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A Look at Intraoperative Neuromonitoring:

Gauging the Benefits and Challenges of Delivering Optimal Services

By Bonnie Darves

In neurosurgery cases where it's used efficiently and effectively, intraoperative neuromonitoring (IONM) has proved a valuable tool in identifying nervous-system risks and potential complications and improving patient safety and outcomes in complex procedures. At the same time, despite its decade-old designation as a specialty overseen by the American Board of Neurophysiologic Monitoring (ABNM), it remains a somewhat misunderstood field and the practice's uptake in neurosurgery generally, outside scoliosis surgery and certain other complex spine procedures, has been steady but relatively slow.

Some neurosurgeons and practices use it routinely in a broad range of spine and brain surgeries, while others use it infrequently or not at all. "The vast majority of hospitals still don't have intraoperative neuromonitoring. And despite its [risk-reduction] benefits, there are still surgeons who take the view that they were trained to do procedures without monitoring, so they don't need it," said Marc Nuwer, MD, PhD, clinical director of the UCLA Neurophysiology Program and a pioneer in the field who developed early monitoring techniques. He cites a large seven-year, multisite study of scoliosis cases that found a 60% reduction in paraplegia when intraoperative neuromonitoring was used.

"There are definitely procedures where IONM would be beneficial but is not used, in part because it must be requested by the surgeon," said Jay L. Shils, PhD, director of the two-decade-old intraoperative neuromonitoring program at Rush Medical Center in Chicago. That's led to variable uptake, Dr. Shils thinks. "I also think that some surgeons don't want to make its use a standard because they think they'll then be required to use it for every case."

There are a whole host of other reasons why IONM is less prevalent than it ought to be, according to Rich Vogel, PhD, D.ABNM, a recognized leader in intraoperative neuromonitoring and ABNM board member. One factor is workforce constraints. There are fewer than 200 ABNM diplomates today worldwide; and there is a persistent shortage of certified, qualified technicians, and a limited number of high-quality training programs. In addition, there are fewer than 5,000 bachelor's-level certified technicians working now. Further, Dr. Nuwer points out, only four institutions provide doctorate-level intraoperative neuromonitoring training, and only a dozen fellowship programs exist.

"We simply don't have enough neurophysiologists or technicians," said Faisal Jahangiri, MD, CNIM, an ABNM diplomate who is vice president of clinical affairs for Axis

> **"The issue is that you need a certain size to operate something like intraoperative neuromonitoring in house—you can't do this with three neurosurgeons. And you need a large staff to cover emergencies."**
>
> – Michael Brisman, MD

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Neuromonitoring LLC in Richardson, Texas. "Fifty percent of states don't have a single ABNM diplomate, for example."

The other key issue involves perception, in Dr. Vogel's view. "I think that surgeons, by and large, have a fairly superficial understanding of how intraoperative neuromonitoring works, and some are unwilling to try new things," he said. "Use of brain mapping in intraoperative neuromonitoring, for example, is used more pervasively in Europe than it is here." In the United States, usage of intraoperative neuromonitoring is sometimes driven more by medicolegal considerations than by quality-improvement objectives, he adds. That can lead to suboptimal service choice and implementation, several sources agreed, and an inordinate focus on services' cost rather than their quality.

"We simply don't have enough neurophysiologists or technicians. Fifty percent of states don't have a single ABNM diplomate, for example."

– Faisal Jahangiri, MD, CNIM, D.ABNM

The medicolegal climate around intraoperative neuromonitoring is a valid issue for neurosurgeons, however. Plaintiffs lawyers in neurosurgical cases involving poor outcomes sometimes prevail by citing that intraoperative neuromonitoring was not used—even if the procedure was one in which monitoring would not have been indicated and there's no evidence base to support its use.

Dr. Jahangiri and Dr. Vogel concur on another impediment: that solid literature on intraoperative neuromonitoring's efficacy is lagging its usage. Much of the literature that exists has been produced by surgeons, not neuromonitoring specialists, and much of that, in Dr. Vogel's view, is of poor quality and lacks appropriate peer review. "I'm considered one of the nation's experts in intraoperative neuromonitoring, and yet I'd never been sent a single paper for review," he said. "We need neurosurgeons and neurophysiologists to team up and work together to publish. That collaboration is necessary because most intraoperative neuromonitoring is outsourced."

