

Department of Neurology and Neurosurgery Clinical and Clinical Research Fellowship
Application Form

Type of Fellowship : Neurodevelopmental disabilities (80% research, 20% clinical)

Name of the Fellowship Supervisor: Dr. Michael Shevell,
Professor, Departments of Neurology/Neurosurgery
and Pediatrics

Fellowship Information:

- Number of fellowship positions requested : 1-2 annually
- Name of hospitals involved in training : Montreal Children's Hospital – McGill University Health Center (clinical exposure), Montreal Children's Hospital – McGill University Health Center, Montreal Neurological Hospital/Institute (research component)
 - % time spent by the fellow in each institution – to be determined
- Description of Fellowship: This fellowship will focus on topics related to neurodevelopmental disabilities. Neurodevelopmental disabilities are a common problem in child health, affecting between 5-10% of the pediatric population. Neurodevelopmental disabilities are a group of heterogeneous disorders and the primary emphasis of this fellowship will be cerebral palsy and global developmental delay/intellectual disability. Due to the funding mechanism that this enabling this particular fellowship, the time spent by the fellow will be predominantly in research activities (80%) with the balance (20%) in out-patient clinical activities to provide clinical expertise and reinforce the pragmatic impact of the research undertaken by the fellow.
- Research activity and publications related to fellowship: Please see Dr. Shevell's c.v. attached.
- Mission statement for fellowship: This fellowship aims to enable physicians, primarily those with training in pediatric neurology or pediatrics, to achieve an enhanced level of competence and expertise in neurodevelopmental disabilities, together with the skills necessary to pursue research at an independent investigator, co-investigator or collaborator in this area.
- Duration of fellowship: 1 year
- Source of funding for fellowship: Funding for this particular fellowship will be derived from the training opportunities funds of the NeuroDevNet Networks of Centers of Excellence in partnership with dedicated directed funds from the Montreal Children's Hospital Foundation.

Names of the Teaching Faculty:

1. Dr. Michael Shevell will assume the role as Director and primary supervisor of the fellows in this particular program. Dr. Shevell has sub-specialty board certification in neuro-developmental disabilities, and indeed was the first Canadian physician to be so certified. He has a clinical practice and comprehensive research program directed at children with neurodevelopmental disabilities. He has an extensive track record of research funding and success in this particular area. He is the lead on the cerebral palsy demonstration project of the NeuroDevNet Networks of

Centers of Excellence whose training opportunities funds is enabling this particular fellowship.

2. Dr. Chantal Poulin, Dr. Marie-Emmanuelle Dilenge, Dr. Myriam Srour : These are physicians within the Division of Pediatric Neurology at the Montreal Children's Hospital who are involved in out-patient sub-specialty clinics that are targeting children with various neurodevelopmental disabilities. Dr. Poulin is involved in the neonatal neurology and neuromuscular clinics, Dr. Dilenge is involved in the cerebral palsy clinics and Dr. Srour is involved in the developmental delay clinics. In addition, Dr. Poulin has a long-standing involvement in the spasticity clinic of the Shriner's Hospital and Dr. Dilenge has long-standing involvement in the cerebral palsy clinics of the Centre Hospitalier Marie-Enfant.
3. Dr. Myriam Srour and Dr. Annette Majnemer: Both of these individuals have independent investigator research programs directed at individuals with neurodevelopmental disabilities that may be the research context for the fellow. Specifically Dr. Srour is using genetic technologies to investigate the genetic basis for various cerebral dysgeneses and inherited disorders of the nervous system. Dr. Annette Majnemer is an occupational therapist who has a long-standing independent research program evaluating the consequences and care of individuals with various neurodevelopmental disabilities.

Academic Facilities

1. The clinical activities of this fellowship will be pursued in the out-patient clinics of the Division of Pediatric Neurology at the Montreal Children's Hospital. In addition, there will be an opportunity to participate in the out-patient clinics of the Shriner's and Hôpital Marie-Enfant under the supervision of Drs. Poulin and Dilenge respectively. Research efforts will be undertaken within the research dedicated space allotted to investigators within or associated with the Division of Pediatric Neurology or the Department of Neurology/Neurosurgery at McGill University.
2. The fellow will have full access to an in-Division library as well as computer facilities with internet capabilities. The fellow will also have full access to the library resources of the Montreal Children's Hospital and McGill University.

