



Developmental Pediatrics

Division Staff:	<p>Dr. John Andersen, Interim Director Division of Developmental Pediatrics, Facility Chief Child Health Glenrose Rehabilitation Hospital, Zone Section Chief Neurodevelopmental Pediatrics Alberta Health Services</p> <p>Dr. Julia Ackland-Snow</p> <p>Dr. Brenda Clark</p> <p>Dr. Angela Currie</p> <p>Dr. Shirley Dobrofsky, Child Psychiatry</p> <p>Dr. Cara Dosman, Coordinator/Primary Preceptor Junior and Senior General Pediatrics Resident Rotations</p> <p>Dr. Sabrina Eliason, Program Director Developmental Pediatrics Program, Visiting Resident Rotation Primary Preceptor</p> <p>Dr. Lindsay Hubenig, Pediatric Rehabilitation Fellowship Program Director</p> <p>Dr. Lisa Lemieux, Division Lead Medical Education</p> <p>Dr. Janessa Mah</p> <p>Dr. Matthew Prowse, Coordinator/Primary Preceptor Physical Medicine & Rehabilitation Rotation</p> <p>Dr. Carmen Rasmussen, Psychology, Research</p> <p>Dr. Charlene Robertson</p> <p>Dr. Kyle Sue, Family Medicine Resident Elective and Medical Student Primary Preceptor</p> <p>Dr. Joe Watt</p> <p>Dr. Lonnie Zwaigenbaum, Zone Clinical Department Head Child Health, Alberta Health Services, Director Autism Research Centre, Glenrose Rehabilitation Hospital</p>
Affiliate Staff from DoP:	<p>Dr. Nicole Anderson (Neonatology), Educational Lead, Northern Alberta Neonatal Follow-Up Clinic</p> <p>Dr. Matthew Hicks (Divisional Director for Neonatal-Perinatal Care)</p> <p>Dr. Sandy Hodgetts (OT, Rehabilitation Medicine), Rotation Coordinator for Research</p> <p>Dr. Shailly Jain (Genetics)</p> <p>Dr. Simone Lebeuf (Adolescent Medicine), Chair Developmental Pediatrics Competence Committee</p> <p>Dr. Janette Mailo (Neurology)</p> <p>Dr. Mosarrat Qureshi (Neonatology)</p> <p>Dr. Amber Reichert (Neonatology)</p> <p>Dr. Jennifer Toye (Neonatology)</p> <p>Dr. Leigh Wincott (General Pediatrics)</p>
Contact:	<p>Ms. Desiree Pawliuk</p> <p>Medical Education Program Coordinator</p> <p>phone 780.735.6097</p> <p>fax 780.735.7907</p> <p>email devpeds@ualberta.ca</p>

PREAMBLE



1. The Developmental Pediatric rotation for general pediatric residents is a mandatory two-block rotation located at the Glenrose Rehabilitation Hospital, and additional community and outreach clinics under the supervision of attending physicians (see below). The rotation includes attendance at a variety of multidisciplinary and single-discipline clinics, interactive teaching, case conferences and grand rounds. Pediatric neurology residents complete the first block of the rotation in their PGY1 year.
2. The first block of the rotation will be during the PGY1 year (ideally during the Foundations Stage of Training). It will focus on a thorough understanding of typical development and its variations, the initial approach to common developmental conditions, basic developmental pediatric assessment (history and physical examination) skills and basic communication skills, especially related to history-taking. Residents will be given the opportunity of simulation practice scoring of standardized developmental screens and managing positive screen results, including local referrals and parenting guidance. This block will access the general assessment clinics at the Glenrose Rehabilitation Hospital including but not limited to [Infant and Preschool Assessment Service (IPAS) and School-Aged Neurodevelopmental Assessment Clinic (SNAC)], GRH Physical Medicine Clinic (which provides follow-up for children with cerebral palsy) and the community-based assessment clinics of the Learning & Development Clinic and Behaviour Clinic.
3. Residents are expected to use and consolidate this knowledge and skills in the interval PGY2 year/early blocks of their Core of Discipline training.
4. The second block will be completed in the PGY3 year (Core Stage of training). Senior residents will work with increasing independence as consultant pediatricians in a variety of secondary and tertiary developmental assessment and treatment clinics, and function as the pediatrician on multi-disciplinary teams. The focus will be on medical management, including use of medication, delivering news and counseling families about development conditions, and coordinating care for the complex developmental patient. Senior residents will be given the opportunity of simulation practice scoring school skills samples and managing below grade academic subjects, including local referrals and parenting guidance.
5. At the completion of both blocks of the rotation, i.e., PGY3/Core of Discipline, it is expected that residents will be aware of risk factors for developmental disorders. They will have acquired the necessary assessment skills to determine whether a developmental or physical activity limitation (disability) may be present, as well as how to use the allied medical professions to help assess children with suspected developmental disabilities. Residents will be aware of the types of community resources for children with developmental and physical disabilities, will know how and when to access them, and will be able to counsel and support families of disabled children. As part of the Scholar role, senior residents may at times supervise junior learners, e.g. medical students.
6. Subspecialty electives are available to residents wishing to further develop skills in specific areas, i.e. pediatric rehabilitation medicine, behavioural pediatrics, or with respect to specific conditions, i.e. autism, FASD, etc.

