arrest in children vs. adults (SGY2)
- Describe an approach to resuscitating an acutely ill infant (SGY2)
### Newborn
- Prematurity
- Birth asphyxia
- Congenital infections
- Respiratory distress
- Neonatal sepsis
- Large and small for gestational age
- Developmental dysplasia of the hip
- Undescended testes
- Ambiguous genitalia
- Absent red reflex
- Vitamin K deficiency
- Hypotonia
- Neonatal transition
- Trisomy 21
- Fetal alcohol spectrum disorder
- Abnormal newborn screen
- Hypotonia

- Describe the necessary components of a complete perinatal history
- Discuss the complications of premature birth
- Describe the etiology and effects of birth asphyxia
- Describe the purpose of neonatal screening and be aware of the Ontario newborn screening program
- Discuss the transition from intrauterine to extraterine environment with respect to:
  - Temperature regulation
  - Cardiac / respiratory physiology
  - Glucose regulation
  - Initiation of feeding

### Pediatric Health Supervision
- Nutrition
- Growth parameters
- Hypertension
- Healthy active living
- Normal development
- Immunizations
- Anticipatory guidance
- Injury prevention
- Vision and hearing
- Dental health
- Discipline / Parenting
- Sleep issues
- SIDS
- Crying / Colic
- Sexual development / health

- Describe the nutritional requirements for growth and maintenance of health for infants, children and adolescents
- Compare breast and formula feeding
- Identify risk factors for pediatric hypertension
- Differentiate between primary and secondary hypertension
- Counsel a patient / family on the components and benefits of a healthy active lifestyle
- Describe how vaccines work and the disease they prevent
- Summarize the benefits and contraindications of immunizations
- Describe the concept of anticipatory guidance and potential topics for discussion from birth to adolescents
- Describe the epidemiology of childhood injury
- Describe age-related measures to reduce injury in the pediatric population
- Identify risk factors for hearing and vision impairment
- Describe the indications for hearing and vision screening in healthy and at risk children
- Describe the timing of eruption of the
- Describe the epidemiology, etiology and prevention of dental caries
- Describe strategies for appropriate and effective discipline
- Describe sleep physiology and stages, sleep needs for different age groups, and best practices for sleep hygiene
- List risk factors for and strategies that decrease the risk of Sudden Infant Death
- Describe the difference between normal and abnormal infant crying
- Describe the epidemiology, clinical manifestations, differential diagnosis and treatment of infant colic
- Describe how an adolescent history differs from a general pediatric history
- Describe the topics to be covered during an adolescent history (HEADDS)

| Pallor (anemia) | • Iron deficiency
• Hemolysis
• Inherited hemoglobinopathies (sickle cell anemia and thalassemia)
• Leukemia | • Differentiate between causes of anemia using the mean cell volume (SGY1)
• List common etiologies for microcytic, normocytic and macrocytic anemias (SGY1)
• Describe an approach to anemia diagnosis in a newborn baby (SGY1)
• List the ways to prevent iron deficiency anemia in infants (SGY2) |

| Rash | • Cellulitis
• Varicella
• Atopic dermatitis
• Diaper dermatitis
• Viral exanthems
• Scarlet fever
• Scabies
• Acne
• Impetigo
• Seborrhea
• Urticaria
• Drug Eruption | • Describe common infections characterized by fever and rash |

| Respiratory Distress / Cough | • Pneumonia
• Bronchiolitis
• Asthma
• Cystic fibrosis
• Pertussis
• Croup
• Foreign body | • Describe an approach to respiratory arrest in children (SGY2)
• List the common causes of respiratory failure in children (SGY2)
• List complications of foreign body aspiration and ways this can be prevented (SGY1)
• List criteria for hospitalization of an infant |
- Epiglottitis
- Tracheitis
- Congestive heart failure
- Anaphylaxis

**Seizure / Paroxysmal event**
- Febrile vs. non-febrile seizure
- General vs. focal seizure
- Status epilepticus
- ALTE
- Syncope
- Breath-holding spell

**Sore ear**
- Otitis media
- Otitis externa

**Sore / Red eye**
- Periorbital cellulitis
- Orbital cellulites
- Conjunctivitis

**Sore throat / Sore mouth**
- Pharyngitis
- Peritonsillar abscess
- Retropharyngeal cellulitis
- Stomatitis
- Oral thrush

**Urinary Complaints (polyuria / frequency / dysuria / hematuria)**
- Diabetes / diabetic ketoacidosis
- Urinary tract infection
- Enuresis
- Post infectious glomerulonephritis
- Henoch-Schonlein purpura

**Vomiting**
- Gastroesophageal reflux disease
- Pyloric stenosis
- Malrotation / volvulus
- Intussusception
- Gastroenteritis

- Discuss the treatment plan and provide a prognosis for children with simple febrile seizures (SGY2)
- Describe the aspects of the history and physical examination that would support a diagnosis of meningitis in a child with a fever and seizure (SGY2)

- Describe the pathophysiology, risk factors, clinical presentation and treatment of common diseases affecting the middle and external ear
- Name and classify pathogens that cause ear infections in children
- Describe the basic principles of pharmacology for antibiotic use and analgesia in ear infections

- Define vesicoureteral reflux and describe the different grades
- Compare and contrast the presenting signs and symptoms of an UTI in an infant, preschooler and school aged child (SGY1)
- Describe the natural history and a treatment approach for nocturnal enuresis (SGY1)
Demonstrate competence with the following paediatric physical examination skills in addition to general physical examination skills:

- Measure and interpret height, weight, head circumference (including plotting on growth curve and calculation of BMI)
- Measure and interpret vital signs
- Palpate for fontanels and suture lines
- Perform red reflex and cover-uncover test
- Perform otoscopy
- Inspect for dysmorphic features
- Elicit primitive reflexes
- Inspect for and describe common newborn skin rashes
- Assess for features that distinguish innocent from organic murmurs
- Perform infant hip examination
- Assess the lumbosacral spine for abnormalities
- Assess for scoliosis
- Palpate femoral pulses
- Examine external genitalia
- Assess for sexual maturity rating (Tanner staging)

**EVALUATION:** Summative Clinical Elective Assessment completed by the Academic Director

**LOTTERY:** Paediatric CTU electives are **ONLY** available via the On-line Electives Lottery – 1 Student per Block