

*These training requirements apply to those who begin training on or after July 1, 2020.*

**NOTE:** *This document applies to residents in both adult and pediatric Neurology. Throughout this document, unless otherwise indicated, all clinical experiences are intended to refer to an experience with the patient population relevant to the resident's training stream: adult or pediatric.*

The following training experiences are required, recommended, or optional, as indicated:

## **TRANSITION TO DISCIPLINE (TTD)**

*The purpose of this stage is to provide an orientation to the Neurology residency program, including the hospital environment, with a focus on the inpatient neurology unit. In this stage, residents focus on assessing, presenting, and documenting basic neurological examinations, formulating a differential diagnosis, and suggesting investigations.*

### **Required training experiences (TTD stage):**

1. Clinical training experiences:
  - 1.1. Neurology inpatient and/or consultation service
  - 1.2. After-hours coverage of any inpatient unit and/or consultation to the emergency department
  
2. Other training experiences:
  - 2.1. Orientation to the university, hospital, and program, including:
    - 2.1.1. Local institutional policies and procedures, including postgraduate medical education (PGME) promotions, remediation, appeals, and professionalism policies
    - 2.1.2. Hospital system and resources
    - 2.1.3. Health records and computer access
    - 2.1.4. Handover policies
    - 2.1.5. Infection prevention and control
    - 2.1.6. Occupational health and safety
    - 2.1.7. Privacy legislation

- 2.1.8. Resident wellness and support systems
- 2.2. Formal orientation to and/or instruction in Competence by Design and curriculum, including observation, feedback, and assessment
- 2.3. Formal instruction in the basic and clinical sciences of Neurology
- 2.4. Grand rounds in Neurology

**Recommended training experiences (TTD stage):**

- 3. Other training experiences:
  - 3.1. Focused experience providing early training (e.g., boot camp) in:
    - 3.1.1. Basic neuroanatomy
    - 3.1.2. Neurological emergencies
    - 3.1.3. Clinical documentation
    - 3.1.4. Lumbar puncture
  - 3.2. Advanced Cardiovascular Life Support (adult stream only)
  - 3.3. Pediatric Advanced Life Support (pediatric stream only)
  - 3.4. Neonatal Resuscitation Program (pediatric stream only)
  - 3.5. Team building within neurology program, involving other residents, the residency program committee, and/or neurology faculty members
  - 3.6. Peer mentorship, such as pairing a junior and senior resident

**Optional training experiences (TTD stage):**

- 4. Clinical training experiences:
  - 4.1. Internal medicine inpatient service (adult stream only)
  - 4.2. Pediatrics inpatient service (pediatric stream only)
  - 4.3. Neurology clinic

**FOUNDATIONS OF DISCIPLINE (F)**

*In this stage, residents assess and provide initial management for patients with acute neurological emergencies and common neurological presentations. They learn to recognize and localize abnormal clinical findings and identify abnormal findings on neuroimaging. They learn to perform lumbar punctures.*

