



**The American Society of
Neurophysiological Monitoring**

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**Credentialing and Competency Policy Statement
For Intraoperative Neuromonitoring Staff**

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INTRODUCTION

Intraoperative neuromonitoring is the application of various neurophysiological modalities (e. g., electroencephalography (EEG), sensory and motor evoked potentials, electromyography (EMG), electrophysiological mapping, and transcranial and microvascular Doppler) to assess the function of the nervous system during surgical intervention. The primary objectives of neuromonitoring are to avoid iatrogenic injury to neural tissue, reduce the risk of permanent postoperative deficits, and assist the surgeon in identifying neural structures.

The American Society of Neurophysiological Monitoring (ASNM) was founded in 1990 to promote the academic and clinical specialty of intraoperative neurophysiological monitoring, and serve as the leading organization for the field of interventional neurophysiology assessment and monitoring. Risk management and credentialing committees should be aware of the qualifications and credentials that should be required for clinical practice as it applies to both the technical and professional (or interpretative) levels.

Information contained in this document may be helpful in decision-making processes for granting privileges concerning the staff performing and supervising intraoperative neuromonitoring. This document does not address local, state or federal laws nor does it necessarily account for community standards of acceptable practice.

CLINICAL LEVELS AND CREDENTIALING ORGANIZATIONS

There are two levels of clinical services related to performing intraoperative neuromonitoring: a supervisory/interpretative level and a technical level. There are several organizations which offer credentials at the professional/supervisory level which specifically qualify competency for interpretation of intraoperative neuromonitoring assessment: 1) The American Board of Neurophysiological Monitoring (ABNM) grants recognition as a Diplomate (DABNM), 2) the American Board of Psychiatry and Neurology (ABPN) grants a status as “Certification in the Subspecialty of Clinical Neurophysiology,” 3) the American Board of Clinical Neurophysiology (ABCN) grants a certification “with special competency in intraoperative neuromonitoring,” and 4) the American Board of Electrodiagnostic Medicine (ABEM) provides a Diplomate certification in neurophysiology concentrating on EMG and evoked potentials. At a technical level, the American Board of Registration of Electroencephalographic and Evoked Potential Technologists, Inc. (ABRET) offers a Certification in Neurophysiologic Intraoperative Monitoring (CNIM). The websites for these organizations are: 1) ABNM: www.abnm.info, 2) ABPN: www.abpn.com, 3) ABCN: www.abcn.org, 4) ABEM: www.abemexam.net, and 5) ABRET: www.abret.org. The requirements of the above organizations for their respective credentials are briefly reviewed below:

DABNM offered by the ABNM

The ABNM, which administered its first exam in 1999, was created in order to provide a means of assessing professional practitioners specifically in intraoperative neuromonitoring. Credentialing consists of both a written and an oral examination. The written exam is used to identify appropriate experience and an adequate knowledge base. Successful completion of the written examination is followed by an oral exam to identify adequate judgment skills that are expected for an individual supervising technicians and/or interpreting intraoperative monitoring. A successful candidate will earn a certificate indicating (s)he is a Diplomate of the American Board of Neurophysiologic Monitoring (DABNM). This certification is valid for a period of 10 years. The minimum requirements for examination include a Master's degree or higher, and a log of 300 cases over a minimum period of 3 years for which the candidate had primary responsibility for monitoring. Attestation statements from 2 surgeons are required to verify the individual's involvement in the cases contained in a logbook. ABNM certification is designed for the supervising clinical neurophysiologist whose primary responsibility is to provide interpretation of the monitoring data with appropriate clinical correlations. The academic requirements for the DABNM were revised at the ABNM Board of Directors' meeting on May 12, 2005, and it was decided that a minimum of an earned Master's degree in a physical science, life science, or clinical allied health profession from an accredited institution will be mandatory. In addition, those candidates who are “board eligible,” i. e., those who have passed the written examination, will have the opportunity to take the oral examination two times. If, after two attempts, the candidate does not pass the oral examination, they must wait a period of one year before sitting for the oral examination again. At the ABNM Board of Directors' meeting held on October 13, 2007, it was decided that, as of January 1, 2009, that one of the prerequisites for an ABNM candidate will include verification of completing graduate-level coursework in neuroanatomy and neurophysiology from an accredited institution.

