

**Pediatric Neurology Rotation Children’s & Women’s Health Centre of BC Rotation Manual**

# DESCRIPTION

Children's & Women's Health Centre of British Columbia (C&W) consists of B.C. Children's Hospital, B.C. Women's Hospital and Health Centre, and Sunny Hill Health Centre for Children. C&W has the largest maternal-fetal-newborn clinical service in Canada and is the major referral centre for acutely ill or injured children in B.C. C&W has more than 400 in-patient beds including pediatric and neonatal intensive care units

The Pediatric Neurology rotation consists of 4 weeks on the T6 Medical/Surgical ward at BC Children’s Hospital. This practicum will primarily focus on patients admitted under the neurology or neurosurgery services. The majority of admissions are due to epilepsy; however, other neurological conditions seen at this site may include migraines, stroke, encephalitis, and other various neuropathies. The Neurology inpatient service includes a multidisciplinary team with attending physicians, residents, medical students, pharmacists, nurses, psychologists, physiotherapists, occupational therapists, social workers and dietitians.

The pharmacist on T6 provides clinical services on weekdays only and is responsible for maintaining daily familiarity with medication regimens for all patients on the ward, through patient profile/chart review, discussions with patients, patients’ caregivers and nurses, and daily rounds with the Neurology team. The pharmacist sets patient care priorities based upon an assessment of individual patients’ likelihood of experiencing drug-related problems and identification of existing drug-related problems. The pharmacist develops and implements a care plan for priority patients, defines monitoring criteria, and evaluates outcomes of recommendations. Significant patient care events (e.g. medication history, pharmacokinetic evaluation, adverse reaction/drug interaction documentation, patient/family medication counselling) are documented in the patient’s health record. The pharmacist also provides drug information, in-service education, formulary and medication policy review and support to the nursing and medical staff.

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# GOAL

* The Resident will develop the organizational and clinical skills required to provide pharmaceutical care on a pediatric neurology ward.
* The Resident should be able to function effectively and independently in the pediatric neurology setting
* The Resident will integrate with the multidisciplinary team to provide effective patient care
* The Resident will become familiar with management of common pediatric neurological conditions

# LEARNING OBJECTIVES

Per those listed for all LMPS Direct Patient Care (DPC) Rotations, available on our Evaluation Outcomes page at [http://www.lmpsresidency.com/residents/resident-manual/evaluation-](http://www.lmpsresidency.com/residents/resident-manual/evaluation-outcomes) [outcomes](http://www.lmpsresidency.com/residents/resident-manual/evaluation-outcomes)

The expected level of resident performance by the completion of this 4-week rotation is outlined in the Direct Patient Care In-Training Evaluation of Resident (ITER).

# ROTATION-SPECIFIC OBJECTIVES

**Neurology:**

Discuss main principles of initiating, monitoring, and discontinuing antiepileptic drug (AED) therapy

* + Identify and manage adverse effects of AED therapy
  + Identify and manage potential drug interactions of AED therapy
  + Apply knowledge of AED therapy in clinical management of common seizure types and syndromes in children
  + Describe the key features of the ketogenic diet, the implications the diet has on medication selection, and the pharmacological treatments for adverse effects of the diet
  + Create patient-specific therapeutic plans including:
    1. Gather and organize patient medical information
    2. List and prioritize drug-therapeutic problems
    3. Compare and contrast therapeutic alternatives
    4. Develop goals of therapy
    5. Make and implement recommendations
    6. Create and implement monitoring plan
  + Apply knowledge about changes in pediatric parameters with age (e.g. dosing, pharmacodynamics and pharmacokinetics, etc) with respect to creating a therapeutic plan.
  + Demonstrate ability to communicate with health care team both verbally and in-writing.
  + Calculate pharmacokinetic parameters and make patient-specific recommendations about adjustment of drug doses.

The resident will encounter a variety of pediatric conditions and their pharmacotherapy (during patient care activities and discussions with the preceptor), which may include the following:

* Status epilepticus
* Refractory
* Home rescue
* Epilepsy
* Seizure types
* Epilepsy syndromes (e.g. infantile spasms, Dravet)
* Ketogenic diet
* PK monitoring for antiepileptic drugs
* Febrile seizures (complex)
* Headaches and migraines
* Stroke
* Meningitis
* Encephalitis
* Neurological autoimmune disorders
* Movement disorders

# RESIDENT’S OWN OBJECTIVES

Residents will identify several of their own learning objectives for the rotation. These should be documented in their ePortfolio prior to the start of the rotation, discussed with the preceptor on day 1 of the rotation, and assessed at the various evaluation points throughout the rotation.