Another impediment to broader use, in Dr. Jahangiri's view, is a perception that intraoperative neuromonitoring will interfere with OR processes and operations. "There's a concern among some neurosurgeons, especially those nearing retirement, that using neuromonitoring will add time or slow them down in the OR. But when it's done properly, it really isn't more time consuming," said Dr. Jahangiri, president-elect of the American Society of Neurophysiological Monitoring and author of "Surgical Neurophysiology: A Reference Guide to Intraoperative Neurophysiological Monitoring."

"When they get used to intraoperative neuromonitoring, they understand its benefits."

That's certainly the case at Neurological Surgery, P.C. (NSPC) in Rockville Centre, Long Island. The 20-neurosurgeon practice, which once used an outside service, now operates a robust in-house intraoperative neuromonitoring program that also provides outsourced services to other local surgeons. "Although it's up to individual surgeons to decide when IONM will be used, our use has grown substantially in recent years," said Michael Brisman, MD, who specializes in minimally invasive neurosurgical procedures at NSPC and is co-director of the Neuroscience Institute at Winthrop University Hospital.

"The issue is that you need a certain size to operate something like this in house—you can't do this with three neurosurgeons," Dr. Brisman said. "And you need a large staff to cover emergencies."

NSPC's program, for example, includes a PhD neurophysiologist who directs the program, two IONM dedicated staff neurologists, and 10 technicians. It has dedicated staff who handle intraoperative neuromonitoring billing and collections. It also has dedicated physician oversight of every case in which IONM is used. "You really have to have highly qualified people to run a good program, and senior people to oversee junior people," Dr. Brisman said. From the reimbursement standpoint, he adds, the practice (and/or hospital) needs to have a good mix of commercial payers, because Medicare now requires a 1:1 overseeing-physician-to-patient ratio to approve reimbursement.

IONM service models: in-house vs. outsourced

Those practical, logistical and financial realities that Dr. Brisman cites are important considerations for neurosurgery groups and for hospitals that seek to either implement or expand intraoperative neuromonitoring. Although in-house service is the ideal model, in Dr. Nuwer's view, he admits it's an expensive proposition and one that requires considerable strategic planning to implement effectively. "In house is preferred and possible, but you have to have the case volume to justify it," he said. For example, his six-physician program (which covers all neurophysiologic monitoring, not just surgeries) handles four brain or spine cases in a typical day, but some of those cases last all

day. The group's data indicates that technicians and equipment costs approximately $400 for a four-hour case. He estimates that a group needs at least 10 significant spine cases weekly to justify an in-house service economically.

"You've also got to have flexibility and enough staff to manage OR volumes and schedule challenges, because you will have peaks and troughs," Dr. Nuwer said. "In my experience half of scheduled cases don't happen, and half of the cases we do weren't on the schedule." He also advises that in-house programs ensure that they bring in highly experienced coding and billing staff. "You really need trained people doing this work because there's some complexity to it," he said.

Dr. Shils said that although he doesn't have full cost data for Rush's program, he knows that if its cost averaged $600 per case over a year, "using an outside service would cost us less." He noted that Rush uses intraoperative neuromonitoring, as a matter of principle, for safety and risk reduction reasons, and is not overly focused on cost. "Rush views intraoperative neuromonitoring as a cost of doing business," he said.

Because of the expense involved in setting up a program, many practices and hospitals that develop in-house programs use the monitoring services—and the technicians—for other purposes and procedures outside of neurosurgical ones, Dr. Vogel notes. Dr. Nuwer, who frequently makes presentations on intraoperative neuromonitoring, advises that practices should consider having an experienced neurophysiologist serve as medical director because of neurophysiologists' focused training.

Axis Neuromonitoring, which provides services to 30 Texas hospitals, employs 25 technicians (all of whom have CNIM (Certification for Neurophysiological Monitoring) certification and have completed at least 150 surgeries. Axis uses offsite dedicated telemonitoring physicians and handles a total 200 to 250 cases monthly. The company also provides and requires extensive continuing education (40 to 50 hours annually) for technicians and performs technician QA analysis on each case.

> **"You don't want someone who's looking at neuromonitoring just as a line item, like gauze, making these kinds of decisions."**
>
> – Rich Vogel, PhD

Evaluating outside IONM services: diligence essential

Although numerous companies offer intraoperative neuromonitoring services, their services' quality can be quite variable, several sources said. In addition, technician training and oversight, and experience, as well as educational offerings, range from minimal in some companies to extensive in others.