Fellow Duties and Responsibilities

1. There will be no service coverage.
2. The fellow will not be directly responsible for supervising residents.
3. There will be considerable flexibility in the fellowship in terms of clinical opportunities which will be limited to approximately a maximum 20% (i.e. 1 day/week) of the fellow's time.
4. As above, the fellow will be assigned to out-patient relevant clinics up to a maximum of 20% of time and within these clinics will be responsible for assessing patients and their families and providing a treatment plan and ensuring continuity of care.
5. There will be no specific teaching responsibilities towards residents, however the fellow will be invited to participate in the academic activities of the Division which may involve some rounds and seminar presentations.
6. See number 5.

7. The administrative staff of the Division of Pediatric Neurology will be available to the fellow to support activities. In addition, there will be access to the research resources of the investigators through which the research component of the fellowship is assigned.
8. The fellow will be expected to attend relevant national/international academic meetings such as: the Child Neurology Society, the Canadian Neurosciences Federation, the American Academy of Developmental Medicine and Child Neurology. In addition, the fellow will be expected to participate in the meetings and activities of the NeuroDevNet NCE.
9. Research productivity/publications: As the fellow will be involved 80% of the time in research efforts, there will be an expected productivity with respect to the research undertaken. This will include abstract publication and presentation at relevant national/international meetings, as well as publication of one or more manuscripts.

Curriculum

1. The fellow will be expected to see roughly 4 patients per out-patient clinic approximately twice a week. The fellow will not have ongoing continuity of care responsibility for these patients, which will be assumed by the attending physician and the nurses assigned to the Division of Pediatric Neurology.
2. All of the cases will have some aspects of a neuro-developmental disability and it is expected that roughly half will be cases of cerebral palsy and the remainder will be cases of intellectual disability or global developmental delay.
3. The fellow will be expected to be familiar with the relevant chapters on neurodevelopmental disabilities in the standard texts of child neurology. In addition, the fellow will be expected to keep up with the relevant literature with particular reference to the research projects undertaken by the fellow.
4. The fellow will be expected to be available to attend the weekly Division of Pediatric Neurology rounds. The fellow will also have the opportunity to attend relevant Department of Neurology/Neurosurgery and Pediatrics Grand Rounds as well as academic half-days. The fellow will also be expected to attend the combined Brain-Development-Behavior integrated clinical network joint rounds which are held bi-monthly, as well as the bi-annual Childhood Development Research half-days which are organized by the Division of Developmental Pediatrics.
5. Aside from potentially attending the above rounds, it is expected that the fellow will organize at least one or two round presentations on a bi-annual basis.

Evaluation

1. The fellow will be evaluated by clinical performance, participation in rounds and success in the research project undertaken.
2. Evaluations will be carried out bi-annually on a face-to-face basis.
3. There will be no objective formal written evaluations of performance nor any OSCE type examinations.



Department of Neurology and Neurosurgery Neurodevelopmental Fellowship (General and Specific Objectives)

1. Medical Expert/Clinical Decision-Maker

General Requirements

- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice.
- Demonstrate effective consultation services with respect to patient care, education and legal opinions.

Specific Requirements

Provide scientifically based, comprehensive and effective diagnosis and management for patients with neurodevelopmental disabilities.

Clinical:

For a patient with a neurodevelopmental disability or allied disorder, the resident will be able to:

- Obtain a complete neurological history from adults and children obtaining a collateral history where necessary
- Perform an appropriate physical examination.
- Determine whether a patient's symptoms and signs are the result of a disorder related to neurodevelopmental disability.
- Formulate an appropriate localization, differential and provisional diagnosis of neurodevelopmental disability if appropriate.
- Outline an appropriate plan of laboratory investigation.
- Outline an appropriate therapeutic plan.
- Exhibit appropriate clinical judgment in outlining a differential diagnosis and an investigative and therapeutic plan, taking into account matters such as the patient's age, general health, risk and cost of investigative

procedures, risk and cost of therapeutic interventions, and epidemiology of the disease.

Technical Skills

- To learn/review detailed, practical anatomy of the brain, spinal cord, nerves and muscles.
- Other technical skills related to fellowship

Knowledge

- Acquire and understand the neuroanatomic principles and pathological substrates of neurodevelopmental disabilities.
- Become familiar with the neurophysiological principles, the basic mechanisms related to neurodevelopmental disabilities.
- Learn the major categories or classifications related to neurodevelopmental disabilities.
- Learn clinical neuropharmacology related to n/a
- Acquire expertise in the decision making related to n/a

2. Communicator

General Requirements

- Establish therapeutic relationships with patients/families.
- Obtain and synthesize relevant history from patients/families/communities.
- Listen effectively.
- Discuss appropriate information with patients/families and the health care team.

