**PAEDIATRICS & MEDICAL GENETICS**

**COORDINATOR:** Dr. Sarah Smith-Periard  
**Phone:** 519-685-8500 x52328  
**Address:** Room B1-431, Children’s Hospital  
**Email:** Sarah.SmithPeriard@lhsc.on.ca

A) **General Description**

Clinical Paediatrics – Office, Emergency, Newborn & Ward:

Clinical paediatric electives are located in London at Children’s Hospital, Victoria Campus. The nature and responsibilities of the rotation depend upon the elective chosen. 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 wards in the form of consultations or on-going care  
- being on-call  
- attending rounds  
- presenting rounds

<table>
<thead>
<tr>
<th>Subspecialty</th>
<th>Students per block</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatology</td>
<td>1 student per block</td>
<td>4</td>
</tr>
<tr>
<td>Paediatric Emergency Medicine</td>
<td>1 student per block</td>
<td>2</td>
</tr>
<tr>
<td>Clinical Pharmacology</td>
<td>1 student per block</td>
<td>4</td>
</tr>
<tr>
<td>Paediatric Cardiology</td>
<td>1 student per block</td>
<td>4</td>
</tr>
<tr>
<td>Paediatric Critical Care</td>
<td>1 student per block</td>
<td>2</td>
</tr>
<tr>
<td>Paediatric Endocrinology</td>
<td>1 student per block</td>
<td>4</td>
</tr>
<tr>
<td>Paediatric Gastroenterology</td>
<td>1 student per block</td>
<td>4</td>
</tr>
<tr>
<td>Medical Genetics</td>
<td>1 student per block</td>
<td>4</td>
</tr>
<tr>
<td>Paediatric Haematology/Oncology</td>
<td>1 student per block</td>
<td>4</td>
</tr>
<tr>
<td>Paediatric Nephrology</td>
<td>1 student per block</td>
<td>2</td>
</tr>
<tr>
<td>Paediatric Neurology</td>
<td>1 student per block</td>
<td>2</td>
</tr>
<tr>
<td>Paediatric Respirology</td>
<td>1 student per block</td>
<td>2</td>
</tr>
</tbody>
</table>

**NOTE:** The - 4 signifies that 4-week electives ONLY can be chosen in these subspecialties

* During the block in Paediatric Emergency, students will be expected to work rotating shifts that will include Saturday and Sunday. Students are expected to keep their weekend(s) open.

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

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

### Dehydration
- Mild / moderate / severe dehydration
- Hypo / hypernatremia
- Diabetic Ketoacidosis
- Describe the clinical signs of dehydration
- Describe the principles of rehydration
- Explain the effect of hyperglycemia on fluid, electrolyte and acid-base status
- Describe the management of diabetic ketoacidosis

### Developmental & Behavioral Problems
- Autism / Pervasive developmental delay
- Attention deficit hyperactivity disorder
- Isolated and global developmental delay
- Down Syndrome
- Fetal alcohol syndrome
- Temper tantrums
- Describe the concept of developmental surveillance
- Define the 5 developmental domains used in describing childhood development
- List major age-related developmental milestones through age 6
- Describe typical patterns of social-emotional development
- Recognize major deviations from the normal range of development and behavior
- For a child with disruptive behavior, outline the prognosis for the following diagnoses: normal temper tantrums, ADHD and autism (SGY2)
- Outline a management plan for a preschooler with hyperactive, inattentive, impulsive and distractible behavior (SGY2)

