

PAEDIATRICS & MEDICAL GENETICS

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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

Neonatology	- 1 student per block	- 2
Paediatric Emergency Medicine	- 1 student per block	- 2
Paediatric Cardiology	- 1 student per block	- 2
Paediatric Critical Care	- 1 student per block	- 2
Paediatric Endocrinology	- 1 student per block	- 2
Paediatric Gastroenterology	- 1 student per block	- 2
Medical Genetics	- 1 student per block	- 2
Paediatric Haematology/Oncology	- 1 student per block	- 2
Paediatric Nephrology	- 1 student per block	- 2
Paediatric Neurology	- 1 student per block	- 2
Paediatric Respiriology	- 1 student per block	- 2

ONLY permitted to have a total of TWO subspecialty electives within the lottery.

(May be allowed to add additional blocks during the add/drop period with permission from the department.)

NOTE: 4 - week electives can be arranged in these subspecialties, subject to paediatric department approval (during the Add/Drop period)

* 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**

Clinical Presentation	Key Conditions*	Foundational Knowledge	Additional Guidance
Abdominal Pain & Abdominal Mass	Appendicitis Constipation Functional abdominal pain Neuroblastoma Ovarian torsion Pregnancy Wilm's tumor	<ul style="list-style-type: none"> • Describe the anatomy, physiology and embryology of the gastrointestinal, genitourinary and reproductive systems • Relate locations and patterns of abdominal pain to basic anatomy and physiology • Describe normal stooling patterns and the influence of diet • Describe the differences between upper and lower intestinal obstruction and their clinical manifestations 	<ul style="list-style-type: none"> • 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)

		<ul style="list-style-type: none"> Identify investigations that may be used in the evaluation of abdominal pain 	
Acutely Ill Child	<p>Acute abdomen Burn Diabetic ketoacidosis / Diabetes mellitus Meningococemia Poisoning / intoxication Shock Trauma</p>	<ul style="list-style-type: none"> List toxic agents that can cause altered level of consciousness and describe their mechanisms of action Describe common toxidromes Explain the effect of hyperglycemia on fluid, electrolyte and acid-base status Describe the basic principles of pharmacology used in the management of diabetic ketoacidosis Describe the pathophysiology of glucose homeostasis and the consequences of hyperglycemia Describe how the physiology of the cardiopulmonary systems impacts the vital signs in different age groups Describe the anatomic differences between the pediatric and adult airway Recognize that a primary respiratory event can lead to cardiac arrest in the pediatric population Define shock and describe the pathophysiology of four broad categories of shock: hypovolemic, distributive, cardiogenic and neurogenic Recognize that body surface area and degree of burn injury impact fluid management in the pediatric population Recognize that acute illness may lead to multisystem organ dysfunction 	
Adolescent Health Issues	<p>Disordered eating Psychosocial history (HEADDSS) Pubertal development Sexual health Sexually transmitted infections Substance use and abuse</p>	<ul style="list-style-type: none"> Recognize adolescence as a unique developmental phase of the paediatric population Describe the typical and atypical timing and progression of sexual maturation Conduct a structured adolescent psychosocial history Describe factors that positively and negatively impact adolescent health Describe risk factors for and the impact of high-risk behaviours on adolescent health 	