**Required training experiences (Foundations stage):**

1. Clinical training experiences:

1.1. Neurology

1.1.1. Inpatient unit

1.1.2. Consultation service to the emergency department and other inpatient services

1.1.3. Clinics

1.1.4. After-hours coverage

1.2. Internal Medicine (adult stream only)

1.2.1. Inpatient unit(s)

1.2.2. Consultation service

1.2.3. After-hours coverage

1.3. Pediatrics (pediatric stream only)

1.3.1. Inpatient unit(s)

1.3.2. Consultation service

1.3.3. After-hours coverage

1.4. Intensive care unit

1.4.1. Medical, surgical, or neurological (adult stream only)

1.4.2. Pediatric intensive care unit (pediatric stream only)

1.4.3. Neonatal intensive care unit (pediatric stream only)

2. Other training experiences:

2.1. Formal instruction in:

2.1.1. Approach to common neurological presentations

2.1.2. Neurological emergencies

2.1.3. Neurological procedures and techniques

2.1.3.1. Mental status examination, including standardized tests and tests of cortical function

2.1.3.2. Examination of the comatose patient

2.1.3.3. Neuro-ophthalmological examination

2.1.3.4. Movement disorder examination

2.1.3.5. Neuromuscular examination

2.1.3.6. Dix-Hallpike test

## NEUROLOGY TRAINING EXPERIENCES (2020)

- 2.1.3.7. Head impulse nystagmus and test of skew (HiNTS) examination
- 2.1.3.8. Functional examination
- 2.1.3.9. Neonatal examination (pediatric stream only)
- 2.1.3.10. Epley maneuver
  
- 2.1.4. Communication skills
  - 2.1.4.1. Approach to goals of care
  - 2.1.4.2. Challenging conversations
  
- 2.1.5. Critical appraisal skills
- 2.1.6. Quality improvement and patient safety
- 2.1.7. Research design and methodology
- 2.1.8. Teaching skills
  - 2.1.8.1. Supervising learners
  - 2.1.8.2. Giving feedback
  - 2.1.8.3. Presentation skills/public speaking
  
- 2.1.9. Social determinants of health
  - 2.1.9.1. Marginalized populations
  
- 2.1.10. Introduction to the effects of colonization on and the health care disparities of Indigenous Peoples of Canada
- 2.1.11. Screening for abuse and domestic violence
- 2.1.12. Wellness, including sleep and fatigue management, managing stress, building resilience, and preventing burnout
  
- 2.2. Grand rounds in Neurology
- 2.3. Critical appraisal activity, such as journal club
- 2.4. Quality assurance and improvement activities, such as morbidity and mortality rounds and case rounds
- 2.5. Development of a personalized learning plan for residency<sup>1</sup>

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<sup>1</sup> A “personalized learning plan for residency” is a document each resident prepares and updates regularly that provides evidence of participation in rounds, study plans, and maintenance of procedural skills.

**Recommended training experiences (Foundations stage):**

3. Clinical training experiences:
  - 3.1. Neurology longitudinal clinic<sup>2</sup>
  - 3.2. Neurosurgery
  - 3.3. Emergency medicine
  - 3.4. Psychiatry inpatient service and/or clinic
  
4. Other training experiences:
  - 4.1. Formal instruction in leadership skills, including:
    - 4.1.1. Delegation
    - 4.1.2. Managing and motivating a team
    - 4.1.3. Working effectively with other health care professionals

**Optional training experiences (Foundations stage):**

5. Clinical training experiences:
  - 5.1. Procedural clinics, including lumbar puncture and onabotulinum toxin A administration
  - 5.2. Neurology in the community setting
  - 5.3. Specialized clinics in Neurology
  - 5.4. Maternal Fetal Medicine
  - 5.5. Pain clinic
  - 5.6. Palliative care
  - 5.7. Developmental Pediatrics (pediatric stream only)
  - 5.8. Medical or pediatric subspecialty inpatient services or clinics
    - 5.8.1. Cardiology
    - 5.8.2. Endocrinology
    - 5.8.3. Genetics and metabolics
    - 5.8.4. Geriatric Medicine (adult stream only)
    - 5.8.5. Hematology
    - 5.8.6. Infectious Diseases
    - 5.8.7. Oncology

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<sup>2</sup> "Longitudinal clinic" refers to a clinic experience of at least one half day per month, with one or more preceptors, providing consultation and followup care. The experience is recommended to begin in the Foundations stage, and is required at Core and Transitions to Practice stages. The specialty committee recommends at least three years duration to allow adequate experience in the progression and/or evolution of neurologic disorders.