At the recent ABNM Board of Directors' meeting held on October 11, 2008, the academic requirements were again revised and as of January 1, 2010, the formal educational requirements will require a minimum of a doctoral degree in a physical science, life science, or clinical allied health profession from an accredited institution. Lastly, re-certification is required after ten years. For information about accreditation of your institution, the ABNM recommends the following: 1) for a foreign obtained MD, this can be verified by the National Committee on Foreign Medical Education and Accreditation (NCFMEA), and 2) for all others, this can be verified by the Council for Higher Education Accreditation (CHEA) which is the overall body that recognizes accrediting associations that confer regional accreditation.

Certification in the Subspecialty of Clinical Neurophysiology offered by ABPN

This "Certification in the Subspecialty of Clinical Neurophysiology" is for Diplomates in neurology, child neurology, or psychiatry of the ABPN. Additionally, the candidate is required to have at least one year of specialized training in an "**ACMGE-approved** fellowship training in clinical neurophysiology" following completion of a primary residency training in neurology, child neurology, or psychiatry. The primary emphasis is "in electroencephalography, electromyography, nerve conduction studies, and other areas of clinical neurophysiology." Lastly, this is a ten-year, time-limited certification.

ABCN Certification

This examination is intended for "a physician who has successfully completed a residency training in Neurology, Neurosurgery, or Psychiatry in an ACGME or RCPSC training program and is Board certified in one of those specialties." Additional requirements include a minimum of 12 months of training and supervised experience in clinical neurophysiology following the completion of a primary residency. The supervised experience must be by an "ABCN-certified training director (physician)." The primary emphasis of this certification is in the interpretation of EEG, evoked potentials, intraoperative neuromonitoring, epilepsy, and sleep. "Those successfully completing the Intraoperative Monitoring track will be certified 'with special competency in intraoperative monitoring' Certificates issued are ten-year, time-limited and subject to recertification at the end of ten years."

ABEM Certification

The physician must be a Diplomate of the ABPN, American Board of Physical Medicine and Rehabilitation, American Osteopathic Board of Neurology and Psychiatry, American Board of Physical Medicine and Rehabilitation, or Canadian equivalent. After completion of residency, "the period of preceptorship must be at least **6 months fulltime**, or equivalent thereto, with the first three months rigidly structured with respect to supervision. Any post-residency course of study in electrodiagnostic medicine must be conducted where there is an ACME, AOA, or RCPSC recognized neurology and psychiatry residency training program During these 6 months, at least **200 complete diagnostic evaluations**" must be documented and interpreted. These requirements must be completed under the direct supervision of an experienced electrodiagnostic medical consultant, preferably an ABEM Diplomate. In addition,

following successful completion of residency and the 6-month preceptorship , “candidates . . . must also document at least 1 year of [independent] experience following training during which they must perform 200 additional complete electrodiagnostic evaluations on separate occasions.” The primary emphasis of this certification involve the interpretations of “electrodiagnostic studies, diagnosis, evaluation, and treatment of neuromuscular disorders Certificates issued are ten-year, time-limited and subject to recertification at the end of ten years.”

CNIM offered by ABRET

CNIM certification is intended for the monitoring personnel involved with the technical aspects of monitoring including patient preparation, equipment set-up, data acquisition and trending, and troubleshooting. ABRET’s certification consists of a written exam and monitoring experience (planning, setting up and monitoring each case). Current requirements for examination include a Bachelor’s degree or a recognized Allied Health Care/Nursing credential or degree. In addition to these education requirements, documentation of supervised monitoring of 100 cases is also required with verification of these cases by the candidate’s supervisor prior to the examination application. As of January 1, 2008, a candidate must meet the education requirements by presenting: 1) a Bachelor’s Degree or 2) credential as a R. EEG T., R. EP T., RNCST, or RET (Canadian EEG credential). Other Allied Health Care/Nursing credentials were no longer be accepted. The credentials listed above will be the only credentials accepted in lieu of a Bachelor’s degree. As of January 1, 2010, several revisions for the eligibility requirements will become effective. Several new requirements will exist for the 100 neuromonitoring cases that are documented for eligibility. Do not document more than a total of 100 cases or more than three cases a day, regardless of the length or type. In addition, the technologist’s time (not the patient’s time) in and out of the OR is now required and cases done as a trainee should be not counted. At least 10% (10) of the documented cases must have been performed within twelve months of the application deadline. The earlier education requirement of a Bachelor’s Degree will be eliminated and reduced to a minimum requirement of an Associate’s Degree. The candidate must posses an electroneurodiagnostic credential: R. EEG T. or R. EP T. or a Canadian equivalent and a copy of current registration. The first re-certification is required after ten years, and every five years thereafter.