### Diarrhea
- Gastroenteritis
- Celiac disease
- Hemolytic uremic syndrome
- Inflammatory bowel disease
- Cow’s milk protein intolerance
- Toddler’s diarrhea
- Cystic fibrosis
- Identify infectious and non-infectious causes of diarrhea and describe the pathophysiology of these conditions
<table>
<thead>
<tr>
<th></th>
<th>Edema</th>
<th>Fever</th>
<th>Growth Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Nephrotic syndrome and proteinuria</td>
<td>• Meningitis</td>
<td>• Failure to thrive</td>
</tr>
<tr>
<td></td>
<td>• Nephritic syndrome and hematuria</td>
<td>• Occult bacteremia / Sepsis (&lt; 1 mon., 1-3 mon and &gt; 3 mon.)</td>
<td>• Hypothyroidism</td>
</tr>
<tr>
<td></td>
<td>• Acute kidney injury</td>
<td>• Kawasaki disease</td>
<td>• Precocious and delayed puberty</td>
</tr>
<tr>
<td></td>
<td>• Distinguish between transient, benign, and pathologic proteinuria</td>
<td>• Urinary tract infection</td>
<td>• Short stature</td>
</tr>
<tr>
<td></td>
<td>• Distinguish between pre-renal, renal and post-renal failure</td>
<td></td>
<td>• Obesity</td>
</tr>
<tr>
<td></td>
<td>• Describe non-renal causes of edema</td>
<td></td>
<td>• Anorexia</td>
</tr>
<tr>
<td></td>
<td>• Describe initial fluid management in acute kidney injury and list the</td>
<td></td>
<td>• Turner’s syndrome</td>
</tr>
<tr>
<td></td>
<td>indications for dialysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Describe non-renal causes of edema</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Describe initial fluid management in acute kidney injury and list the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>indications for dialysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Describe the normal pattern of growth velocity in infants, children</td>
<td></td>
<td>• Describe the approach to the evaluation of fever without a focus</td>
</tr>
<tr>
<td></td>
<td>and adolescents</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Describe the typical and atypical timing and progression of sexual</td>
<td></td>
<td>• Describe the normal pattern of growth velocity in infants, children and</td>
</tr>
<tr>
<td></td>
<td>maturation</td>
<td></td>
<td>adolescents</td>
</tr>
<tr>
<td></td>
<td>• Differentiate abnormal growth from normal growth variants</td>
<td></td>
<td>• Calculate target heights (predicted adult height) based on parental height</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate correct plotting of growth parameters and calculation</td>
<td></td>
<td>• Discuss the clinical signs of normal puberty and their usual progression</td>
</tr>
<tr>
<td></td>
<td>of body mass index</td>
<td></td>
<td>• List clinical features which would suggest growth hormone deficiency,</td>
</tr>
<tr>
<td></td>
<td>• Calculate target heights (predicted adult height) based on parental</td>
<td></td>
<td>syndromic or a genetic disorder in a child with short stature (SGY2)</td>
</tr>
<tr>
<td></td>
<td>height (SGY2)</td>
<td></td>
<td>• Describe the sequence of investigations for children with short stature</td>
</tr>
<tr>
<td></td>
<td>• Discuss the clinical signs of normal puberty and their usual</td>
<td></td>
<td>(SGY2)</td>
</tr>
<tr>
<td></td>
<td>progression (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• List clinical features which would suggest growth hormone</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>deficiency, syndromic or a genetic disorder in a child with short</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>stature (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Define the different types of child maltreatment (physical abuse,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>sexual abuse, neglect and emotional abuse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• List the risk factors for child maltreatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Recognize normal and abnormal patterns of injury in children</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Describe characteristics of limb pain which would suggest child</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>abuse (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Define the different types of child maltreatment (physical abuse,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>sexual abuse, neglect and emotional abuse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• List the risk factors for child maltreatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Recognize normal and abnormal patterns of injury in children</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Describe characteristics of limb pain which would suggest child</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>abuse (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop a systematic method to approaching acute limb pain (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• List at least 4 important factors for the diagnosis of acute limb</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pain (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop a systematic method to approaching acute limb pain (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• List at least 4 important factors for the diagnosis of acute limb</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pain (SGY2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>Relevant Conditions or Concepts</td>
<td>Relevant Activities</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>Transient synovitis</td>
<td>Developmental dysplasia of the hip</td>
<td>Osgood Schlatter disease</td>
<td></td>
</tr>
<tr>
<td>Developmental dysplasia of the hip</td>
<td>Legg Calve Perthes disease</td>
<td>Slipped capital femoral epiphysis</td>
<td></td>
</tr>
<tr>
<td>Legg Calve Perthes disease</td>
<td>Growing pains</td>
<td>Osgood Schlatter disease</td>
<td></td>
</tr>
<tr>
<td>Growing pains</td>
<td>Osgood Schlatter disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osgood Schlatter disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lymphadenopathy</td>
<td>Reactive / benign</td>
<td>Describe how to clinically differentiate normal from pathological lymph nodes in children (SGY1)</td>
<td></td>
</tr>
<tr>
<td>Reactive / benign</td>
<td>Cervical adenitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cervical adenitis</td>
<td>Malignancy (leukemia / lymphoma)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malignancy (leukemia / lymphoma)</td>
<td>Mononucleosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mononucleosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Murmur and/or cyanosis</td>
<td>Innocent murmurs (Stills and venous hum)</td>
<td>Classify congenital heart defects according to pathophysiology</td>
<td></td>
</tr>
<tr>
<td>Innocent murmurs (Stills and venous hum)</td>
<td>VSD</td>
<td>Describe the structural and dynamic changes that occur following birth in the cardiovascular system, including closure of the ductus arteriosus (SGY1)</td>
<td></td>
</tr>
<tr>
<td>VSD</td>
<td>Coarctation of the aorta</td>
<td>Compare the etiology of cardiac arrest in children vs. adults (SGY2)</td>
<td></td>
</tr>
<tr>
<td>Coarctation of the aorta</td>
<td>ASD</td>
<td>Describe an approach to resuscitating an acutely ill infant (SGY2)</td>
<td></td>
</tr>
<tr>
<td>ASD</td>
<td>Tetralogy of Fallot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetralogy of Fallot</td>
<td>Transposition of the great arteries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transposition of the great arteries</td>
<td>PDA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonatal Jaundice</td>
<td>Biliary atresia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biliary atresia</td>
<td>TORCH infections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TORCH infections</td>
<td>Neonatal hepatitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonatal hepatitis</td>
<td>Sepsis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>Breast feeding jaundice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast feeding jaundice</td>
<td>Breast milk jaundice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast milk jaundice</td>
<td>Physiologic jaundice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiologic jaundice</td>
<td>Birth trauma/bruising</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birth trauma/bruising</td>
<td>Isoimmune/hemolysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isoimmune/hemolysis</td>
<td>Kernicterus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kernicterus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newborn</td>
<td>Prematurity</td>
<td>Describe the necessary components of a complete perinatal history</td>
<td></td>
</tr>
<tr>
<td>Prematurity</td>
<td>Birth asphyxia</td>
<td>Discuss the complications of premature birth</td>
<td></td>
</tr>
<tr>
<td>Birth asphyxia</td>
<td>Congenital infections</td>
<td>Describe the etiology and effects of birth asphyxia</td>
<td></td>
</tr>
<tr>
<td>Congenital infections</td>
<td>Respiratory distress</td>
<td>Describe the purpose of neonatal screening and be aware of the Ontario newborn screening program</td>
<td></td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>Neonatal sepsis</td>
<td>Discuss the transition from intrauterine to extraterine environment with respect to:</td>
<td></td>
</tr>
<tr>
<td>Neonatal sepsis</td>
<td>Large and small for gestational age</td>
<td>Temperature regulation</td>
<td></td>
</tr>
<tr>
<td>Large and small for gestational age</td>
<td>Developmental dysplasia of the hip</td>
<td>Cardiac / respiratory physiology</td>
<td></td>
</tr>
<tr>
<td>Developmental dysplasia of the hip</td>
<td>Undescended testes</td>
<td>Glucose regulation</td>
<td></td>
</tr>
<tr>
<td>Undescended testes</td>
<td>Ambiguous genitalia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambiguous genitalia</td>
<td>Absent red reflex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent red reflex</td>
<td>Vitamin K deficiency</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Hypotonia
- Neonatal transition
- Trisomy 21
- Fetal alcohol spectrum disorder
- Abnormal newborn screen
- Hypotonia