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5.8.8. Rheumatology

6. Other training experiences:

6.1. Formal instruction in:

6.1.1. Transition of patients from the pediatric to adult care setting

6.1.2. Neuropathology

6.2. Simulation training for lumbar puncture procedural skills

6.3. Development of a proposal for a quality improvement/assurance project

6.4. Completion of a structured assessment of clinical evaluation report (STACER)

**CORE OF DISCIPLINE (C)**

*In this stage, residents build on foundational skills and their approach to assessing and managing patients with acute and chronic neurological presentations in cases with greater complexity. They perform special neurological examination techniques and procedures and request and interpret reports of advanced investigations. They lead patient care teams and communicate with patients and families in complicated situations. This stage also includes maintaining clinical records and managing adverse events.*

**Required training experiences (Core stage):**

1. Clinical training experiences:

1.1. Neurology<sup>3</sup>

1.1.1. Inpatient clinical teaching unit or equivalent

1.1.2. Consultation service, including consultations to:

1.1.2.1. Inpatient services

1.1.2.2. Emergency department

1.1.2.3. Intensive care unit

1.1.3. Stroke service, including hyperacute and acute care

1.1.4. Clinics, general or specialized

1.1.5. Longitudinal clinic

1.1.6. Community setting (adult stream only)

1.1.7. After-hours coverage, including calls from the emergency department and consulting services

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<sup>3</sup> Inpatient and/or outpatient settings must provide experience in the breadth of Neurology, including the following domains: epilepsy, headache/pain, movement disorders, multiple sclerosis/neuro-inflammatory disorders, neuromuscular disorders, neuro-ophthalmology, neuroradiology, palliative care, stroke/vascular disorders, electroencephalography, and electromyography. In addition, for residents in the adult stream, there must be experiences with cognitive/behaviour disorders.

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- 1.2. Palliative care service
  - 1.3. Genetics and/or metabolic service (for pediatric stream)
  - 1.4. Developmental pediatrics service (for pediatric stream)
  - 1.5. Adult Neurology (for pediatric stream)
  - 1.6. Pediatric Neurology (for adult stream)
2. Other training experiences:
- 2.1. Formal instruction in:
    - 2.1.1. The biomedical and clinical sciences relevant to Neurology
    - 2.1.2. Communication in complex situations (e.g., medical assistance in dying, goals of care, conflict, high emotion)
    - 2.1.3. Principles and practices of quality improvement and patient safety
    - 2.1.4. Wellness, including sleep and fatigue management, managing stress, building resilience, and preventing burnout
    - 2.1.5. Leadership and management, including knowledge of and skills in conflict resolution, negotiation, and crucial conversations
  - 2.2. Grand rounds in Neurology
  - 2.3. Critical appraisal activity, such as journal club
  - 2.4. Quality assurance and improvement activities, such as morbidity and mortality rounds and case rounds
  - 2.5. Development of one or more scholarly projects within one of the following domains:
    - 2.5.1. Research
    - 2.5.2. Quality improvement/assurance
    - 2.5.3. Education
    - 2.5.4. Health advocacy
  - 2.6. Formal opportunities to teach junior learners
  - 2.7. Completion of a STACER
  - 2.8. Maintenance of a personalized learning plan for residency

**Recommended training experiences (Core stage):**

3. Clinical training experiences:
  - 3.1. Neuro-intensive care unit

- 3.2. Epilepsy monitoring unit
  - 3.3. Neuro-otology
  - 3.4. Autonomic neurology testing or clinical assessment
  - 3.5. Sleep disorders
  - 3.6. Neuro-oncology
  - 3.7. Neuro-palliative care
  - 3.8. Neuropathology
  - 3.9. Neurology consultation to offsite providers and/or patients (e.g., telephone, telemedicine)
  - 3.10. Physical Medicine and Rehabilitation
  - 3.11. Neurology in the community setting (pediatric stream only)
  - 3.12. Clinics for transition from the pediatric to adult care setting (pediatric stream only)
  - 3.13. Neurodevelopment (adult stream only)
  - 3.14. Genetics and/or metabolic service (adult stream only)
4. Other training experiences:
    - 4.1. Orientation to practice management
    - 4.2. Participation in administrative activities within the residency program committee and/or the division, department, hospital, and/or region