7. Research opportunities for residents are available within Developmental Pediatrics.
8. The fulfillment of specific CanMEDS objectives for the two-block rotation is expected at the completion of the second learner block. For learners on the Competency by Design curriculum, Entrustable Professional Activities (EPAs) have been mapped to the two rotations (see below).

COMMUNITY RESOURCES/OUTREACH CLINICS

1. Some topics common in General Pediatrics (often listed under "Behavioural Pediatrics") will be taught during **General** or/and **Ambulatory Pediatric** rotations, particularly those that relate to the infant and young child. These include the **crying infant, infantile colic, common pediatric sleep problems (including nightmares and night terrors), temper tantrums, and counseling parents on typical growth, development and behaviour with provision of anticipatory guidance**. They are expected to practice developmental screening skills in this setting.
2. The **Edmonton Hospital Workers (EHS) Child Care Society** is an accredited early learning setting and childcare program operated at the Glenrose Rehabilitation Hospital for staff working at the Glenrose and Royal Alexandra Hospital sites. The Society has given permission for learners to observe and learn about typically developing toddlers and preschoolers.
3. The **East Edmonton Health Centre Learning & Development Clinic** provides assessment and follow-up for preschool and school-aged children with developmental-behavioural problems, with access to mental health therapists and other supports. There is also a secondary level behaviour clinic at the **Misericordia Hospital**.
4. Some physician staff provide **on-site consulting** for students with developmental disabilities at **community programs and schools** in Edmonton and in other cities and towns in northern Alberta.
5. Other outreach clinics in **Red Deer, Fort McMurray, Camrose, Grande Prairie, GRIT (Get Ready for Inclusion Today), Broxton Park School, Elves Special Needs Society, and Rosecrest Home** are held regularly.

SPECIAL FACILITIES AND SERVICES

- a) Facilities for the comprehensive assessment and care of children with cognitive and physical impairments.

The **East Edmonton Health Centre Learning & Development Clinic** is a clinic where residents will encounter preschool and school-aged children with suspected developmental delays or difficulty with school learning combined with behaviour regulation/behaviour/mental health problems. Children with similar presentations are seen at the **Misericordia Hospital Behaviour Clinic**. Children with complex developmental concerns or physical impairment may be referred to the **Glenrose Rehabilitation Hospital** for tertiary level multidisciplinary team assessments and

follow-up. Specific assessment clinics are scheduled for spina bifida, neuromuscular diseases, connective tissue diseases, brain injury, and scoliosis.

There is an inpatient pediatric rehabilitation ward (Unit 201) at the Glenrose Rehabilitation Hospital for children following complex orthopedic surgeries or acute brain injury management.

- b) Facilities for the study and management of behavioural and developmental problems.

The **Division of Developmental Pediatrics**, along with Pediatric Neurology, is a part of **Pediatric Neurosciences** within the Department of Pediatrics, Stollery Children's Hospital. The Division includes the Section of Pediatric Rehabilitation Medicine and the Section of Developmental & Behavioural Pediatrics and is located at the Glenrose Rehabilitation Hospital, the regional rehabilitation center for Central and Northern Alberta, the Northwest Territories, and Northern British Columbia. The Glenrose has excellent inpatient, outpatient, and day programs serving both adults and children. There are infant, preschool and school-aged intervention programs on site. Current clinical services to children at the Glenrose include: Northern Neonatal Follow-up Program; Complex Pediatric Therapies Follow-Up Program; the assessment of specific learning disorders, Attention Deficit Hyperactivity Disorder (ADHD), Tourette disorder, Fetal Alcohol Spectrum Disorder (FASD), family dysfunction, other psychiatric disorders, neuromuscular diseases, speech and language disorders, autism spectrum disorder, intellectual disability, brain injury and hearing impairment. These assessments are provided by multiple disciplines and subspecialties, with linkages to the Faculties of Medicine, Rehabilitation Medicine, Nursing and Education at the U of A. Research in many areas of rehabilitation is ongoing at the Glenrose, funded both internally and externally.