For those reasons, neurosurgery practices and hospitals seeking outside IONM services need to be especially diligent in evaluating offerings. Practices need to know who is doing the oversight, where they were trained, and how many cases that individual is monitoring simultaneously, Dr. Nuwer advises. "There are privileging and credentials issues that need to be considered, as well as malpractice liability coverage," he said. "I've heard of situations where physicians are monitoring eight cases at a time—that's proctoring, not monitoring. There are plenty of good companies doing good work around the country to help prevent post-op complications, but you need to know what to look for."

Dr. Shils cautions that if a practice plans to use remote monitoring services, both the overseeing clinician and the technicians must be top notch and experienced in the procedures they will be handling. "If that's the case, I think remote monitoring is OK," he said. To illustrate the importance of these criteria, he notes that when Rush hires new technicians, they are not left alone for the first few months.

"It's very important to look at the certification and experience of the techs if you're evaluating outside companies, and the level of training and ongoing education they receive," Dr. Jahangiri advises. He and other sources noted that the basic certification is just that—basic—and it's inadequate without considerable in-OR training and hands-on early-career oversight.

Dr. Vogel thinks that due diligence needs to be thorough, and that it must include the nitty-gritty details, to ensure the company is a good fit for the kinds of procedures that the practice's neurosurgeons do. "You want to know if the company has demonstrated competency to manage those cases, not just whether the techs are certified," he said.

Often, when hospitals handle the outsourcing, they're focused primarily on the bottom line and obtaining services at the least cost, he said, which can lead to poor quality overall and limited value for the neurosurgeons. "If hospitals and surgeons don't demand competence, they won't necessarily get it," Dr. Vogel said. In addition, the individual handling the service requisition is often someone who is responsible for purchasing supplies, so there's no assurance that they'll have the skills to look beyond cost factors. "You don't want someone who's looking at neuromonitoring just

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as a line item, like gauze, making these kinds of decisions," said Dr. Vogel, who produces a monthly podcast on optimizing neuromonitoring through the North American Spine Society.

Finally, all sources pointed to the importance of researching companies' track record, charges, billing practices and financial models to ensure that they're operating within the law and ethically. The recent high-profile cases in which patients who received neuromonitoring services were later charged tens of thousands of dollars and physicians were found to have received kickbacks, illustrate the importance of "knowing who you're working with," Dr. Vogel said. "Practices and hospitals should take a deep dive into [prospective] companies' billing practices to ensure they're being handled legally and ethically. It's also a good idea to seek experienced legal counsel review of the company and contract."

Ms. Darves, an independent writer based in the Seattle area, is editor of Neurosurgery Market Watch.

"You've also got to have flexibility and enough staff to manage OR volumes and schedule challenges, because you will have peaks and troughs."

– Marc Nuwer, MD, PhD

Resources

American Society of Neurophysiological Monitoring (https://www.asnm.org/page/Leadership)
American Neurodiagnostic Society - ASET (https://www.aset.org)

Examining bodies:
ABRET (https://www.abret.org)
ABNM (http://abnm.info)

Certifications:
R.EPT - https://www.abret.org/candidates/credentials/ep/
CNIM - https://www.abret.org/candidates/credentials/cnim/

NASS intraoperative neuromonitoring podcast: https://www.stitcher.com/podcast/anchor-podcasts/the-nass-podcast

FEATURED OPPORTUNITY

Arizona Cranial Neurosurgeon Opportunity

A hospital in central Phoenix is seeking a BE/BC cranial neurosurgeon to join its existing department. The facility prefers a candidate with fellowship training in cranial, including neuro-oncology, vascular, or skull base. The facility will consider both experienced neurosurgeons as well as 2020 residents or fellows.

The position is available due to expansion. The organization's large multidisciplinary neurosciences program is in Tucson and Phoenix, and the organization is developing a comprehensive neurological service line market to integrate with its current Tucson market.

The neurosciences program is growing, and call for the incoming surgeon is expected to build to 1:4. There are two facilities associated with the practice, a level II trauma center and a non-designated trauma center. The practice is also hiring neurologists and neurohospitalists, and it will have full PA support. The facility will be building a new clinic at each location.

The incoming neurosurgeon will be an integral part of pioneering and developing the state-of-the-art program. The neurosurgeon will be based out of one facility located in central Phoenix, and the program and its physicians will provide coverage to all of practice's Phoenix-area hospitals. The hospital will provide a competitive employed compensation package including salary, bonus-based incentives, relocation assistance, paid CME days plus allowance, paid malpractice and an excellent benefits package.