CLINICAL PRACTICE GUIDELINES OF THE AMERICAN SPEECH-LANGUAGE- HEARING ASSOCIATION (ASHA)

The ASHA Ad Hoc Committee on Advances in Clinical Practice has released a policy statement titled: *Neurophysiologic Intraoperative Monitoring*. Several excerpts are presented here.

. . . . The procedure(s) addressed in this document requires the practitioner to obtain education and training beyond that necessary for ASHA certification It is the position of the American Speech-Language-Hearing Association (ASHA) that neurophysiological intraoperative monitoring is within the scope of practice of audiologists with the appropriate knowledge base and skills These should include relevant and appropriate academic training, followed by extensive clinical

training in a setting providing the opportunity to be involved in a sufficient number of cases, under the supervision of experienced and competent professionals The specific education and training may vary for each type and modality of intraoperative monitoring. For instance, appropriate background and experience in monitoring posterior cranial fossa surgical procedures does not automatically ensure competence in the monitoring of somatosensory evoked potentials during spinal-cord surgery Direct supervised experience in neurophysiologic intraoperative monitoring, prior to independently monitoring surgical procedures, is necessary.

PROFESSIONAL AND TECHNICAL LEVELS

Over the past decade, there have been a number of guidelines developed for intraoperative neuromonitoring by various professional organizations (IFCN, 1993; ACNS, 1994; ASET, 1998; OSET, 1999; and ASNM, 2005; see list below) and only those guidelines for staffing and interpretation (i. e., the professional and technical levels) are summarized here. However, it is strongly recommended that all of the guidelines should be reviewed and considered for implementation.

Interpretation of the intraoperative neuromonitoring data and any recommendations regarding the consequences or intervention are the responsibility of a qualified physician or clinical neurophysiologist. The educational degree of said physician or clinical neurophysiologist was originally defined as “M.D., Ph.D., or D.O.” as established in *Guideline 11: Guidelines for Intraoperative Monitoring of Sensory Evoked Potentials* published in the *Journal of Clinical Neurophysiology*, 11: 77-87, (1994), and was originally restricted to “experienced in EPs.” The requirements were expanded to include any doctoral degree in a physical science, life science, or clinical allied health profession from an accredited institution as well as other neuromonitoring modalities by the ABNM in 2010 and 1999, respectively. Furthermore, according to the Health Care Financing Administration (HCFA; now know as the Centers for Medicare and Medicaid Services (CMS)), the interpreting physician/neurophysiologist must be physically present or available by means of real-time, remote monitoring for reimbursement of the professional component (*Federal Register* / Vol. 62, No. 211 / Friday, October 31, 1997 / *Rules and Regulations*, pp. 59063 and 59070).

The primary role of the technologists is implementation of procedures related to: 1) patient preparation, 2) operation of instrumentation for continuous neuromonitoring, 3) recognition and correction of artifact, 4) establishing appropriate baselines, 5) recognition of critical periods during anesthesia and surgery, 6) detailed and accurate documentation of waveforms, anesthetic and surgical events, vital signs, and any deviations from baseline data and interventions taken, and 7) alerting the appropriate intraoperative neurophysiologist for interpretation of the waveforms.

ADDITIONAL INFORMATION

For additional information regarding intraoperative neuromonitoring staffing and credentialing see: *A Supplement to Briefings on Credentialing, Neurophysiological Monitoring, Clinical Privilege White Paper* published by HCPPro, Inc., Marblehead, MA

or go to www.hcmarketplace.com or call HCPro's customer service department at 800/650-6787.

For a more detailed review of the national criteria for evaluating the competencies and job responsibilities of the technologists performing intraoperative neurophysiologic monitoring see: *National Competencies for Performing Intraoperative Neurophysiologic Monitoring (2003)* which can be obtained from www.ASET.com.

For a complete position statement by ASHA see American Speech-Language-Hearing Association (1992). *Neurophysiologic Intraoperative Monitoring. ASHA*, (March. Suppl. 7). 34-36) or visit www.asha.org.

Information regarding examinations for the CNIM and ABNM certifications can be obtained through the Professional Testing Corporation (PTC) at www.ptcny.com

For the ABNM, ABPN, ABCN, and ABEM, see their respective websites listed above.

PROFESSIONAL SOCIETIES PROVIDING INTRAOPERATIVE NEUROMONITORING GUIDELINES

Listing of professional societies providing guidelines for intraoperative neuromonitoring which are strongly recommended for review:

- ACNS American Clinical Neurophysiology Society
- ASNM American Society of Neurophysiological Monitoring
- IFCN International Federation of Clinical Neurophysiology
- ASET American Society of Electroneurodiagnostic Technologist
- OSET International Organization of Societies for Electrophysiological Technology

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