		<ul style="list-style-type: none"> Describe the physiologic consequences of disordered eating 	
Altered LOC	<p>Encephalitis Head Injury Hypoglycemia Metabolic disease</p>	<ul style="list-style-type: none"> Describe the anatomy and physiology of the central and peripheral nervous systems Describe in basic terms the pathophysiology of brain injury Describe how the brain maintains consciousness, how unconsciousness occurs and the differences between unconsciousness and sleep Name and classify the most common CNS pathogens, based on organism type and area of brain commonly affected List toxic agents that can cause altered level of consciousness and describe their mechanisms of action Discuss the indications for the use of the different modalities available to assess neurologic structure and function Describe metabolic and electrolyte abnormalities that cause altered level of consciousness 	<ul style="list-style-type: none"> Describe the pathophysiology of concussion and the protocol for return to sport Describe the different clinical presentations of inborn errors of metabolism
Bruising / Bleeding	<p>Hemophilia Idiopathic thrombocytopenic purpura Leukemia</p>	<ul style="list-style-type: none"> Describe the mechanism of hemostasis: platelet plug formation, coagulation cascade and clot stabilization Demonstrate an approach to the interpretation of coagulation studies Describe the indications, contraindications and complications of blood products and their administration 	
Dehydration	<p>Hyponatremia / hypernatremia Mild / moderate / severe dehydration</p>	<ul style="list-style-type: none"> Describe the fluid composition of the body, the body water compartments and the normal movement of fluids and electrolytes between compartments Describe clinical signs and symptoms of dehydration Describe principles of rehydration, both oral and intravenous 	
Development / Behavioural / Learning Problems	<p>Attention deficient disorders Autism spectrum disorder Cerebral palsy Fetal alcohol spectrum disorder</p>	<ul style="list-style-type: none"> Apply basic knowledge of neuroanatomy to interpret findings of a pediatric neurodevelopmental examination Define the 5 developmental domains used in describing children's development: gross 	<ul style="list-style-type: none"> Describe typical patterns of social-emotional development Recognize major deviations from the normal range of

	Global delay Gross motor delay Learning disability Speech / language delay	motor, fine motor, speech & language, cognitive and social emotional <ul style="list-style-type: none"> List major age-related developmental milestones through age 5 Recognize that prenatal, perinatal and postnatal factors may influence development Recognize the importance of early identification and intervention for developmental, behavioural and learning problems 	development and behavior <ul style="list-style-type: none"> 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	Celiac disease Cow's milk protein allergy Gastroenteritis Hemolytic uremic syndrome Inflammatory bowel disease Toddler's diarrhea	<ul style="list-style-type: none"> Describe the pathophysiology of osmotic and secretory diarrhea Classify diarrhea based on the underlying pathophysiological mechanisms Recognize that some forms of diarrhea are manifestations of systemic illness 	<ul style="list-style-type: none"> Describe the effect of IBD or other chronic disease on normal development in school age, adolescent and young adult patients (SGY2)
Edema	Nephritic syndrome Nephrotic syndrome Renal failure	<ul style="list-style-type: none"> Describe the fluid composition of the body, the body water compartments and the normal movement of fluids and electrolytes between compartments Describe the anatomy and physiology of the renal system Describe non-renal causes of edema List the cardinal features of glomerulonephritis and the most common causes in the pediatric population Describe the pathophysiology of glomerular disease Interpret results of a urinalysis and other tests of kidney function Distinguish between pre-renal, renal and post-renal causes of acute kidney injury Distinguish between transient, benign, and pathologic proteinuria 	
Eye Issues	Absent red reflex Amblyopia Conjunctivitis Normal vision development Periorbital / orbital cellulitis	<ul style="list-style-type: none"> Describe the anatomy and physiology of the eye and related structures Describe normal visual development Describe the pathophysiology and risk factors of common diseases 	

	Strabismus Visual changes	<p>affecting the eye and related structures</p> <ul style="list-style-type: none"> • Demonstrate assessment of extraocular movements and identify the corresponding cranial nerves • List and classify the pathogens causing infections of the eye and related structures • Describe the basic principles of pharmacology used in the management of common eye infections 	
Fever	<p>Fever in different age groups (<1mo, 1-3 mo, >3 mo) Kawasaki disease Meningitis Occult bacteremia /sepsis Urinary tract infection Viral</p>	<ul style="list-style-type: none"> • Describe the pathophysiology of thermoregulation and define fever • List and classify common pathogens that cause fever • List non-infectious causes of fever • Describe the modes of transmission of infectious agents and means of prevention • Demonstrate competence in the application of universal precautions • List and classify the common pathogens causing urinary tract infections in children • Describe the basic principles of pharmacology used in the management of fever and infectious and non-infectious febrile conditions 	<ul style="list-style-type: none"> • Compare and contrast the presenting signs and symptoms of an UTI in an infant, preschooler and school aged child (SGY1) • Describe the difference in CSF findings in various CNS infections • List preventive strategies, complications and long term prognosis for childhood meningitis (SGY2)
Genitourinary Complaints (hematuria, dysuria, polyuria, frequency, pain)	<p>Balanitis Enuresis Phimosis Testicular torsion Vesicoureteral reflux Vulvovaginitis</p>	<ul style="list-style-type: none"> • Describe the anatomy and physiology of the genitourinary system • Identify infectious and non-infectious causes of urinary complaints • Distinguish between glomerular versus non-glomerular hematuria • Apply basic principles of pharmacology and indications for drugs used in the management of urinary tract infections • Describe the pathophysiology of male genital complaints, including phimosis, balanitis and testicular torsion • Describe the pathophysiology of infectious and non-infectious vulvovaginitis • Differentiate between diurnal and nocturnal enuresis, and when enuresis requires treatment 	<ul style="list-style-type: none"> • Define vesicoureteral reflux and describe the different grades • Describe the natural history and a treatment approach for nocturnal enuresis (SGY1)
Growth Problems	<p>Constitutional delay Failure to thrive</p>	<ul style="list-style-type: none"> • Describe how the endocrine system contributes to pubertal 	