Taking a Crowded Market by Storm

Newcomer Lenox Hill Neurosurgery succeeds by innovating

By Bonnie Darves

Building a new neurosurgery program and launching it in a congested market with stiff competition hardly sounds like a recipe for success. But that's just what has happened since Lenox Hill Hospital's neurosurgery program hit the streets of New York City running in 2016.

The comprehensive group, which has expanded from three to 10 neurosurgeons and added two satellite hospitals since its founding, has achieved significant year-over-year growth. It also has developed a multifaceted, somewhat unusual formula to achieve its stature, according to Oleg Rivkin, PA, MBA, the group's administrative director. It brought in internationally renowned neurosurgeons—David Langer, MD, is its chair, and John Andrew Boockvar, MD, is co-chair—and pursued a fast track in establishing four discrete centers in brain tumor, spine, cerebrovascular, and pituitary and neuroendocrine.

"We were able to persuade some very good people to join us, and then we launched a sophisticated marketing campaign that targeted both the physician community and the public," Mr. Rivkin said. "That really put us on the map. And despite the highly competitive market surrounding us, we quickly managed to capture significant market share."

Lenox Hill, part of Northwell Health, has been extremely aggressive in embracing the digital and technology realms to increase awareness of its services. The group maintains an almost hyperactive presence on social media, including through its physicians, and maintains an active video repository on YouTube. The surgeons and staff use sophisticated chat technology, Dr. Langer notes, "to communicate directly with each other and with patients, rather than just using the EMR" to transmit important clinical information. The group schedules frequent clinical conferences and CME offerings that are open to clinicians throughout the community, an offering that has been particularly well received locally.

In addition, patients contemplating or planning surgery are invited to watch actual videos of the procedures they'll undergo and have access to a range of other technology-enhanced educational resources.

> **"We engage our young surgeons in pretty much everything—in discussions of what's 'hot on the plate,' in preparing the budget, and in hiring support staff."**
>
> – Oleg Rivkin, PA, MBA
> Administrative Director

The group also has created an innovative software program called the Patient Active List (PAL) that enables constant patient tracking, and another program called Playback Health (designed by Dr. Langer) that facilitates patient-engaged discharge planning. PAL effectively allows the care team to track patients throughout the hospital in real time. Playback incorporates a patient-specific recorded video session in which the physician goes over, in detail and supported by document screen shots, the specifics of the diagnosis, treatment, post-hospital and follow-up care plan, and other important issues.

"The video session has been extremely effective in engaging patients—what we know is that patients don't really understand or take in a lot of the verbal or written information we give them," Mr. Rivkin said, or in typical templated discharge information documents. "It also personalizes the experience when they see a video of the physician who cared for them."

The group has also adopted a practice that's distinctly old-fashioned: Each patient, on returning home, receives a personal, hand-written letter from his or her physician.

Embracive culture, compensation methodology support young neurosurgeons

Lenox Hill Neurosurgery's organizational and operational strategies are unusual in the field. When the group brings in young neurosurgeons, those physicians are immediately engaged in all aspects of the business rather than being relegated to the sidelines while they get up to speed. By design, Dr. Langer says, there's also no "competition for cases," and newly hired physicians are even encouraged to ask senior attendings to assist.

"We engage our young surgeons in pretty much everything—in discussions of what's 'hot on the plate,' in preparing the budget, and in hiring support staff," said Mr. Rivkin. "We really nurture our new neurosurgeons, and we've seen them flourish in large part because of how we mentor them."

The group takes an almost contrarian approach in its compensation structure. By design, Dr. Langer says, Lenox Hill Neurosurgery does not use RVUs (relative value units) in its compensation as an incentive for higher earnings or as a bar to meet or exceed, as he believes RVUs negatively affect both culture

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Lenox Hill Neurosurgery

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and operations. "I think that RVUs are an absolute atrocity intended to generate more volume," he said. "It's important to measure RVUs, but I don't like the way they affect group culture, by incentivizing more care or fostering a me-against-you environment."

In his view, taking RVUs out of the compensation picture and instead offering competitive compensation and incremental increases, removes financial pressure on young neurosurgeons. "It enables them to focus on doing the right thing. There's no notion of someone stealing a case from you," he said. He acknowledges that when he came in to start the department, he was insistent that he not be compensated on an RVU basis and hired senior neurosurgeons who were also willing to break with tradition.