The regional Learning & Development Program is described above.

Residents will have opportunity for involvement with the assessment and therapy of a wide variety of secondary and tertiary-level clinical problems as well as exposure to clinical research. Teaching methods are varied and require resident participation. Faculty represents a wide cross-section of disciplines in the field, including rehabilitation, nursing, psychiatry, neurology, and developmental pediatrics with primary responsibility for the rotation held by Developmental Pediatrics.

ROTATION SPECIFIC OBJECTIVES: PGY1/Foundations "Developmental Junior" rotation

KNOWLEDGE

The resident will be able to demonstrate knowledge concerning:

- typical development and behaviour in infancy, childhood and adolescence in the following sectors: gross motor, fine motor, communication, cognitive, activity of daily living and social-emotional
- chronic health conditions in the context of Body Function and Structures; Activities;



Participation; Environmental Factors and Personal Factors as outlined in the World Health Organization International Classification of Functioning

- common developmental conditions listed as "Problems" section below
- common behavioural presentations of typically-developing children
- concepts of developmental surveillance, screening and assessment, and anticipatory guidance
- roles and domains of allied health professionals who may be involved in assessment of children with developmental and/or behavioural concerns

SKILLS

The resident will be able to demonstrate the following skills:

- use of a developmental screening instrument designed for office practice, such as the PEDS+PEDS:DM
- history questions for developmental surveillance during well-child care and for children presenting with non-developmental chief complaints
- complete developmental and pediatric history for children presenting with developmental and/or behavioural concerns
- complete general physical examination for the assessment of developmental and/or behavioural concerns, including anthropomorphic measures, screening for vision and hearing, initial approach to dysmorphism, and behavioural observations
- complete neurologic and musculoskeletal examination appropriate for age
- develop a sensitive approach to children with developmental and/or physical disabilities and to their families
- formulate a detailed and complete problem list including differential diagnosis and appropriate suggestions for further investigation and initial management

ROTATION SPECIFIC OBJECTIVES: PGY 3/Core "Developmental Senior" rotation

In addition to the rotation specific objectives for Year 1, the resident will demonstrate the following:

KNOWLEDGE

The resident will be able to demonstrate knowledge concerning:

- awareness of diagnostic, rehabilitative, and intervention plans, and types of community resources for children with disabilities
- indications, contraindications, and side effects of medications and other treatments for developmental and behavioural conditions
- the concept of standard scores and t-scores in the interpretation of developmental testing done by allied health professionals and educators
- common developmental conditions listed as "**Problems**" section below

SKILLS

The resident will be able to demonstrate the following skills:

- demonstrate a capacity for sampling of children's school skills
- complete an efficient physical exam, including neurologic and musculoskeletal exam



- and special maneuvers according to child presentation (e.g. range of motion)
- create a differential diagnosis of complex cases including identifying comorbidities, and formulating treatment plans (medication, rehabilitative, behavioural, community resources)
- understand and interpret common standardized tests used to assess development, such as the Wechsler Intelligence Scales for children and preschoolers
- understand and interpret commonly used behavioural questionnaires, e.g. the BASC (Behaviour Assessment Scales for Children), Conners Comprehensive Behavior Rating Scale and Vanderbilt Rating Scales
- establish and maintain cooperative interpersonal relationships with a multidisciplinary team, and participation in team conferences to formulate a diagnosis and management plan
- deliver the news of a developmental disability
- provide anticipatory guidance to parents regarding developmental and behavioural concerns with attention to available community support and resources
- all skills are expected to be at the level of a Consultant General Pediatrician

PROBLEMS

Please note: While the Problems below are general guidelines, any may be mastered across the Junior and/or Senior Rotations. While the Core Articles, Problems, and, in general, Learning Sessions are grouped as per below, the Clinics scheduled and Problems mastered may cross the Junior and/or Senior Rotations.