**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 primary and permanent teeth
- 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
<table>
<thead>
<tr>
<th>Section</th>
<th>Topics</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallor (anemia)</td>
<td>Iron deficiency, Hemolysis, Inherited hemoglobinopathies (sickle cell anemia and thalassemia), Leukemia</td>
<td>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)</td>
</tr>
<tr>
<td>Rash</td>
<td>Cellulitis, Varicella, Atopic dermatitis, Diaper dermatitis, Viral exanthems, Scarlet fever, Scabies, Acne, Impetigo, Seborrhea, Urticaria, Drug Eruption</td>
<td>Describe common infections characterized by fever and rash</td>
</tr>
<tr>
<td>Respiratory Distress / Cough</td>
<td>Pneumonia, Bronchiolitis, Asthma, Cystic fibrosis, Pertussis, Croup, Foreign body, Epiglottitis, Tracheitis, Congestive heart failure, Anaphylaxis</td>
<td>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 with bronchiolitis (SGY1)</td>
</tr>
<tr>
<td>Seizure / Paroxysmal event</td>
<td>Febrile vs. non-febrile seizure, General vs. focal seizure, Status epilepticus, ALTE, Syncope, Breath-holding spell</td>
<td>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)</td>
</tr>
<tr>
<td>Sore ear</td>
<td>Otitis media, Otitis externa</td>
<td>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</td>
</tr>
</tbody>
</table>
### Describe the basic principles of pharmacology for antibiotic use and analgesia in ear infections

| 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  
| • 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)  

| Vomiting | • Gastroesophageal reflux disease  
|          | • Pyloric stenosis  
|          | • Malrotation / volvulus  
|          | • Intussusception  
|          | • Gastroenteritis  

### 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)
CARDIOLOGY OBJECTIVES

A. Knowledge
a) The student will be able to:
   i. Describe the presentation of congestive heart failure in the infant;
   ii. Provide a differential diagnosis of cyanosis in a newborn;
   iii. Describe an approach to paediatric chest pain.

B. Skills
a) The student will demonstrate competence in:
   i. Differentiation between innocent and organic murmurs;
   ii. Recognize signs of heart failure;
   iii. Demonstrate an approach to interpretation of an ECG in a child.

