

**AMERICAN ACADEMY OF NEUROLOGY
NEURO-ONCOLOGY
FELLOWSHIP CORE CURRICULUM
MAY 2, 2000**

I. PURPOSE:

The purpose of this document is to broadly define the content of core knowledge and principles to be mastered by fellowship trainees in the subspecialty of Neuro-Oncology.

II. CORE CURRICULA

A. DEFINITION OF SUBSPECIALTY

1. Definition

Neuro-oncology is a specialty which involves the management of primary and metastatic central and peripheral nervous system neoplasms; neurologic complications of cancer and related disorders; and neurologic complications of therapy utilized in such patients.

2. Scope of practice

a. Background of practitioners

No official or regulated prerequisites have been established for neuro-oncologists. The subspecialty evolved in the latter third of the 20th century out of a demonstrated need for physicians trained and experienced in the management of such patients. This specialty fell outside the scope of established practice requirements for the specialties of neurology, medical oncology, and neurosurgery. To date, most physicians practicing neuro-oncology have backgrounds in one of these specialties

b. Distinction from established specialties

It is the position of the Section on Neuro-Oncology that the proper management of neuro-oncology patients requires training and experience in two essential areas, which together define neuro-oncology as a unique specialty: Training in *neurology or neurosurgery* is required to properly diagnose and assess patients as it pertains to nervous system function, and training in *oncology* (as it pertains to central nervous system involvement, and generic oncologic management principles) is required for competence in the use of chemotherapeutic agents and related supportive measures in the patient with cancer.

- 1) Approved residency training (U.S. or equivalent) in Neurology, Neurosurgery, or Internal Medicine with experience in and/or rotations involving neurology
- 2) Training in clinical oncology as related to primary and secondary nervous system neoplasms, and direct and indirect complications of these neoplasms and their management (Approved completion of Medical Oncology fellowship by CGME approved program which

includes emphasis in neuro-oncology OR Neuro-Oncology Fellowship recognized by AAN/Section of Neuro-Oncology).

Board certification or a board eligible status, in accord with requirements of the American Board of Medical Specialties, in one of the following specialties (neurology, internal medicine or neurosurgery) is strongly recommended.

B. CORE CONTENT AND KNOWLEDGE BASE

Fellowship training programs in neuro-oncology will have the following purposes and goals:

1. To provide supervised training in the practice of neuro-oncology. Core training will include but not necessarily be limited to the following areas:
 - a. Advanced principles in the diagnosis of primary and secondary (metastatic) nervous system malignancies
 - b. Advanced principles of management of primary and secondary nervous system malignancies, to include:
 1. Expertise in the treatment of these neoplasms , including:
 - a. Primary central nervous system adult and pediatric tumors
 - b. Metastatic cancer to the nervous system, including:
 - brain and spinal cord metastases
 - neoplastic meningitis
 - epidural cord compression
 - nerve and plexus metastases
 - base of skull metastases
 - c. Treatment of cancer related complications, including:
 - Encephalopathy
 - CNS infections
 - Cerebrovascular disease
 - Seizures
 - Increased intracranial pressure
 - Thromboembolism
 - Neutropenia, thrombocytopenia, anemia
 - Sepsis and other infections
 - Metabolic disorders
 - Pain management
 - Palliative / end of life care
 2. Expertise in the use of related chemotherapeutic agents, supportive medication related to neuro-oncology, and blood products
 3. Expertise in the recognition and management of complications of related chemotherapy and other therapeutic agents (including radiotherapy, surgery, steroids etc.)
 4. Experience in the coordination of multidisciplinary management of patients with neuro-oncologic disorders with other subspecialties, including medical oncology, neurosurgery, radiation

oncology, neuroradiology, neuropathology, pain management, rehabilitative and cognitive services, palliative care and hospice transitions.

2. To provide supervised training in clinical research. This experience will include but is not necessarily restricted to:
 - a. Experience in: clinical scientific research methodology and protocol design; data management and interpretation; regulatory mechanisms applicable to clinical oncology research; toxicity, safety and biostatistical methodology; independent design of original clinical or laboratory research; presentation of accomplished activities; and writing and submission of manuscripts and research grant applications.
3. To provide guidelines and counsel with regards to the transition to an independent career as a competent neuro-oncologist.