> **"Doing this has paid off in spades for us. Our surgeons find it more fulfilling to do cases just because they're great cases, without worrying about how many RVUs something generates. It's been very gratifying."**
>
> **– David Langer, MD**
> **Chair**

The nontraditional compensation approach has been successful for Lenox Hill Neurosurgery, and the group's growth and increasing revenues have proved, in Dr. Langer's view, that good neurosurgeons don't need to be watching the RVU tally to perform well. "Doing this has paid off in spades for us. Our surgeons find it more fulfilling to do cases just because they're great cases, without worrying about how many RVUs something generates. It's been very gratifying. I get to see our junior personnel become more independent and taking more risk because they're comfortable in the environment."

Ms. Darves, an independent writer based in the Seattle area, is editor of Neurosurgery Market Watch.

UPCOMING U.S. NEUROSURGERY EVENTS

2019 American Society of Neurophysiological Monitoring (ASNM) Fall Symposium
❏ September 13
Boston, Massachusetts

CNS Annual Meeting
❏ October 19-23
San Francisco, California

SMISS: Society for Minimally Invasive Spine Surgery Annual Forum '19
❏ October 31-November 2
Las Vegas, Nevada

Western Neurosurgical Society 65th Annual Meeting
❏ November 8-10
Scottsdale, Arizona

SVIN: Society of Vascular and Interventional Neurology Annual Meeting
❏ November 20-23
Atlanta, Georgia

13th New York City Minimally Invasive Spine, Spinal Endoscopy, Robotics & 3D Navigation Symposium
❏ December 12-14
New York City, New York

Spine: Base to Summit 2020
❏ January 23-26
Vail, Colorado

2020 Winter Clinics for Cranial & Spinal Surgery
❏ February 23-27
Snowmass Village, Colorado

UPCOMING INTERNATIONAL CMES

ESMINT: European Society of Minimally Invasive Neurology Therapy Annual Meeting
❏ September 4-6
Nice, France

Walter E. Dandy Neurological Society 8th Annual Meeting
❏ September 5-8
Kathmandu, Nepal

Scoliosis Research Society (SRS) 54th Annual Meeting & Course
❏ September 18-21
Montreal, Canada

EANS 2019
❏ September 24-28
Dublin, Ireland

EUROSPINE 2019
❏ October 16-18
Messukeskus Expo Centre
Helsinki, Finland

15th Congress of the World Federation of Interventional and Therapeutic Neuroradiology
❏ October 21-24
Naples, Italy

ISASS Annual Conference
❏ February 26-28
San Juan, Puerto Rico

Global Spine Congress
❏ May 20-23
Rio de Janeiro, Brazil

▶ For more info regarding any of these events, or to post your upcoming CME or neurosurgery event, please contact ***info@harlequinna.com.***

CODING CORNER

Navigating Telehealth Coding and Billing in Neurosurgery

By Barbara Young

Many medical insurers, Medicare and Medicaid plans included, now recognize the need for telehealth services. This development has occurred for varying reasons, ranging from medical provider and patient convenience to cost efficiencies for the insurance companies. Medical insurers are now paying for this service to accommodate both medical practices' and patients' needs. Neurosurgery providers are already taking calls on the phone from patients both during and after hours. Using telehealth might help practices get paid for these time-consuming services.

Basically, neurosurgeons might already be doing telehealth work, and, with proper planning and appropriate billing systems in place, practices can obtain reimbursement. In some cases, delivering telehealth services might even help neurosurgery practices expand their service-delivery hours and service types while reducing costs. Telehealth also allows for patients in remote areas who don't have locally needed neurosurgeons to have access to care that they may not otherwise, and it can expand care to patients who are too ill, elderly or disabled to travel.

Telehealth is gaining traction and popularity. Recent surveys have shown that more than 64% of the population would be willing to have telehealth visits with their physician. Studies have also shown that telehealth visits can reduce cost by more than $100 per visit, and that 83% of nonemergent patient issues are resolved during the first telehealth visit. Following are some data points on telehealth:

- More than 50% of physicians surveyed are willing to see patients using telehealth; and 74% of patients are comfortable with telemedicine visits using technology instead of in person visits.
- Approximately three quarters of emergency, urgent care and doctor's visits can be handled safely and effectively over the phone; and 74% of patients report that they are comfortable with telemedicine visits using technology instead of in-person visits. 76% of patients care more about access to care than the human connection.
- More than half (53%) of patients said telemedicine somewhat or significantly increased their participation in treatment decisions.