	Familial short stature Obesity Turner syndrome	development and vertical (linear) growth <ul style="list-style-type: none"> Describe the physiology of pre- and post-natal growth Describe the normal pattern of growth velocity in the fetus, infants, children, and adolescents Differentiate abnormal growth from normal growth variants Describe the physiological and psychological consequences of obesity and malnutrition 	
Headache	Brain tumor Concussion Increased intracranial pressure Migraine	<ul style="list-style-type: none"> Describe the anatomy and pain sensing structures of the head and neck Classify headaches by etiology and explain the pathophysiology of each type Outline the pathophysiology of increased intracranial pressure (ICP) Describe the tissue origins and pathophysiology of central nervous system tumors Apply the basic principles of pharmacology in the management of headache 	
Inadequately explained injury (Child abuse)	Abusive head trauma Domestic violence Neglect Physical abuse Sexual abuse	<ul style="list-style-type: none"> Define the different types of child maltreatment List the risk factors for child maltreatment Recognize normal and abnormal patterns of injury in children 	
Limp/ Extremity Pain	Bone tumor Growing pains Juvenile idiopathic arthritis Legg Calve Perthes disease Osgood Schlatter disease Osteomyelitis Post-infectious arthritis Reactive arthritis Rheumatic fever Septic arthritis Slipped capital femoral epiphysis Transient synovitis Trauma / injury	<ul style="list-style-type: none"> Identify the basic anatomy and physiology of the musculoskeletal system Describe the growth and development of bones, joints, and surrounding soft tissues Describe the components of normal gait Explain the infectious and non-infectious causes of musculoskeletal pain and inflammation Define innate and humoral immunity and describe the pathophysiology of autoimmune diseases Summarize the process of repair and healing of musculoskeletal injury Describe the basic principles of pharmacology used in the management of inflammation and pain 	

Lymphadenopathy	Cervical adenitis Lymphoma Mononucleosis Reactive lymphadenopathy	<ul style="list-style-type: none"> Describe the anatomy and physiology of the lymphatic system Compare and contrast the physical characteristics and distribution of normal versus abnormal lymphatic tissue Distinguish between infectious and non-infectious causes of lymphadenopathy in children Name and classify pathogens that cause lymphadenopathy in children 	<ul style="list-style-type: none"> Describe how to clinically differentiate normal from pathological lymph nodes in children (SGY1)
Mental Health Concerns	Anxiety Depression School refusal Suicidality	<ul style="list-style-type: none"> Identify risk factors for suicide and self-harm behaviour Describe the clinical presentations of depressive and anxiety disorders, recognizing they may present differently in different age groups Identify reasons for school refusal 	
Murmur	Congenital heart disease Innocent murmur	<ul style="list-style-type: none"> Describe the anatomy of the cardiovascular system, explain the basic physiology of cardiac function, and be able to relate the anatomy and physiology to the cardiac physical exam finding Describe the basic embryology of the heart and major vessels and how abnormalities in embryological development lead to the development of congenital heart defects Describe the structural and dynamic changes that occur following birth in the cardiovascular system, including closure of the ductus arteriosus Describe the classification system of murmurs 	
Neonatal Jaundice	Biliary atresia Breast feeding jaundice Breast milk jaundice Hemolytic anemia Kernicterus Physiologic jaundice	<ul style="list-style-type: none"> Describe liver anatomy and the physiology of bilirubin metabolism and excretion Describe the functions of the liver and interpret tests of liver function, hepatocellular function and cholestasis Differentiate between conjugated and unconjugated hyperbilirubinemia Describe blood group type and antigens, and explain the mechanism whereby blood group incompatibility can affect bilirubin metabolism 	
Newborn	Abnormal newborn screen Birth Trauma	<ul style="list-style-type: none"> Describe basic embryology and fetal development and how alternations 	