Appendix A
List of AAN/Section of Neuro-Oncology Recognized
Fellowship Programs (May 2000)

Institution	Program Director
Barrow Neurological Institute, Division of Neurology 350 West Thomas Road Phoenix, AZ 85013	William R. Shapiro, M.D. Phone: (602) 406-3390 Fax: (602) 406-7161 E-mail: wshapiro@bng.chw.edu
Beth Israel Medical Center, North Division 170 East End Avenue at 87th Street New York, NY 10128	Jeffrey C. Allen, M.D. Chief, Pediatric Neurology Phone: (212) 870-9407 Fax: (212) 870-9424 E-mail: jallen@bethisraelny.org
Cleveland Clinic Foundation 9500 Euclid Avenue Cleveland, OH 44195	Bruce H. Cohen, M.D. Department of Neurology Desk S-71 Phone (216) 444-9182 Fax: (216) 445-9139 E-mail: cohenb@ccf.org
Hadassah University Hospital Kyriat Hadassah, Ein Karem PO Box 12000, Jerusalem, ISRAEL	Tali Siegal, M.D. Neuro-oncology Phone: 972-2-6777-111 Fax: 972-2-641-1128 E-mail: siegal@hadassah.org.il
Hermelin Brain Tumor Center Henry Ford Hospital 2799 W. Grand Blvd Detroit, MI 48202	Tom Mikkelsen, M.D. Phone: (313) 916- 1094 Fax: (313) 916-7139 E-mail: nstom@neuro.hfh.edu
Massachusetts General Hospital MGH Brain Tumor Center , Cox 3 100 Blossom Street Boston, MA 02115	Tracy T. Batchelor, M.D. Telephone: (617) 724-8770 Fax: (617) 724-8769 E-mail: batchelor@helix.mgh.harvard.edu
Mayo Clinic Rochester Department of Neurology 200 First Street SW Rochester, MN 55905	Brian P. O'Neil, M.D. Phone: (507) 284-8431 Fax: (507) 284-4074 E-mail: boneill@mayo.edu
Memorial Sloan-Kettering Cancer Center 1275 York Ave. New York, NY 10021	Mark G. Malkin, M.D. Department of Neurology Phone: (212) 639-6688 Fax: (212) 717-3519 E-mail: malkinm@mskcc.org

Roswell Park Cancer Institute Elm and Carlton Streets Buffalo, New York 14263	Steven J. Greenberg, M.D. Head, Department of Neurology Phone: 716 - 845 - 8600 Fax: 716 - 845 - 8656 E-mail: greenberg@SC3101.med.buffalo.edu
University of Alabama - UAB 510 Medical Education Building 1813 6th Avenue South Birmingham, AL 35294-3295	Steven S. Rosenfeld, M.D., Ph.D. Dept. of Neurology Phone: (205) 934-1436 Fax: (205) 975-7546 E-mail: s_rosenfeld@email.neuro.uab.edu
University of Michigan Health System 1914 Taubman Center/0316 Ann Arbor, MI 48103	Harry S. Greenberg, M.D. Department of Neurology Phone: 313-936-7910 Fax: 313-936-8763 E-mail: hsgr@umich.edu
University of Texas MD Anderson Cancer Center 1515 Holcombe Boulevard Houston, TX 77030	Kurt A. Jaeckle, M.D. Department of Neuro-Oncology , Box 100 Phone: (713) 792-8288 Fax: (713) 794-4999 E-mail: kjaeckle@mdanderson.org
London Regional Cancer Centre 790 Commissioners Road East London, Ontario N6A 4L6 CANADA	J. Gregory Cairncross, M.D. Phone: (519) 685-8615 Fax: (519) 685-8611 Email: gcairncross@lrcc.on.ca
Princess Margaret Hospital 610 University Ave Ste 18-717 Toronto, ON M5G 2M9 Canada	Warren P. Mason, M.D. Phone: (416) 946-2277 Fax: (416) 946-2284 warren_mason@pmh.toronto.on.ca
University of California San Francisco 533 Parnassus Room U107 San Francisco, CA 94143-0112	Michael Prados MD M787 Dept. of Neurosurgery Phone: (415) 476-2966 Fax:: (415) 476-9684 Email: pradosm@neuro.ucsf.edu
Johns Hopkins Oncology Center 600 N Wolfe St. Rm 132 Baltimore MD 21287-0005	Stuart A. Grossman, MD Phone: (410) 955-8837 Fax: (410) 955-0125 Email: grossman@welchlink.jhu.edu