**Optional training experiences (Core stage):**

5. Clinical training experiences:
    - 5.1. Neurology outreach clinics and/or rural experience, including underserved and/or vulnerable populations
    - 5.2. Procedural clinics, including lumbar puncture and onabotulinum toxin A administration
    - 5.3. Neuropsychiatry
    - 5.4. Medical or pediatric subspecialty inpatient services or clinics
    - 5.5. Clinics for transition from the pediatric to adult care setting (adult stream only)
  6. Other training experiences:
    - 6.1. Clinician Investigator Program
    - 6.2. Courses leading to advanced degrees (e.g., Masters)
    - 6.3. Courses for examination preparation
    - 6.4. National and international subspecialty courses
    - 6.5. Global health initiative
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- 6.6. Formal instruction in transition of patients from the pediatric to adult care setting (adult stream only)

## **TRANSITION TO PRACTICE (TTP)**

*The focus of this stage is the development and demonstration of independence in patient care. By the end of this stage, residents independently manage a neurological inpatient service, outpatient practice, and offsite consultations for patients with any condition, including complex diagnoses and undifferentiated neurological conditions. This stage also focuses on implementing a plan for lifelong learning and continuing professional development.*

### **Required training experiences (TTP stage):**

#### 1. Clinical training experiences:

##### 1.1. Neurology

- 1.1.1. Clinical teaching unit, stroke unit, and/or consultation service in the role of junior attending<sup>4</sup>
- 1.1.2. Clinics, including triage of new referrals
- 1.1.3. Longitudinal clinic, with emphasis on general Neurology
- 1.1.4. Consultation service to offsite providers and patients (e.g., telephone, telemedicine)
- 1.1.5. After-hours coverage in the junior attending role, including responsibility for outside calls and/or consults

#### 2. Other training experiences:

##### 2.1. Formal instruction in:

- 2.1.1. The biomedical and clinical sciences of Neurology
- 2.1.2. Completing legal, insurance, and government forms and/or documents
- 2.1.3. Mandatory reporting responsibilities, including driving, child/elder abuse, and reportable diseases
- 2.1.4. Wellness and personal growth
  - 2.1.4.1. Financial management
  - 2.1.4.2. Disability plans
  - 2.1.4.3. Personal goals
  - 2.1.4.4. Retirement planning
  - 2.1.4.5. Recognition and mitigation of burnout

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<sup>4</sup> "Junior attending" means that the resident assumes leadership in the education and clinical supervision of junior colleagues, with as much independence as permitted by ability, law, and hospital policy.

- 2.1.5. Dealing with complaints
  - 2.1.5.1. Colleague or patient
  - 2.1.5.2. Hospital
  - 2.1.5.3. Medical regulatory college
  - 2.1.5.4. Medicolegal complaints
- 2.1.6. Interaction with industry, including conflict of interest issues
- 2.1.7. Interaction with lawyers and the judicial system
  - 2.1.7.1. Medical witness
  - 2.1.7.2. Expert witness
- 2.1.8. Interaction with insurance companies, including preparation of medicolegal reports
- 2.2. Grand rounds in Neurology and its specialized areas
- 2.3. Quality assurance and improvement activities, such as morbidity and mortality rounds and case rounds
- 2.4. Critical appraisal activity, such as journal club
- 2.5. Participation in clinical administrative activities, including:
  - 2.5.1. Shadow billing
  - 2.5.2. Patient scheduling
- 2.6. Continuing professional development
  - 2.6.1. Orientation to requirements
  - 2.6.2. Orientation to Royal College MAINPORT
  - 2.6.3. Development of an individualized educational plan, which may include one or more of the following
    - 2.6.3.1. Preparation for fellowship/academic medicine or community practice
    - 2.6.3.2. Procedural skills, including EEG, EMG and/or onabotulinum toxin A administration
    - 2.6.3.3. Research
    - 2.6.3.4. Individualized plan for lifelong learning/CME
- 2.7. Provision of educational sessions for junior trainees/colleagues
  - 2.7.1. Formal teaching sessions (e.g., large group sessions, AHD, tutorials, etc.)
  - 2.7.2. Mock-OSCE examiner