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# REQUIRED ACTIVITIES

The resident will:

1. Provide pharmaceutical care to all assigned patients on the ward as per the objectives above. The resident’s patient load will be determined based on the resident’s previous experience and competence and will be modified at the discretion of the preceptor.
2. Conduct best possible medication histories for all patients under their care.
3. Provide discharge medication counselling and education for all patients under their care, facilitating seamless care by liaising with other pharmacists, physicians, BC Pharmacare, etc. as appropriate.
4. Meet with the preceptor briefly every morning to triage and identify patients for work-up.
5. Meet with the preceptor daily (for 1 to 2 hours) to present completed patient work-ups and discuss any patient-related issues, therapeutic controversies, and specific topics.
6. Discuss all written notes and recommendations with the preceptor prior to implementation, unless previously arranged with the preceptor.
7. Prepare/review two to three therapeutic topics per week by completing any assigned pre- readings and reviewing any associated pharmacotherapy or therapeutics. Topic discussions should be incorporated into the resident’s daily patient discussions with the preceptor. Didactic discussions are optional.
8. Prepare and deliver one journal club, nursing in-service or case presentation for the pharmacy staff at pharmacy education sessions.
9. Attend other weekly pharmacy education sessions and/or presentations.
10. Complete and submit any relevant procedure logs to the preceptor via one45 during the course of the rotation. Please see [http://www.lmpsresidency.com/residents/resident-](http://www.lmpsresidency.com/residents/resident-manual/procedure-logs) [manual/procedure-logs](http://www.lmpsresidency.com/residents/resident-manual/procedure-logs) for further details.

# COMMUNICATION EXPECTATIONS

1. The resident will discuss all recommendations with the preceptor prior to implementation, unless otherwise arranged with the preceptor.
2. The resident will discuss all written chart notes with the preceptor prior to placing them in the chart, with the exception of medication histories and allergy clarifications, unless otherwise arranged with the preceptor.
3. The resident will notify the preceptor in advance (i.e.: prior to the start of the rotation) of all required off-site activities (e.g.: ADS, BC Wide case presentations, etc.) and absences during the rotation.
4. The resident is encouraged to provide on-going, daily feedback to the preceptor to assist in enriching his or her own learning experience throughout the course of the rotation.

# PRECEPTOR RESPONSIBILITIES

The preceptor will:

1. Meet with the resident on day 1 of the rotation to discuss the goals and objectives of the rotation and work with the resident to develop a schedule for all rotation-specific activities and therapeutic discussions.
2. Clearly communicate expectations of the resident at the start of the rotation and throughout the rotation as required.
3. Provide the resident with a brief orientation and introduction to the pharmacy department, ward, and health care team.
4. Meet with the resident briefly every morning to triage and identify patients for work-up.
5. Meet with the resident daily (for 1 to 2 hours) to discuss and review all patients under the resident’s care, incorporating clinical and therapeutic topic discussions at least 2-3 times per week.
6. Be available to the resident in person or by phone at all times during the rotation.
7. Schedule a presentation date and time with the department and assist the resident in selecting their topic for their journal club/nursing in-service/case presentation at least 2 weeks in advance of the scheduled date.
8. Review and provide feedback on any relevant procedure logs submitted by the resident via one45 during the course of the rotation.
9. Provide informal feedback to the resident on their performance on a daily basis, and complete and discuss all required written evaluations with the resident by the completion of the rotation.

# EVALUATION PROCESSES

Guidance on Evaluation Policies and workflow are available at

<http://www.lmpsresidency.com/residents/resident-manual/evaluation-policies>

1. The resident will receive a written, formative evaluation at the midpoint of the rotation. This evaluation will take into account the rotation-specific objectives and the resident’s own learning objectives.
2. The resident will receive a written, summative evaluation at the end of their rotation. This evaluation will take into account the rotation-specific objectives and the resident’s own learning objectives.
3. The resident will receive continuous feedback throughout the rotation and this will be considered part of the evaluation process.
4. The resident will provide written evaluations of both the preceptor and the rotation and complete a written self-evaluation prior to the last day of the rotation.
5. The preceptor and resident will discuss their respective evaluations in person at midpoint and on the last day of the rotation.

# REQUIRED READING & RESOURCES

It is expected that the resident is able to independently research clinical topics as necessary within the primary literature and appropriate resources for the provision of pharmaceutical care during the practicum. Additional readings may be assigned during the rotation based on topics of discussion.

Neurology:

* + NICE Guidelines 2012. Epilepsies: Diagnosis and Management. Available: https://[www.nice.org.uk/guidance/cg137/resources/epilepsies-diagnosis-and-](http://www.nice.org.uk/guidance/cg137/resources/epilepsies-diagnosis-and-) management-pdf-35109515407813
  + Glauser T, Shinnar S, Gloss D et al. Evidence-Based Guideline: Treatment of Convulsive Status Epilepticus in Children and Adults: Report of the Guideline Committee of the American Epilepsy Society. Epilepsy Currents 2016; 16(1): 48-61. Available: <http://www.epilepsycurrents.org/doi/pdf/10.5698/1535-7597-16.1.48>
  + Patsalos PN, Berry DJ, Bourgeois BFD et al. Antiepileptic drugs—best practice guidelines for therapeutic drug monitoring: A position paper by the subcommission on therapeutic drug monitoring, ILAE Commission on Therapeutic Strategies. Epilepsia 2008; 49(7): 1239-1276. Available: <http://onlinelibrary.wiley.com/doi/10.1111/j.1528-> 1167.2008.01561.x/full

General Pediatrics:

* Wood AJ. Developmental Pharmacology – Drug Disposition, Action, and Therapy in Infants and children. N Engl J Med 2003; 349: 1157-1167