1) Take an appropriate history from a child and parent with cardiac symptoms.
2) Explain the nature of an innocent murmur to a patient’s family/families.
3) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
4) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
5) Perform a physical examination without causing the patient embarrassment.
6) Adapt treatment plans to the individual with consideration for the patient’s age, general health, special needs, expectations, cultural background, progress, or changes in condition.
7) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
8) Recognize risk factors and be able to counsel patients on risk reduction.
9) List conditions requiring endocarditis precautions.
10) Appreciate impact of adolescent hypertension and obesity.
11) Identify the rights and legal responsibilities of physicians to patients and the community.
12) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
13) Apply the concept of cost-effectiveness to public health interventions.
14) Demonstrate skill in self-directed learning by:
   a. Recognizing the limitation of evidence in some areas of clinical decision making.
   b. Conduct internet or database searches to resolve clinical controversies.
   c. Ability to identify areas of deficiency in one's own knowledge and skills.
   d. Ability to find appropriate educational resources.
   e. Ability to evaluate personal learning progress.
   f. Ability to use new knowledge in the care of patients.
15) Determine the validity and applicability of published data through critical appraisal.
16) The multi-disciplinary team in cardiology includes the following: Nurses, social workers, technologists, as well as cardiologists. The student will be able to:
17) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
18) Collaborate effectively with patients and families without having to take charge.
19) Demonstrate skill in finding common ground when differences of opinion exist.
20) Establish effective relationships with colleagues and other member of the health care team by:
   a. Considering their suggestions and criticisms.
   b. Tactful handling of differences of opinion.
21) Demonstrates the ability to place the needs of patients and families first.
22) Demonstrates honesty and trustworthiness in assessment, study and learning.
23) Demonstrates responsibility and respect.
24) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
25) Be willing to seek help, advice or consultation when needed.
26) Respond to personal and family needs and develop effective support systems.
27) Understand the role of the nurse practitioner in providing family-centred care.
28) Demonstrate rational use of cardiac investigations.
29) Understand prioritization of outpatient bookings.
30) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
31) Use the concepts of evidence-based medicine to guide patient care decisions.
32) Identify potential conflict between individual and population interests and seek advice from others.
33) Assess the effectiveness of practice and engage in continuous quality improvement.

**CLINICAL PHARMACOLOGY OBJECTIVES**

1) To appreciate the importance of developmental pharmacology in planning therapy for children.
2) To have an approach to developing a therapeutic plan for a child.
3) To have an approach to the management of suspected adverse drug reactions in children.
4) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
6) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
7) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
8) Recognize risk factors and be able to counsel patients on risk reduction.
9) Identify the rights and legal responsibilities of physicians to patients and the community.
10) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
11) Apply the concept of cost-effectiveness to public health interventions.
12) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
13) Determine the validity and applicability of published data through critical appraisal.
14) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
15) Collaborate effectively with patients and families without having to take charge.
16) Demonstrate skill in finding common ground when differences of opinion exist.
17) Establish effective relationships with colleagues and other members of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
18) Demonstrates the ability to place the needs of patients and families first.
19) Demonstrates honesty and trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.
22) Recognize personal biases and ensure that they do not interfere with the patient’s best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

CRITICAL CARE OBJECTIVES

MEDICAL EXPERT
- Correctly interpret a blood gas.
- Interpret a CXR and provide a differential diagnosis for the findings.
- Demonstrate the ability to rapidly ascertain the clinical stability of the acutely ill child and to prioritize therapeutic interventions.
- Be able to list a differential diagnosis and initial management plan for a child presenting in a collapsed clinical state.
- Define respiratory insufficiency and failure, and demonstrate an understanding of some of the management strategies.
- Demonstrate an understanding of when, why and how ventilatory support (non-invasive and invasive) may be used to support the critically ill patient.
- Demonstrate an understanding of the basic physiologic principles, differential diagnosis and initial management of shock.
- Explain the principles of infection control in the ICU setting and understand the role that resistant organisms play in the clinical course of critically ill children
- Describe the potential presentations, emergency investigation and initial management of metabolic disorders in pediatric patients in the critical care setting.
- Demonstrate an appreciation of the patterns of physiological dysfunction associated with multi-system failure.
- Demonstrate an understanding of the pathophysiology of traumatic brain injury, and principles of management of elevated intracranial pressure

COMMUNICATOR
- Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations
- Develop relationships with patients characterized by compassion, empathy, respect, and genuineness
- Demonstrate the ability to clearly communicate in layman terms to patients and their families using concise explanations that are easily understandable
- Demonstrate skill in finding common ground when differences of opinion exist
COLLABORATOR
- Demonstrating a willingness to collaborate with the patient/family about patient care/health management
- Demonstrate the ability to work as part of a multidisciplinary team when caring for a critically ill patient
- Demonstrate the ability to work effectively as a member of a team, (whether acting as its leader or as a participant)
- Establish effective relationships with colleagues and other member of the health care team by
- Considering their suggestions and criticisms
- Tactfully handling differences of opinion

MANAGER
- Apply the concept of cost-effectiveness to public health interventions
- Be able to thoughtfully and judiciously investigate a critically ill patient and not order a random battery of tests
- Be willing to seek help, advice or consultation when needed
- Respond to personal and family needs and develop effective support systems

PROFESSIONAL
- Perform a physical examination without causing the patient embarrassment.
- Be punctual in attending organized unit activities, e.g., hand-over rounds, journal club and teaching sessions
- In dress and behavior to project a professional image
- Demonstrates honesty and trustworthiness in assessment, study and learning
- Demonstrates responsibility and respect
- Recognize personal biases and ensure that they do not interfere with the patient's best interests
- Identify potential ethical issues that may complicate patient care and seek advice from others

HEALTH ADVOCATE
- Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition
- Recognize risk factors and be able to counsel patients on risk reduction and prevention strategies
- Describe the determinants of health and apply them appropriately to enhance individual and community well being
- Demonstrates the ability to place the needs of patients and families first.