	<p>Congenital infections Cyanosis Depressed newborn Hypoglycemia Hypothermia Hypotonia / floppy newborn Large for gestational age Neonatal abstinence syndrome Newborn physical exam (normal, abnormal) Prematurity Respiratory distress Sepsis Small for gestational age Trisomy 21 Vitamin K deficiency</p>	<p>may lead to congenital abnormalities</p> <ul style="list-style-type: none"> List factors affecting fetal growth Describe normal and abnormal patterns of fetal growth Define pre-term, term, and post-term gestation Identify prenatal risk factors for adverse outcomes in a newborn Describe the processes of transition and adaptation from intrauterine to extrauterine life Define asphyxia and describe its biochemical and physiological effects on the newborn at birth Describe glucose homeostasis in the newborn Describe the extrinsic and intrinsic factors that predispose newborns to infection 	
Pallor/ Anemia	<p>Hemoglobinopathies Hemolysis Iron deficiency</p>	<ul style="list-style-type: none"> Describe the anatomy and physiology of the hematopoietic system, including origin, function and structure of each major blood component Describe iron metabolism as it relates to heme production Classify hematologic disease in terms of production, destruction and consumption Describe the physiologic consequences to anemia Identify signs and symptoms of hematologic diseases Demonstrate an approach to the interpretation of a CBC and differential and iron studies 	<ul style="list-style-type: none"> 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	<p>Acne Cellulitis Diaper rashes Drug eruption Eczema Henoch Scholein Purpura Impetigo Scabies Scarlet fever Seborrhea dermatitis Urticaria Viral exanthems</p>	<ul style="list-style-type: none"> Describe the anatomy and function of the skin and related structures Describe and classify rashes Name and classify common pathogens that cause rashes Describe the basic principles of pharmacology used in the management of common pediatric rashes 	

<p>Respiratory distress / Cough</p>	<p>Anaphylaxis Asthma Bronchiolitis Congestive heart failure Croup Cystic fibrosis Epiglottitis Foreign body Pertussis Pneumonia Status asthmaticus Tracheitis</p>	<ul style="list-style-type: none"> • Describe the anatomy and physiology of the respiratory system and relate them to the respiratory physical exam • Describe the differences between upper and lower airway conditions and their clinical manifestations • Describe the physiology of restrictive and obstructive lung disease • Describe the pathophysiology of infectious and non-infectious respiratory conditions • Identify symptoms and signs of respiratory disease and recognize adventitious sounds • Name and classify pathogens that cause respiratory disease in children • Describe basic principles of pharmacology used in the management of common respiratory conditions • Describe basic principles of pharmacology used in the management of common respiratory conditions 	<ul style="list-style-type: none"> • 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)
<p>Seizure / Paroxysmal event</p>	<p>Arrhythmia Breath-holding spell Brief Resolved Unexplained Event Febrile vs. non-febrile seizure General vs. focal seizure Status epilepticus Syncope</p>	<ul style="list-style-type: none"> • Describe the neurophysiology of electrical and chemical signal transmission • Discuss the pathophysiology of seizure activity • Identify neurologic and non-neurologic causes of paroxysmal events • Apply basic principles of pharmacology in the management of seizure • Know that arrhythmias in children that may present with sudden collapse and identify common arrhythmias of childhood 	<ul style="list-style-type: none"> • 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)
<p>Sore Ear</p>	<p>Otitis externa Otitis media</p>	<ul style="list-style-type: none"> • Describe the anatomy and physiology of the ear and related structures • Describe the pathophysiology and risk factors of common diseases affecting the ear and related structures • Name and classify the pathogens that cause ear infections in children • Describe the basic principles of pharmacology for antibiotic use and analgesia in ear infections 	

