

These training requirements apply to those who begin training on or after July 1, 2025.

In addition to Surgical Foundations experiences,¹ the following training experiences are required, recommended, or optional, as indicated:

TRANSITION TO DISCIPLINE (TTD)

The focus of this stage is the orientation and introduction of new residents to the neurosurgery program, and institutional protocols, resources, and facilities. During this stage, residents will participate in clinical and surgical skills training through simulation and other learning experiences, and will be assessed on their ability to perform and report on patient histories and physical examinations relevant to Neurosurgery.

Required training experiences (TTD stage)

1. Clinical training experiences:
 - 1.1. Any neurosurgery clinical experience
2. Other training experiences:
 - 2.1. Orientation to the institution and the program
 - 2.1.1. Facilities tour
 - 2.1.2. Operating room suite and procedures
 - 2.1.3. Health records, information systems, and medical documentation
 - 2.1.4. Protocols and procedures (e.g., initiating “code blue”, admitting patients, operating room booking in emergencies, resuscitation status, and documentation)
 - 2.1.5. Introduction to the neurosurgical team, including other residents
 - 2.1.6. Program schedule, training goals and portfolio

¹ Surgical Foundations provides a common curriculum and clinical training in the fundamental skills of surgery for residents in nine Royal College recognized surgical disciplines including Neurosurgery.

2.2. Simulation experiences

2.2.1. Suturing

2.2.2. Technical procedures

2.3. Focused experience providing early clinical and technical skills training (e.g., boot camp)

FOUNDATIONS OF DISCIPLINE (F)

The focus of this stage is the development of the knowledge and skills required to provide initial management of neurosurgical emergencies, and assess patients with common neurological and neurosurgical presentations, including the selection and interpretation of investigations. During this stage, residents will demonstrate their technical skills in foundational neurosurgical procedures under supervision.

Required training experiences (Foundations stage)

1. Clinical training experiences:

1.1. Neurosurgery

1.1.1. Inpatient service

1.1.2. Outpatient clinic

1.1.3. Operative experience

1.1.4. Consultation to the emergency department

1.1.5. Afterhours coverage

1.2. Critical care service

1.3. Service that provides initial trauma management (such as emergency medicine, general surgery, or trauma team)

1.4. Neurology clinic and/or inpatient consult service, which must include experience with acute stroke

2. Other training experiences:

2.1. Formal instruction in the curriculum of Neurosurgery

2.2. Participation in critical appraisal activities, such as journal club

Recommended training experiences (Foundations stage)

3. Clinical training experiences:

3.1. Diagnostic neuroimaging

- 3.2. A mix of services that provide primary and complex medical and/or surgical care, including clinics, inpatients, consultations, and operative experience, as relevant
 - 3.2.1. Internal medicine
 - 3.2.2. Anesthesiology
 - 3.2.3. Emergency medicine
 - 3.2.4. Surgical services other than neurosurgery

CORE OF DISCIPLINE (C)

The focus of this stage is the acquisition of the core skills and knowledge required to manage a neurosurgical service, function independently as a consultant, and provide definitive management for most neurosurgical conditions, including increased exposure to the assessment and management of pediatric patients. Residents will also take on more responsibility for the surgical management of patients, including assessing patient candidacy for surgery, and performing the breadth of core neurosurgical procedures. In addition, residents will engage in scholarly work, quality improvement, and educational initiatives. This stage provides the resident with the opportunity to identify and prepare for individualized career goals; this may include enhancing clinical skills in a specific area of interest (e.g., neurocritical care), developing a new clinical focus (e.g., functional neurosurgery) or developing a scholarly focus.

Required training experiences (Core stage)

- 1. Clinical training experiences:
 - 1.1. Neurosurgery in the breadth of the discipline, including vascular and endovascular, spinal, functional, neuro-oncology, peripheral nerve, radiosurgery and pediatric neurosurgery:
 - 1.1.1. Inpatient service
 - 1.1.2. Outpatient clinic
 - 1.1.3. Operative experience
 - 1.1.4. Critical care
 - 1.1.5. Consultation to the emergency department, and other inpatient medical and surgical services
 - 1.1.6. Afterhours coverage
 - 1.1.7. Endovascular suite
 - 1.1.8. Radiosurgery suite
 - 1.2. Neuropathology

2. Other training experiences:

- 2.1. Formal instruction in the basic and clinical sciences of Neurosurgery
- 2.2. Participation in scholarly activities
- 2.3. Participation in critical appraisal activities, such as journal club
- 2.4. Participation in quality improvement activities
- 2.5. Instruction in and opportunities to deliver formal teaching presentations
- 2.6. Participation in intraprofessional clinical care rounds (e.g., tumour board)

Recommended training experiences (Core stage)

3. Clinical training experiences:

- 3.1. Plastic surgery, for peripheral nerve surgical experience
- 3.2. Vascular surgery, for carotid surgery experience
- 3.3. Orthopedic surgery, for spinal surgery experience
- 3.4. Neurocritical care
- 3.5. Neurosurgery in the community setting

TRANSITION TO PRACTICE (TTP)

The focus of this stage is the consolidation of clinical, surgical and administrative skills in preparation for practice in Neurosurgery. In this stage the emphasis is on demonstrating leadership and expertise as residents supervise other learners, contribute their expertise to interprofessional teams, and manage an outpatient clinic as well as a caseload in the breadth of neurosurgical patients.

Required training experiences (TTP stage)

1. Clinical training experiences:

- 1.1. Neurosurgery:
 - 1.1.1. Inpatient service
 - 1.1.2. Outpatient clinic
 - 1.1.3. Operative experience
 - 1.1.4. Participation in interprofessional team meetings (e.g. tumour board)
 - 1.1.5. Consultation to the emergency department, and other inpatient medical and surgical services
 - 1.1.6. Afterhours coverage

CERTIFICATION REQUIREMENTS

Royal College certification in Neurosurgery requires all of the following:

1. Proof of attestation in Surgical Foundations (see the Surgical Foundations standards on the "Information by Discipline" page of the Royal College's website)
2. Successful completion of the Royal College examination in Neurosurgery
3. Successful completion of the Neurosurgery Portfolio

NOTES

The Neurosurgery 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.

Proof of attestation in Surgical Foundations is required for a resident to progress formally into the Core stage of training in Neurosurgery. Some residents may "reach ahead" to start working on elements of the Core stage in Neurosurgery but must present proof of the Surgical Foundations attestation to their program before they can be formally promoted into the Core stage of Neurosurgery.

MODEL DURATION OF TRAINING

Progress in training occurs through demonstration of competence and advancement through the stages of the Competence Continuum. Neurosurgery is planned as a 6-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 but are not limited to 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 Neurosurgery suggested course of training, for the purposes of planning learning experiences and schedules, is as follows:

- 1-2 months in Transition to Discipline
- Up to 24 months in Foundations of Discipline
- 36-45 months in Core of Discipline
- 2-3 months in Transition to Practice

Guidance for postgraduate medical offices

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

- Transition to Discipline – 2 months
- Foundations of Discipline – 24 months
- Core of Discipline – 45 months
- Transition to Practice – 3 months

This document is to be reviewed by the Specialty Committee in Neurosurgery by December 2027.

APPROVED – Specialty Standards Review Committee – February 2018

REVISED (content related to Surgical Foundations only) – Specialty Committee in Neurosurgery and the Office of Standards and Assessment – July 2024

APPROVED – Office of Standards and Assessment (as delegated by the Specialty Standards Review Committee) – July 2024