Basically, each state is different, and neurosurgery practices need to know their own state regulations. Medicaid programs in 48 states and the District of Columbia currently allow telehealth in some form. Some plans pay a full fee for the service billed, while others reimburse a reduced fee. Commercial payers will typically have more flexibility than government payers regarding permitted telehealth services delivery.

To bill for telehealth services, effective January 1, 2017, practices must use POS code 02 Telehealth with their standard CPT coding for services rendered. New for 2018 was that the telehealth modifier GT was eliminated for professional services; it was replaced with POS 02 to provide attestation of interactive audiovisual communication. Some plans use modifier 95, which denotes a telehealth system that provides two-way, real-time audiovisual conferencing between a patient and the provider. To ensure successful billing, it is extremely important for compliance reasons that practices use a modifier when indicated by the payer and that they always maintain proper documentation.

> **"In some cases, delivering telehealth services might even help neurosurgery practices expand their service-delivery hours and service types while reducing costs."**

Payer parameters a key factor

Practices that want to engage more fully in providing telehealth services do face challenges, but these can be addressed. For starters, payers have varying telehealth compliance requirements, which will require research into each payer or plan. Additionally, there are computer systems and evolving billing rules to navigate, and differing payer parameters can be confusing to manage. Training and tracking also require appropriate systems and diligence.

Generally, dealing with and billing commercial plans for telehealth can be readily handled depending on state regulations and payer policies, and some even allow

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LEGAL CORNER

Data Breaches: Neurosurgery Practices Must Be Proactive and Prepared

By Bruce Armon

The potential exposure for neurosurgeons and their administrative leaders—in private practice and hospital-employed and academic medical center environment—is how to respond and act when a breach of the protected health information occurs. The HIPAA Security Rule regulations defined a breach as "the acquisition, access, use or disclosure of protected health information in a manner … which compromises the security or privacy of the protected health information."

If a suspected breach were to occur, there is a four-part test that must be undertaken. It's important to note that the presumption under the Security Rule is that a breach did occur, unless the analysis demonstrates that there is a low probability that the protected health information has been compromised.

Earlier this year, IBM Security and the Ponemon Institute released their 2019 Cost of Data Breach. The report was assembled following interviews with representatives from more than 500 companies across the private and public sectors, including healthcare and many other industries, that experienced a data breach during the measured timeframe. According to the report, healthcare had the highest industry average for the cost of a data breach, at approximately $6.45 million. This amount is 65% higher than the overall average costs of a data breach. The next highest-cost industries with respect to a data breach were the financial, energy and industrial sectors.

The Office for Civil Rights (OCR) at the U.S. Department of Health and Human Services (HHS) has enforcement jurisdiction with respect to alleged HIPAA privacy and security lapses within the healthcare sector. In 2016, there were 13 settlement agreements announced by OCR and 10 settlement agreements in each of 2017 and 2018. The financial penalties with respect to these settlements were significant: 2016 ($23.5M); 2017 ($19.4M); and $25.7M in 2018 which is the highest annual settlement amount to date. The average HIPAA settlement amount increased from $1M in 2015 to $2.6M in 2018.

Complaints, cost of addressing them, rising

The HHS received almost 26,000 health law privacy complaints in 2018, compared to just over 17,000 received in 2015, according to data published on its website. There is no private cause of action under HIPAA; all complaints are investigated by OCR through its regional offices around the country. If your practice or organization ever becomes involved in an OCR query, it can be very time consuming. And if a settlement is reached can be very costly to the organization.

> **"Neurosurgeons must be aware of their state privacy laws, and also be aware of multiple state laws if they or their employer practice in multiple jurisdictions."**

A recent study published from HHS entitled "Health Industry Cybersecurity Practices: Managing Threats and Protecting Patients" noted that four in five physicians have experienced some form of a cybersecurity attack and that $6.2B (billion) was lost by the U.S. health care system in 2016 due to data breaches. The study identified several critical cybersecurity threats that neurosurgeons and their practices/employers should be mindful of:

- Email phishing attacks
- Ransomware attacks
- Loss or theft of equipment or data
- Insider, accidental or intentional data loss
- Attacks against connected medical devices that might affect patient safety

In addition to activity at the federal level, many states are adopting their own privacy laws. Contrary to many relationships between federal and state statutes in which federal law preempts state law, HIPAA expressly allows a state that has a "more stringent" privacy law to be permitted. In essence, HIPAA creates a floor of privacy protections that a state can exceed. Neurosurgeons must be aware of their state privacy laws, and also be aware of multiple state laws if they or their employer practice in multiple jurisdictions.