SCHOLAR
- Demonstrate skill in self-directed learning by:
- Ability to identify areas of deficiency in one's own knowledge and skills
- Ability to find appropriate educational resources
- Ability to evaluate personal learning progress
- Ability to use new knowledge in the care of patients
- Determine the validity and applicability of published data through critical appraisal
- Incorporate the concepts of evidence-based medicine to guide patient care decisions but recognize the limitations of this pattern of practice (particularly in pediatrics where evidence is lacking)
ENDOCRINOLOGY OBJECTIVES

1) Physiology and pathophysiology of the hypothalamic-pituitary axis and endocrine glands.
2) Physiology of pancreatic β-cell function and pathology leading to Type 1 diabetes.
3) Emergency management of DKA.
4) Pathophysiology and risk factors associated with Type 2 diabetes mellitus.
5) Normal growth patterns.
6) Assessment of benign vs pathologic short stature.
7) Understanding of routine indications for growth hormone therapy (GHD, Turner Syndrome).
8) Physiology of normal pubertal development.
9) Assessment of delayed or precocious puberty.
10) Performance of Tanner Staging.
11) Physiology and management of thyroid disorders.
12) Physiology and management of congenital adrenal hyperplasia.
13) Assessment for complications of obesity.
14) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
15) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
16) Perform a physical examination without causing the patient embarrassment.
17) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
18) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
19) Recognize risk factors and be able to counsel patients on risk reduction.
20) Identify the rights and legal responsibilities of physicians to patients and the community.
21) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
22) Apply the concept of cost-effectiveness to public health interventions.
23) Demonstrate skill in self-directed learning by:
   a. Ability to identify areas of deficiency in one's own knowledge and skills.
   b. Ability to find appropriate educational resources.
   c. Ability to evaluate personal learning progress.
   d. Ability to use new knowledge in the care of patients.
24) Determine the validity and applicability of published data through critical appraisal.
25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
26) Collaborate effectively with patients and families without having to take charge.
27) Demonstrate skill in finding common ground when differences of opinion exist.
28) Establish effective relationships with colleagues and other member of the health care team by:
   a. Considering their suggestions and criticisms.
   b. Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems.
35) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.

36) Use the concepts of evidence-based medicine to guide patient care decisions.

37) Identify potential conflict between individual and population interests and seek advice from others.

38) Assess the effectiveness of practice and engage in continuous quality improvement.

GASTROENTEROLOGY OBJECTIVES

1) Create a basic diagnostic and therapeutic plan for the following paediatric gastrointestinal symptoms:
   a. Dysphagia
   b. Abdominal pain
   c. Constipation
   d. Diarrhea
   e. Failure to thrive as it pertains to the GI tract

2) List common indications for endoscopic techniques in children and contrast these from the common indications in adults.

3) Assess the contribution of psychological factors to gastrointestinal symptoms and diseases in children.

4) Conduct patient-centered interviews, that in addition to collecting a complete history of the pertinent concerns, but also explores the patient's feelings, ideas, impact on function, and expectations.

5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.

6) Perform a physical examination without causing the patient embarrassment.

7) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

8) Demonstrate skill in oral and written communication of information with clear, concise explanations that are understandable to patients.

9) Recognize risk factors and be able to counsel patients on risk reduction.

10) Identify the rights and legal responsibilities of physicians to patients and the community.

11) Describe the determinants of health and apply them appropriately to enhance individual and community well being.

12) Apply the concept of cost-effectiveness to public health interventions.

13) Demonstrate skill in self-directed learning by:
   a. Ability to identify areas of deficiency in one's own knowledge and skills.
   b. Ability to find appropriate educational resources.
   c. Ability to evaluate personal learning progress.
   d. Ability to use new knowledge in the care of patients.

14) Determine the validity and applicability of published data through critical appraisal.

15) Demonstrate the ability to work effectively as a member of a team, as participant or leader.

16) Collaborate effectively with patients and families without having to take charge.

17) Demonstrate skill in finding common ground when differences of opinion exist.

18) Establish effective relationships with colleagues and other members of the health care team by:
   a. Considering their suggestions and criticisms.
   b. Tactful handling of differences of opinion.