Over the Junior and Senior Developmental Pediatric Rotations, the resident, using the relevant knowledge and skills, will be able to *recognize, diagnose and initiate management* the following problems with or without associated comorbidities:

Priority Topics for the Junior Rotation

- Attention-Deficit/Hyperactivity Disorder
- Early Developmental Impairment/Intellectual Disability
- Autism Spectrum Disorder
- Cerebral Palsy
- Outcomes of Prematurity and Complex Therapies
- Sensory Impairments i.e. hearing impairment, visual impairment
- Common behavioural presentations in typically-developing children, including issues related to feeding, sleeping, toileting, tantrums, aggression, non-compliance, somatic complaints, school avoidance

Senior Residents, in addition to all Priority Topics for the Junior Rotation, would be expected to master the following at the time of completion of their Senior Developmental Pediatrics rotation:

- Behavioural sleep disorders
- Delays and Disorders of Speech and Language Development
- Specific Learning Disorders
- Fetal Alcohol Spectrum Disorder (FASD) and other congenital conditions

- Delays and Disorders of Gross and Fine Motor Development
- Movement Disorders i.e. Developmental Coordination Disorder, Tic Disorder, Tourette disorder
- Neuromuscular Conditions i.e. Duchenne Muscular Dystrophy
- Congenital malformations of the nervous system i.e. Spina Bifida
- Acquired Brain Injury

CanMEDS OBJECTIVES (in Developmental and Rehabilitation Pediatrics)

Role	Key Competencies
Medical Expert (clinical decision maker)	<ol style="list-style-type: none"> 1. Recognize the spectrum of typical development, developmental delays, and disorders. 2. Recognize levels of urgency of developmental concerns and appropriate timing/degree of intervention. 3. Have good understanding of etiology and assessment of common developmental conditions – see “Problems” above. 4. Have knowledge of types of community resources available to assist children with developmental conditions and their families. 5. Have knowledge of management of common developmental conditions and when it is appropriate to refer for tertiary care. 6. Be able to obtain a thorough accurate developmental history including relevant past medical history and family history; must be able to perform a complete physical examination, including neurological and MSK exams, with developmental sampling as appropriate; must be able to tailor examination to child’s age and developmental level, as well as being aware of ways to handle possible child distress or challenging behaviour. 7. Be able to formulate a detailed and complete problem list including differential diagnosis and appropriate suggestions for further investigation and initial management. 8. Have some familiarity with possible uses of technology for assisting persons with developmental conditions.
Communicator	<ol style="list-style-type: none"> 1. Be able to adjust history-taking methods to take into account historian’s role (child, parent, other caregiver, teacher, community clinicians, etc) and historian’s level of understanding. 2. Be able to obtain, in a sensitive manner, detailed historical information regarding the child’s development and behaviour, the discussion of which might arouse feelings of anger or grief in the caregiver. Be aware of clinical approaches for handling distressed and/or angry caregivers. 3. Be able to discuss findings with child’s caregiver at an



	<p>appropriate level for their understanding, as well as to be able to discuss findings with the child, when appropriate, and at child's developmental level; must recognize and address barriers to communication (i.e. language, education, etc.); must be familiar with caring approaches for "sharing the news" to families.</p> <p>4. Be able to discuss findings with:</p> <ul style="list-style-type: none">• referring physicians• other consultants needed for management of patient• other members of health care interdisciplinary team e.g. speech language pathologist, psychologist, physical therapist• community services <p>5. Maintain complete and accurate charts.</p> <p>6. Be able to prepare a consultant's report (at the level of a general pediatrician).</p>
Collaborator	<p>1. Be aware of levels of assessment of developmental conditions within the community and the pediatrician's role in providing primary, secondary and tertiary care.</p> <p>2. Understand the concept of collaboration and be able to take part in the interdisciplinary management of children with developmental conditions.</p> <p>3. Be able to act as liaison between primary care providers and other members of the health care team; must be able to assist in coordinating child's care.</p> <p>4. Have understanding of the types of professionals who may be involved in the care of children with developmental conditions and some knowledge of their roles in assessment and treatment.</p>
Leader	<p>1. Develop personal work habits that allow the efficient gathering and recording of complex information from a number of sources.</p> <p>2. Be able to adjust work style to function in an interdisciplinary setting.</p> <p>3. Have a basic understanding of triage of children with suspected developmental conditions in a way that makes best use of limited resources for assessment and intervention; must be aware of priorities and "red flags" for developmental conditions.</p> <p>4. Be familiar with the evidence for efficacy of common interventions used for children with developmental disabilities as well as having a framework for evaluating efficacy of newer treatments, including alternative and complementary therapies.</p>