Given the changing and increasingly risky environment, what steps should a neurosurgeon, practice or hospital employer take with respect to HIPAA privacy and security issues? Following are the key ones.

- Ensure that comprehensive policies and procedures are in place and update them as needed. Inevitably, if a complaint is received by OCR, they will want copies of the organization's policies and procedures.

- Train physicians and staff on best practices for information and data management. Practice can help make (close to) perfect.
- If there is a suspicion of a breach, act timely and proactively. Ignoring the issue won't make it go away.
- Put in place an incident response team that is operational. The IBM Security and the Ponemon Institute Report noted that having an established team in place can significantly lower the average cost of a data breach.
- Dedicate resources to compliance so that the licensed staff can focus their energies on providing high-quality care.

HIPAA is not going away. State privacy-related activities will continue to increase. OCR enforcement will likely continue, and HHS will continue to receive privacy complaints that will be investigated. Neurosurgeons and their administrative teams must continue to ensure the privacy and security of their patients' data and be aware of new challenges to maintaining the integrity of that data.

Bruce Armon is the chair of the health law practice at Saul Ewing Arnstein & Lehr, LLP. He regularly speaks to healthcare audiences and advises clients on regulatory, compliance and transactional activities within the health care delivery system, including HIPAA and privacy related issues.

CONTRIBUTORS WANTED!

Neurosurgery Market Watch welcomes submissions of articles of potential interest to practicing neurosurgeons. We are particularly interested in opinion articles about how trends occurring in the neurosurgery marketplace or in the health policy arena might affect the practice environment.

To discuss a potential idea, please contact Bonnie Darves at **425-822-7409** or **bonnie@darves.net**

Neurosurgery
MARKET WATCH™

Considering Potential Advantages of Rural Neurosurgery Practice

By Katie Cole

Most neurosurgeons are looking for jobs in metropolitan areas. I would estimate 80% of the candidates I work with are looking for jobs in the same seven to ten major cities. Community amenities are always very important as well as proximity to an airport, typically an international airport. Family ties are also very important, especially to younger neurosurgeons starting out with families.

Large, metropolitan cities are appealing for obvious reasons; however, they can also be very competitive for neurosurgery services and offer less compensation. And practice opportunities in smaller cities might offer perks that aren't available in larger, metropolitan areas.

A smaller community won't have as many other neurosurgeons or orthopedic spine neurosurgeons competing with a new neurosurgeon trying to grow a practice, for example. Rural neurosurgeons might also have more control over and decision autonomy in their practices, both in hospitals and in private practices. In addition, neurosurgeons in smaller communities usually have more input operationally, as administrators are more easily accessed, and physician engagement and participation is supported.

In addition, the landscape of rural neurosurgical practice is changing due to technology. Advances in telemedicine, mobile neurosurgery, and training programs for urgent operative techniques have been successfully implemented in many rural areas. Further, the development of guidelines for paired partnerships between rural centers and academic hospitals is giving rural neurosurgeons greater access to their urban colleagues.

On a personal level, many neurosurgeons report, building a practice in a smaller community often provides an environment where patients know you and appreciate what you do, and where neurosurgeons can follow patients throughout their lives and their family's lives.

Practice locations in smaller communities typically offer short commutes, affordable housing, and safer, more family-centered activities. Further, schools in nonurban communities tend to have smaller class sizes and many today offer a range of educational options and programs.

> **"Rural neurosurgeons might also have more control over and decision autonomy in their practices, both in hospitals and in private practices."**

Lastly, hospitals and practices in smaller communities often offer financial incentives above what metropolitan groups tend to offer. Neurosurgeons might have more negotiating power, and many of the offers include a higher salary, paid call on top of salary, a sign-on bonus, and oftentimes, either loan repayment assistance or a stipend while the neurosurgeon is still completing training. Hospitals in less populated areas have less competition and that sometimes enables them to higher starting salaries than urban hospitals might.

Nationally, it's well known that there is a shortage of neurosurgeons in rural areas, which means that patients in more rural areas have very limited access to neurosurgical care, particularly for trauma and brain and spine injuries. Neurosurgeons, particularly newly trained neurosurgeons, can be exposed to more types of cases in a condensed time frame when they practice in underserved areas. There are fewer subspecialists, for example, so general neurosurgeons have more opportunities to work on a wider variety of cases.