19) Demonstrates the ability to place the needs of patients and families first.
20) Demonstrates honesty and trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.
22) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

HAEMATOLOGY/ONCOLOGY OBJECTIVES

1) Knowledge
   a. Demonstrate an understanding and be able to discuss the pathophysiology, differential diagnosis, investigation and management plan for the following conditions:
      1. Thrombocytopenia
      2. Anemia (especially iron deficiency and thalassemia)
      3. Acute Lymphoblastic Leukemia
      4. Mediastinal Mass
      5. Abdominal Mass
      6. Common bone tumors (osteosarcoma, ewing sarcoma)
      7. Bleeding Disorders (thrombocytopenia, hemophilia, Von Willebrand’s disease)
   b. Demonstrate a basic understanding of the prognostic variables that distinguish between high risk and standard risk ALL
   c. Demonstrate a basic understanding of the common presenting symptoms and signs of a brain tumor
   d. To develop a basic understanding of the structure and function of the formed elements of blood and understanding of normal values with age.
   e. Demonstrate a basic understanding and approach to common hematologic and oncologic emergencies including tumor lysis syndrome, mediastinal mass, fever and neutropenia, and transfusion reactions.
   f. To develop an understanding of the social, familial and personal effects of childhood cancer on the child an family

2) Skills
   a. Demonstrate an ability to perform an age-appropriate history and physical examination in the oncology patient.
   b. Demonstrate an approach to the interpretation of a CBC and differential, INR, and PTT.
   c. Demonstrate an understanding of the different diagnostic tests and procedures in pediatric hematology/oncology patients including bone marrow aspirates and biopsies as well as lumbar punctures.
   d. Lumbar puncture in child/adolescent

3) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
4) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
5) Perform a physical examination without causing the patient embarrassment.
6) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
7) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
8) Recognize risk factors and be able to counsel patients on risk reduction.
9) Identify the rights and legal responsibilities of physicians to patients and the community.
10) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
11) Apply the concept of cost-effectiveness to public health interventions.
12) Demonstrate skill in self-directed learning by:
   a. Ability to identify areas of deficiency in one's own knowledge and skills.
   b. Ability to find appropriate educational resources.
   c. Ability to evaluate personal learning progress.
   d. Ability to use new knowledge in the care of patients.
13) Determine the validity and applicability of published data through critical appraisal.
14) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
15) Collaborate effectively with patients and families without having to take charge.
16) Demonstrate skill in finding common ground when differences of opinion exist.
17) Establish effective relationships with colleagues and other member of the health care team by:
   e. Considering their suggestions and criticisms.
   f. Tactful handling of differences of opinion.
18) Demonstrates the ability to place the needs of patients and families first.
19) Demonstrates honesty and trustworthiness in assessment, study and learning.
20) Demonstrates responsibility and respect.
21) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
22) Be willing to seek help, advice or consultation when needed.
23) Respond to personal and family needs and develop effective support systems
24) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
25) Use the concepts of evidence-based medicine to guide patient care decisions.
26) Identify potential conflict between individual and population interests and seek advice from others.
27) Assess the effectiveness of practice and engage in continuous quality improvement.

NEONATOLOGY OBJECTIVES

The elective student should be able to:
1) Correctly assign and interpret a newborn APGAR score.
2) Assess the need for and correctly apply bag-and-mask ventilation to a newborn.
3) Examine a newborn infant and identify problems related to the transition from intrauterine to extrauterine life including respiratory distress, cardiac, metabolic, and thermal stress.
4) Assess the risk for neonatal sepsis, evaluate and initiate therapy for neonatal sepsis.
5) Determine the growth parameters of a newborn infant.
6) Discuss the short and long-term risks associated for an infant who is small for gestational age (SGA) or large for gestational age (LGA).
7) Describe the presentation of common neonatal problems such as trisomy 21, common congenital anomalies, sepsis, hypoglycaemia, transient tachypnea of the newborn, meconium aspiration syndrome, neonatal abstinence syndrome.

8) Participate in rounds and ask questions appropriate for level of education.

9) Write progress notes on patients that communicate accurately the patient’s condition and ongoing plans.

10) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.

11) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.

12) Perform a physical examination without causing the patient embarrassment.

13) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

14) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.

15) Recognize risk factors and be able to counsel patients on risk reduction.

16) Identify modifiable risks for prematurity and other neonatal problems.

17) Participate in discharge planning meetings.

18) Develop appropriate follow-up plans with support of the health care team.

19) Apply knowledge of the determinants of health to the newborn population.

20) Identify the rights and legal responsibilities of physicians to patients and the community.

21) Describe the determinants of health and apply them appropriately to enhance individual and community well being.

22) Apply the concept of cost-effectiveness to public health interventions.

23) Demonstrate skill in self-directed learning by:
   a. Ability to identify areas of deficiency in one's own knowledge and skills.
   b. Ability to find appropriate educational resources.
   c. Ability to evaluate personal learning progress.
   d. Ability to use new knowledge in the care of patients.

24) Determine the validity and applicability of published data through critical appraisal.

25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.

26) Collaborate effectively with patients and families without having to take charge.

27) Demonstrate skill in finding common ground when differences of opinion exist.

28) Establish effective relationships with colleagues and other member of the health care team by:
   a. Considering their suggestions and criticisms.
   b. Tactful handling of differences of opinion.

29) Demonstrate the ability to place the needs of patients and families first.

30) Demonstrate honesty and trustworthiness in assessment, study and learning.