	<ol style="list-style-type: none"> Understand the need for time management to achieve a balance amongst learning, working, health maintenance, personal growth and recreation, both as this applies to children with developmental conditions and to the physician's own life.
Health Advocate	<ol style="list-style-type: none"> Be able to weigh all determinants of health for the individual child including poverty, family support systems, family education, community opportunities, i.e. education, daycare, as well as impairment when completing a neurodevelopmental assessment. Understand how the child's impairment will impact his/her/their learning and future employment and work with the school and society to advocate to improve the outcome for the child. Understand the concept of "at risk" for developmental impairment from the point of view of socioeconomic status, parental education, as well as specific child previous illnesses and/or present impairment. Understand the role of child poverty in fostering developmental disabilities and advocate for improved societal health and wellbeing for children.
Scholar	<ol style="list-style-type: none"> Understand and put into practice the concept of life-long learning. Develop, implement, and document a personal learning plan within the subspecialty of neurodevelopmental/neuromotor pediatrics and beyond to general child health. Be able to identify weaknesses and personal learning style and establish a learning strategy for comprehensive continuing education. Understand the concept of evaluation of outcome of individual therapies and intervention programs. Be able to pose clinical research questions based on neurodevelopmental/neuromotor pediatrics and discuss with attending staff the methodological approach required to investigate such questions.
Professional	<ol style="list-style-type: none"> Act in an honest, compassionate and ethical fashion. Recognize personal limitations and act upon them to provide optimal patient care. Arrive on-time and well-prepared for all learning experiences (i.e. clinics, teaching sessions, meetings) with appropriate prior preparation as needed (i.e. chart review and/or pre-reading). Demonstrate personal responsibility for all assigned clinical



	<p>responsibilities by notification of clinic staff about any absences or expected late arrival times, which may have significant consequences for daily interdisciplinary assessment schedules. In the case of last-minute changes to schedule (i.e. acute illness or family emergency), this includes <u>directly notifying the assigned clinical preceptor, that person's administrative assistant, the primary preceptor/rotation coordinator, and the medical education program coordinator of the absence.</u></p> <p>5. Present themselves in a professional manner that facilitates developmental assessment of young children. This includes awareness of parents' and colleagues' perceptions and knowledge of assessment activities (e.g. leaning over, squatting on the floor to play with children) which may impact on choice of clothing and other aspects of personal appearance.</p> <p>6. Use technology in a professional manner to enhance patient care and learning.</p>
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Required EPA's Mapped to the Developmental Junior Rotation:

<i>Transition To Discipline 1</i>	<i>Performing and presenting a basic history and physical examination</i>
Foundations 5	Assessing, diagnosing, and managing patients with common pediatric problems
Foundations 9	Documenting clinical encounters
Core 7	Assessing and managing patients with developmental, behavioural, and school issues

Optional EPA's Mapped to the Developmental Junior Rotation:

<i>Foundations 8</i>	<i>Communicating assessment findings and management plans to patients and/or families</i>
Core 4	Diagnosing and managing pediatric patients



Core 5	<i>Providing ongoing management for patients with chronic conditions</i>
Core 6	<i>Assessing and managing patients with mental health issues</i>

Required EPA's Mapped to the Developmental Senior Rotation:

Foundations 8	Communicating assessment findings and management plans to patients and/or families
Foundations 9	Documenting clinical encounters

Core 3	Assessing patients with medical and/or psychosocial complexity
Core 6	Assessing and managing patients with mental health issues
Core 7	Assessing and managing patients with developmental, behavioural, and school issues

Optional Required EPA's Mapped to the Developmental Senior Rotation:

Core 5	<i>Providing ongoing management for patients with chronic conditions</i>
Core 10	<i>Leading discussions with patients, families and/or other health care professionals in emotionally charged situations</i>
Core 11	<i>Coordinating transitions of care for patients with medical or psychosocial complexity</i>
Core 14	<i>Providing teaching and feedback</i>
Transition to Practice 4	Leading family meetings and interprofessional team meetings