Specific Requirements

Communicate effectively with patients, their families and medical colleagues (particularly referring physicians), and other health care professionals in both the inpatient and outpatient settings. The resident will:

- Communicate effectively and regularly with patients and their families.
- Be considerate and compassionate in communicating with patients and families, willingly provide accurate information appropriate to the clinical situation, with a reasonable attempt at prognosis.
- Learn to write concise reports of the clinical findings with conclusions and recommendations comprehensible to the non-specialist.

- Communicate effectively and appropriately with the nurses and paramedical personnel.
- When ordering investigative procedures, ensure there has been adequate communication about the patient with the person who will actually be doing and/or reporting the diagnostic study.

3. Collaborator

General Requirements

- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.

Specific Requirements

Be an effective teacher of other physicians (including medical students and house officers), other health care personnel, and patients. The resident will:

- Provide instruction to medical students and more junior physicians at a level appropriate to their clinical education and professional competence.
- Willingly share knowledge with others with whom they are associated, thus ensuring the most effective delivery of health care to patients.

4. Manager

General Requirements

- Utilize resources effectively to balance patient care, learning needs, and outside activities.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, life-long learning and other activities.

Specific Requirements

Be proficient in professional skills related to the diagnosis and treatment of neurodevelopmental disability.

Demonstrate the following professional skills in time management:

- Recognize that effective use of time depends upon punctuality.
- Recognize that effective use of time requires planning.

- Develop speed as well as accuracy in clinical skills.
- Reserve time for reading and keeping current with the neurological literature.
- Establish routines for carrying out regular activities and adhere to them.

Maintain complete and accurate medical records:

- Record and maintain a complete and accurate medical record for every patient seen; this record will include the patient's history and the findings on physical examination (including the neurological examination), a differential diagnosis, a provisional diagnosis, Effectively coordinate the work of the health care team: .
- Indicate, by the treatment plan, that for the optimal treatment of many patients with neurological disorder, a team approach is necessary -- members of the team may include nurses, rehabilitation personnel (physiotherapists, occupational therapists, speech therapists, etc.), psychologists, social workers, etc.
- Identify where an important role(s) can be played by disease focused lay groups with regard to helping the patient and/or family and to facilitate its happening.

5. Health Advocate

General Requirements

Identify the important determinants of health affecting patients.

Contribute effectively to improved health of patients and communities.

Recognize and respond to those issues where advocacy is appropriate.

Specific Requirements

Learn about community resources and related patient support groups; provide assistance to access programs (e.g. home care, occupational and physiotherapy, drug plans, application for nursing homes etc) and participate in their activities.

Educate, be able to generate and access information (e.g. printed material, video tapes web sites) and be available as a resource person to counsel patients effectively on neurological disorders.

Counsel patients on the importance of taking responsibility for their own well-being and recognize the important determinants predisposing to worsening of neurological status

Understand the role of national and international bodies (e.g. CNSF, CNS, ICNA, AACPD, EACD etc) in the promotion of neurological health, and the prevention, detection, and treatment of peripheral nervous system disorders.

6. Scholar

General Requirements

Develop, implement and monitor a personal continuing education strategy.

Critically appraise sources of medical information.

Facilitate learning of patients, house staff/students and other health professionals.

Contribute to development of new knowledge.

Specific Requirements

Be able to critically assess the neurological literature as it relates to patient diagnosis, investigation and treatment:

- Develop criteria for evaluating neurological literature.
- Critically assess the neurological literature using these criteria.
- Be familiar with the design of experimental and observational studies, especially randomized controlled trials.
- Be able to calculate absolute risk reductions, relative risk reductions and numbers needed to treat or harm.

Be able to participate in clinical or basic science studies as a member of a research team:

- Be able to describe principles of good research.
- Use the above principles, and be able to judge whether a research project is properly designed.
- Be prepared to present research findings to peers at local, national or international conferences.

7. Professional

General Requirements

Deliver highest quality care with integrity, honesty and compassion.

Exhibit appropriate personal and interpersonal professional behaviours with patients/families, peer residents and other health care professionals.

Practice medicine ethically consistent with obligations of a physician.

Specific Requirements

Demonstrate personal and professional attitudes consistent with a consulting physician role:

- Periodically review his/her own personal and professional performance against national standards set for the specialty.
- Be willing to include the patient in discussions concerning appropriate diagnostic and management procedures.

- Show appropriate respect for the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.

Be willing and able to appraise accurately his/her own professional performances and show that he/she recognizes his/her own limitations with regard to skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

Be willing and able to keep his/her practice current through reading and other modes of continuing medical education and develop a habit of maintaining current his/her clinical skill and knowledge base through continuing medical education.