31) Demonstrate responsibility and respect.

32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.

33) Be willing to seek help, advice or consultation when needed.

34) Respond to personal and family needs and develop effective support systems.

35) Discuss the impact of specialized neonatal care on newborn outcome.

36) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.

37) Use the concepts of evidence-based medicine to guide patient care decisions.

38) Identify potential conflict between individual and population interests and seek advice from others.

39) Assess the effectiveness of practice and engage in continuous quality improvement.
NEPHROLOGY OBJECTIVES

1) Knowledge
   a) Demonstrate an understanding and be able to discuss the pathophysiology, differential diagnosis, investigation and management plan for the following conditions:
      1. Hydronephrosis
      2. Urinary tract infections
      3. Hematuria
      4. Proteinuria
      5. Hypertension
      6. Acute kidney injury
      7. Chronic kidney disease ***
      8. Renal calculi ***
   b) Demonstrate a basic understanding of the theory and indications for renal replacement therapy including transplantation. ***
   c) Describe how chronic illness can influence a child’s growth and development, educational achievement, and psychosocial functioning.
   d) Have an appreciation of the impact that chronic illness has on the family’s emotional, economic and psychosocial functioning.
2) Skills
   a) Demonstrate an ability to perform an age-appropriate history and physical examination in the nephrology patient.
   b) Demonstrate an approach to the interpretation of nephrology lab tests including urine microscopy.
   c) Demonstrate an understanding of the different diagnostic tests and procedures in pediatric nephrology including renal U/S, VCUG, renal scan (static and dynamic), renal angiography and renal biopsy.

*** 4 week elective only.

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
d. Ability to use new knowledge in the care of patients.

11) Determine the validity and applicability of published data through critical appraisal.

12) Demonstrate the ability to work effectively as a member of a team, as participant or leader.

13) Collaborate effectively with patients and families without having to take charge.

14) Demonstrate skill in finding common ground when differences of opinion exist.

15) Establish effective relationships with colleagues and other member of the health care team by:
   a. Considering their suggestions and criticisms.
   b. Tactful handling of differences of opinion.

16) Demonstrates the ability to place the needs of patients and families first.

17) Demonstrates honesty and trustworthiness in assessment, study and learning.

18) Demonstrates responsibility and respect.

19) Recognize personal biases and ensure that they do not interfere with the patient's best interests.

20) Be willing to seek help, advice or consultation when needed.

21) Respond to personal and family needs and develop effective support systems.

22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.

23) Use the concepts of evidence-based medicine to guide patient care decisions.

24) Identify potential conflict between individual and population interests and seek advice from others.

25) Assess the effectiveness of practice and engage in continuous quality improvement.

NEUROLOGY OBJECTIVES

1) Conduct a history/interview of a presenting problem within the context of pediatric neurology, addressing issues specific to pediatric neurology.

2) Conduct an examination of the nervous system in pediatric patients of various ages.

3) To understand and incorporate the concept of neuro-localization in problem formulation and determining a differential diagnosis.

4) Demonstrate knowledge of the presentation and distinguishing clinical features of common pediatric paroxysmal disorders such as epilepsy, headaches, syncope and tics.

5) Demonstrate knowledge of typical clinical features of common pediatric neurology chronic conditions such as cerebral palsy, epilepsy, acquired brain injury, muscular dystrophy and developmental delay.

6) Become familiar with an approach to evaluate a CT scan of the brain.

7) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.

8) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.

9) Perform a physical examination without causing the patient embarrassment.

10) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

11) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.

12) Recognize risk factors and be able to counsel patients on risk reduction.

13) Identify the rights and legal responsibilities of physicians to patients and the community.

14) Describe the determinants of health and apply them appropriately to enhance individual and community well being.

15) Apply the concept of cost-effectiveness to public health interventions.
16) Demonstrate skill in self-directed learning by:
   a. Ability to identify areas of deficiency in one's own knowledge and skills.
   b. Ability to find appropriate educational resources.
   c. Ability to evaluate personal learning progress.
   d. Ability to use new knowledge in the care of patients.

17) Determine the validity and applicability of published data through critical appraisal.

18) Demonstrate the ability to work effectively as a member of a team, as participant or leader.

19) Collaborate effectively with patients and families without having to take charge.

20) Demonstrate skill in finding common ground when differences of opinion exist.

21) Establish effective relationships with colleagues and other member of the health care team by:
   a. Considering their suggestions and criticisms.
   b. Tactful handling of differences of opinion.

22) Demonstrates the ability to place the needs of patients and families first.

23) Demonstrates honesty and trustworthiness in assessment, study and learning.

24) Demonstrates responsibility and respect.

25) Recognize personal biases and ensure that they do not interfere with the patient's best interests.

26) Be willing to seek help, advice or consultation when needed.

27) Respond to personal and family needs and develop effective support systems

28) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.

29) Use the concepts of evidence-based medicine to guide patient care decisions.

30) Identify potential conflict between individual and population interests and seek advice from others.

