PROFESSIONAL LIABILITY IN IONM

According to The American Society of Neurophysiological Monitoring (ASNM), "Intraoperative neurophysiologic monitoring (IONM) is a technique that is directly aimed at reducing the risk of neurological deficits after operations that involve the nervous system. IONM is a technique that has evolved during the last two decades; it makes use of recordings of electrical potentials from the nervous system during surgical operations."

The goal of IONM is the reduction of the number of neurological injuries during complex surgical procedures. There are two distinct components to IONM which have both technical and professional implications. IONM is typically performed by a certified technician using electrode applications under the direct supervision of an MD/PhD. The tech's responsibilities include, but are not limited to, continuously monitoring and identifying neurophysiological signals of a patient undergoing surgery. It is the doctor, however, who is ultimately responsible for analyzing the data and managing the outcome of the surgery.

Over the past decade, several factors have convened together to transform the IONM industry. Reimbursement and staffing levels, combined with the litigation associated with IONM have raised some serious questions about underwriting this class. The liability insurance market must decide whether the practice of IONM and the shifts in this niche are for the better or for worse.

During the 1970s and 1980s, Drs. Bieber[1], Brown[2] and MacEwen[3] collected data that supported the idea of surgeries utilizing IONM[1]. Bieber examined 275 consecutive IONM-assisted spinal surgeries and postoperatively, all patients were neurologically normal. Brown's review of 300 orthopedic surgeries and similar favorable studies led to Medicare establishing its first billing code for IONM in 1991.

The 1990s IONM model, which was commonly referred to as the "Mayo Model" or "In-Sourced Model" consisted of one physician in the hospital overseeing several technologists in the hospital's numerous operating rooms. As the popularity of neuromonitoring grew (along with the popularity of telemedicine), so did the need to have physician oversight from a location outside of the hospital, where the procedures were being performed. In the early 2000s, Medicare and the American Medical Association (AMA) made changes to its guidelines to support this external oversight. Thus, the out-sourced, primarily tech-based IONM model was born.

Before 2003, during the time of the Mayo Model, it is very difficult to find liability cases against IONM specialists. The lack of loss data may be due to the number of performed procedures, but there are those who contend that the small number of suits is due to the type of oversight that occurred before 2003.

As an emerging specialty, the professional liability market had to guess what an appropriate rate was for neuromonitoring risks. Malpractice underwriters did not have ten years of loss data specific to IONM. IONM licensure was not legislated at a state or federal level. The only certification available for technicians was the CNIM (Certified in Neurophysiological Intraoperative Monitoring) and this certification was not mandatory for employment. In many cases EEG technicians and audiologists were entering this specialty. Without data, the underwriters often charged the EEG insurance rate of $100 to insure this growing population of professionals.

Let's consider the liability insurance trends from 2003 to 2013. Over this period we can find typical IONM malpractice settlements of $300,000 - $400,000 with high settlements of $3MM-$4MM. The highest jury verdict that we could find was a California verdict for $26MM. Clearly, a pricing methodology based on $100 per IONM tech was not going to be adequate to cover the losses of this industry. By 2014 filed insurance programs for IONM techs were charging $1,350 (or higher) for a $1,000,000 limit.

In 2013, CMS implemented new regulations for IONM reimbursement. Medicare payment was limited to IONM services where continuous monitoring occurred to only one patient at a time. This one-on-one monitoring should result in fewer errors and faster response to adverse neurological patterns. On the other hand, the shift might have an immediate reduction to annual income which may lead to reduced quality or an increase in fraud. We should note that the reimbursement change in 2001 was issued to meet the growing demand for IONM services. It can be argued that the 2013 regulation reduced the availability, but improved the quality, of IONM services.

Liability experts can look at the 2013 regulation as improving oversight and making IONM better risks. A 2010 American Academy of Neurology survey of IONM practitioners showed that on average 90% of monitoring hours are spent monitoring three (3) or fewer simultaneous cases and that practitioners rarely monitor more than six (6) cases simultaneously.[4] Hearing the news of a 1:1 ratio was received favorably by IONM underwriters. However, the inability for a large number of surgeries to have IONM support could *increase* litigation against hospitals/surgery centers.

Intraoperative neuromonitoring is an advancing technology that is here to stay; IONM in support of many spinal surgeries is a standard of care. The use of neuromonitoring in other complex surgeries is supported by research confirming its efficacy. The data that supports the use of IONM services was often gathered in situations where physicians were

simultaneously monitoring 2 or more patients. If this type of support is the perceived standard of care, *what will happen when a hospital does not provide a patient with this surgical support? What are the patient's expectations at an outpatient center that offers minimally invasive spinal surgeries?*

Despite the increased monitoring, several underwriters state that insuring IONM techs and their employers cannot be done profitably. From one perspective, the lack of standards for IONM services creates an underwriting nightmare. IONM licensure still is not state regulated and there is no clear minimum criterion for employment. An underwriter wants a standard of care that can be measured and judged during a malpractice suit. The struggles in defining a standard of care are the intricacies of monitoring devices, the diverse IONM patient population and the varying levels of technician training.

The IONM environment can be summarized as:

- Over the past three years, IONM companies have amended their physician/tech oversight to maximize reimbursement.
- The change in oversight makes for a 'preferred' IONM liability risk.
- Many insurance markets who insured IONM companies and individual technologists from 2003-2013 have ceased to provide coverage.
- Liability rates for IONM technologists are no longer comparable to EEG technologists.
- The 2013 changes in reimbursement do not benefit all parties.

We recognize both the risks and rewards associated with the fluctuations within the IONM industry. Despite the financial pressures, there have been a growing number of IONM organizations that seek Joint Commission accreditation and these companies are implementing best practices for communication between physicians and technicians. Individuals and companies specializing in neuromonitoring bring a valued service to complex procedures. We believe this class of business is an improved risk and can be underwritten.

REFERENCES

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[2] Brown RH, Nash CL: The "grey zone" in intra-operative SCEP monitoring. In Schramm J and Jones SJ (ed): Spinal Cord Monitoring. Germany, Springer-Verlag, 179-185, 1985.

Brown RH, Nash CL, Berilla JA, Amaddio MD: Cortical evoked potential monitoring: A system for intraoperative monitoring of spinal cord function. J Spine 9(3):256-261, 1984.

[3] MacEwen GD, Bunnell WP, Sriram K: Acute neurological complications in the treatment of scoliosis: A report of the Scoliosis Research Society. J Bone Joint Surg 57A:404-408, 1975.

[4] American Academy of Neurology: Principles of Coding for Intraoperative Neurology - All Rights Reserved Neurophysiologic Monitoring (IOM) and Testing Model Policy