2.8. Completion of a STACER

**Recommended training experiences (TTP stage):**

3. Other training experiences:
  - 3.1. Formal instruction in practice management
  - 3.2. Engagement with the broader health care system through work with:
    - 3.2.1. Patient advocacy groups
    - 3.2.2. Royal College of Physicians and Surgeons of Canada
    - 3.2.3. Canadian Neurological Sciences Federation and/or American Academy of Neurology
    - 3.2.4. Canadian Medical Protective Association
    - 3.2.5. Canadian Medical Association and/or provincial/territorial medical associations

**Optional training experiences (TTP stage):**

4. Clinical training experiences:
  - 4.1. Electroencephalography (EEG) and/or electromyography (EMG) sufficient to write the Canadian Society of Clinical Neurophysiologists certification examination
  - 4.2. Neurology outreach clinics, may include underserved populations/countries
5. Other training experiences:
  - 5.1. Research
  - 5.2. Participation in policy development

**CERTIFICATION REQUIREMENTS**

Royal College certification in Neurology requires all of the following:

1. Successful completion of the Royal College examination in Neurology; and
2. Successful completion of the Royal College Neurology Portfolio.<sup>5</sup>

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<sup>5</sup> The Neurology Portfolio refers to the list of entrustable professional activities across all four stages of the residency Competence Continuum, and associated national standards for assessment and achievement.

**NOTES:**

*The Neurology Portfolio refers to the list of entrustable professional activities across all four stages of the residency Competence Continuum, and associated national standards for assessment and achievement.*

**TERMS OF AGREEMENT WITH THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY**

*The American Board of Psychiatry and Neurology (ABPN) and the Royal College of Physicians and Surgeons of Canada have an agreement that accepts the credentials of applicants to each other's examinations. For an ABPN certificant to be eligible to sit the Royal College Neurology examination, the applicant must:*

- 1. Have attained certification by the ABPN in Neurology;*
- 2. Possess an unrestricted license to practice medicine in the United States or Canada; and*
- 3. The applicant must have completed four years in a Neurology program accredited by the Accreditation Council for Graduate Medical Education (ACGME) and one year of specialty experience.*

**MODEL DURATION OF TRAINING**

Progress in training occurs through demonstration of competence and advancement through the stages of the Competence Continuum. Neurology is planned as a five-year residency program. There is no mandated period of training in each stage. Individual duration of training may be influenced by many factors, which may include the resident's singular progression through the stages, the availability of teaching and learning resources, and/or differences in program implementation. Duration of training in each stage is therefore at the discretion of the faculty of medicine, the competence committee, and the program director.

Guidance for programs:

The Royal College Specialty Committee in Neurology's suggested course of training, for the purposes of planning learning experiences and schedules, is as follows:

- 1 week-2 blocks in Transition to Discipline
- 13-26 blocks in Foundations of Discipline
- 27-39 blocks in Core of Discipline
- 6-13 blocks in Transition to Practice

Guidance for postgraduate medical education offices:

The stages of the Competence Continuum in Neurology are generally no longer than:

- 3 blocks for Transition to Discipline
- 27 blocks for Foundations of Discipline
- 39 blocks for Core of Discipline
- 13 blocks for Transition to Practice
- Total duration of training – five years or 65 blocks

One block is equal to four weeks.

*This document is to be reviewed by the Specialty Committee in Neurology by December 2021.*

**APPROVED** – Specialty Standards Review Committee – June 2019