31) Assess the effectiveness of practice and engage in continuous quality improvement.

C) **Type of Clinical Experience**
   - In Patient ( )
   - Out Patient ( )
   - Both (xx)

D) **Night and Weekend Call**
   - Yes (xx)
   - No ( )

E) **Evaluation Procedure**
   - Written Exam ( )
   - Oral Exam ( )
   - Informal Clinical Evaluation (xx)

F) **Number of Students Accepted**
   - One student per block per sub-specialty.

G) **Other Comments, Regulations or Expectations**
Supervisors:
Paediatric Emergency Medicine - Dr. K. Helleman
Neonatology - Dr. D. Yuen
Clinical Pharmacology - Dr. M.J. Rieder
Paediatric Cardiology - Dr. H. Rosenberg
Paediatric Critical Care - Dr. R. Singh
Paediatric Endocrinology - Dr. R. Stein
Paediatric Gastronenterology - Dr. J. Howard
Paediatric Clinical Genetics - Dr. S. Goobie
Paediatric Haemotology/Oncology - Dr. S. Zelcer
Paediatric Nephrology - Dr. J. Grimmer
Paediatric Neurology - Dr. C. Campbell
Paediatric Respirology - Dr. A. Price
DESCRIPTION

A) General Description

A four-week intensive experience in medical genetics with emphasis on participation in all the relevant clinical activities of the Medical Genetics Program of Southwestern Ontario. This will include participation in general genetics, prenatal metabolic, and cancer genetics clinics, newborn screening, clinic conferences, rounds and ward consultations. In addition to the clinical experience, provisions can also be made for laboratory experience, (e.g. cytogenetics observation) if the student wishes. The student will have available library and reference resources in medical genetics as well as audiovisual learning aids. Students should also attend at least 1-2 clinics with genetic counsellors. Educational activities include attendance at genetics grand rounds and fetal development rounds, participation in weekly metabolic multidisciplinary rounds and genetics interesting case rounds. Individual teaching sessions are arranged with staff geneticists.

B) Objectives

1. To allow a fourth year student an opportunity for clinical exposure to the specialty of medical genetics not provided in the medical curriculum at the University of Western Ontario. This should be particularly valuable for students anticipating careers in Family Medicine, Paediatrics, Obstetrics, Internal Medicine and Medical Genetics.

2. For a student considering a career in medical genetics, this experience will acquaint him/her with this relatively new specialty and facilitate personal decisions about postgraduate medical education and career opportunities.

3. The trainee will learn to draw a pedigree, obtain family history, be familiar with basic clinical dysmorphology skills, and develop an approach for common genetic referrals.

1) Construct a three generation pedigree.
2) Obtain a complete medical history with emphasis on information relevant to the presenting problem and differential diagnosis. Conduct a detailed physical examination with attention to accurate physical measurements and documentation of dysmorphic features.
3) Utilize web-based resources (e.g., PubMed, OMIM and Genetests) to access current information about known genetic disorders, to generate a differential diagnosis, to determine availability of genetic testing.
4) To understand the application of molecular, cytogenetic and metabolic testing.
5) Recognize the characteristic features associated with common genetic disorders.
6) Explain the significance of a positive newborn screen, integrated prenatal screen, or antenatal ultrasound finding.
7) Apply knowledge of various inheritance patterns in counseling patients about recurrence risk.
8) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
9) Develop relationships with patients characterized by compassion, empathy, respect, and
genuineness, demonstrating a willingness to collaborate with the patient about management.
10) Demonstrate skill in communication of information with clear, concise explanations that are
understandable to patients.
11) Recognize risk factors and be able to counsel patients on risk reduction.
12) Identify the rights and legal responsibilities of physicians to patients and the community.
13) Describe the determinants of health and apply them appropriately to enhance individual and
community well being.
14) Apply the concept of cost-effectiveness to public health interventions.
15) Demonstrate skill in self-directed learning by:
   a. Ability to identify areas of deficiency in one's own knowledge and skills.
   b. Ability to find appropriate educational resources.
   c. Ability to evaluate personal learning progress.
   d. Ability to use new knowledge in the care of patients.
16) Determine the validity and applicability of published data through critical appraisal.
17) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
18) Collaborate effectively with patients and families
19) Establish effective relationships with colleagues and other member of the health care team by:
   a. Considering their suggestions and criticisms.
   b. Tactful handling of differences of opinion.
20) Demonstrates an understanding of "family-centered care". Demonstrates honesty and
   trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.
22) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic
   rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

C) Type of Clinical Experience
   In Patient (   )
   Out Patient (   )
   Both (xx)

D) Night and Weekend Call
   Yes (   )
   No (xx)
   Although there is no formal on-call commitment, we encourage students to participate in consults
   as well as follow up of in-house patients.

E) Evaluation Procedure
   Written Exam (   )
   Oral Exam (   )
   Informal Clinical Exam (xx)
   Also based on presentations (case presentations and subject review) made by the student.
F) **Number of Students Accepted**
One student each month.