Sore Throat / Sore Mouth	Dental disease Oral thrush Peritonsillar abscess Pharyngitis Retropharyngeal abscess / cellulitis Stomatitis	<ul style="list-style-type: none"> Describe the anatomy and physiology of the throat and oral cavity Describe the pathophysiology and risk factors of common disease affecting the throat and oral cavity Name and classify the pathogens that cause common diseases of the throat and oral cavity Describe the basic principles of pharmacology used in the management of common throat and oral cavity infections 	
Vomiting	Gastroesophageal reflux / Gastroesophageal reflux disease Intestinal atresia Intussusception Malrotation/volvulus Pyloric stenosis	<ul style="list-style-type: none"> Describe the physiology of gastrointestinal tone and motility Describe the basic embryogenesis of the intestinal tract and how alterations in normal embryogenesis lead to the development of obstructive lesions of the intestinal tract with particular focus on malrotation and atresias Relate bilious vomiting to the anatomy of the gastrointestinal tract Identify non-gastrointestinal causes of vomiting Describe metabolic and electrolyte alterations that occur with vomiting Apply basic principles of pharmacology and indications for drugs used in the management of vomiting 	
Well Child Care (newborn, infant, child)	Anticipatory guidance Circumcision Crying / colic Dental health Discipline / Parenting Growth – Head circumference, Height, Weight, Body mass index Healthy active living Hearing Hypertension Immunizations Injury prevention Normal development Nutrition & Feeding Sleep issues Social-economic / cultural / home / environment Sudden Infant Death	<ul style="list-style-type: none"> Describe the use and limitations of tools to support periodic health supervision Describe the principles of screening tests Describe how cultural values influence health and health care interactions Take a family history to identify increased risk for inherited conditions and discuss mechanisms and patterns of inheritance Describe the nutritional requirements for growth and maintenance of health for infants, children and adolescents Compare breast and formula feeding Describe how vaccines work and the diseases they prevent 	

	Syndrome	<ul style="list-style-type: none"> • Summarize the benefits and contraindications of immunizations • Describe the epidemiology of childhood injury • Describe age-related measures to reduce injury in the pediatric population • Identify risk factors for hearing impairment • Describe normal dental development • Describe the pathophysiology of and risk factors for dental caries and gingival disease • Explain the concept of reinforcement and factors that influence learning and behavior • Describe sleep physiology and stages, sleep needs for different age groups, and best practices for sleep hygiene • List the effects of sleep deprivation • List risk factors for and strategies that decrease the risk of Sudden Infant Death • Describe the concept of developmental surveillance 	
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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 fontanelles 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.

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 member 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 and 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.

*** 2 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. Students are permitted a total of two separate sub-specialties within the lottery.

G) Other Comments, Regulations or Expectations

Supervisors:

Paediatric Emergency Medicine	- Dr. K. Helleman
Neonatology	- Dr. D. Yuen
Paediatric Cardiology	- Dr. H. Rosenberg
Paediatric Critical Care	- Dr. R. Singh
Paediatric Endocrinology	- Dr. R. Stein
Paediatric Gastroenterology	- Dr. K. Bax
Paediatric Clinical Genetics	- Dr. S. Goobie
Paediatric Haematology/Oncology	- Dr. A. Zorzi
Paediatric Nephrology	- Dr. J. Grimmer
Paediatric Neurology	- Dr. C. Campbell
Paediatric Respiriology	- Dr. A. Price

DEPARTMENT: PAEDIATRICS - MEDICAL GENETICS ELECTIVE
COORDINATOR: Dr. S. Goobie
OFFICE LOCATION: Children's Hospital of Western Ontario
PHONE: 519-685-8140

DESCRIPTION

A) General Description

A two-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 dysmorphism 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/elective block