Smaller communities tend to offer much more expansive practice opportunities from a clinical standpoint, as well as better work/life balance and quality of life. Choosing the right practice opportunity is a huge and important decision, but it should be based on much more than just what an offer is on paper or what a city has available. It's important for candidates to first consider their individual goals and achievements, but they should also take a big-picture view on how they would like to practice and how they would like to live their lives on the whole.

I think that rural communities are overlooked because so many neurosurgeons think that they only want to practice in larger communities or that smaller towns don't offer high-quality medical care—but the latter isn't necessarily the case anymore.

Ms. Cole, a Denver resident, is publisher of Neurosurgery Market Watch and Surgery PA Market Watch.

Coding Corner

(continued from Page 5)

There often are substantial differences in billing for different insurance companies, as illustrated in the two examples below:

Payer A

This payer defines telehealth as the "use of electronic information and communication technologies to deliver health care to patients at a distance" in which they include "synchronous telemedicine." That means that the provider is communicating with the member through a screen (mobile phone, tablet, laptop or other device) in real time, and that session is billed with the modifier 95, "asynchronous remote patient monitoring" (RPM).

This refers to communicating with a plan member not in real time but instead using digital technologies to collect medical data and other personal health information and transmitting that information securely to healthcare providers for assessment and recommendations. It is billed with the modifier GT. "Asynchronous store and forward" refers to exchanging information with a patient not in real time but instead through pre-recorded video and/or digital images from one provider to a remote provider regarding a patient's health. This service is billed with the modifier GQ.

Payer B

This payer states that telehealth services are covered only when the patient is in an HPSA (Health Professional Shortage Area) or in a county outside of a metropolitan statistical area (MSA). An HPSA is a Rural Health Professional Shortage Area located either outside of am MSA or in a rural census tract. The term "originating site," at the time of service delivery, requires that the patient be physically located in one of the following locations: a physician or practitioner office, a hospital, a Critical Access Hospital (CAHs), a rural health clinic, a Federally Qualified Health Centers, a hospital-based or CAH-based Renal Dialysis Centers (including satellites), a Skilled Nursing Facility (SNFs) or a Community Mental Health Centers (CMHCs).

For this payer, the term "distant site" means the site where the physician or practitioner providing the professional service is located at the time the service is provided via a telecommunications system. Providers may be located in an eligible place of service. However, because distant-site reimbursement is not an FQHC or RHC service, it must be billed outside of the FQHC or RSA rate. This insurer requires use of HCPCS code Q3014, to indicate the separately billable payment for "hosting" the patient and to certify the telecommunication and presence of the beneficiary at an eligible originating site. That site is either POS 11 (office) or the appropriate TOB (type of bill) and revenue code for the eligible facility location. For processed claims, the "office" place of service (code 11) is the only payable setting for code Q3014.

These examples illustrate just how complex and variable billing rules can be, especially with Medicare and Medicaid. For a list of covered telehealth service codes for Medicare, go to https://www.cms.gov/Medicare/Medicare-General-Information/Telehealth/Telehealth-Codes.html.

Following are some tips that practices' billing and coding personnel must keep in mind when billing for telehealth services:

- Practice staff must become fully familiar with the telehealth and telemedicine requirements set by the insurers that the practice plans to bill.
- The CPT codes billed to the insurer are the exact same CPT codes that would be billed if the patient was seen in the office and will require the same level of support and documentation provided for that particular code.
- Remember to bill the CPT code with the designated modifier and place of service per the insurance company requirements. This is what tells the insurance company that the visit being billed is a telehealth visit.
- Don't mix up and bill the wrong modifier for the wrong insurance, forget to send with a modifier or send without the place of service as 02. The insurance company will either deny the claim or process it incorrectly as a regular office visit and pay it accordingly. If the practice is later audited, the insurer will seek recoupment of any excess payment.

Here is an example of when and how to bill for telehealth. Your patient, Ms. Smith, was recently seen for an in-office consultation and is scheduled for resective surgery. She calls the office and wants to discuss questions about her upcoming surgery. Her insurance is a commercial payer that allows billing for telehealth. Instead of speaking to her on the phone, which normally would not generate payment, or having her come back to the office, the neurosurgeon decides to provide and bill for a telehealth visit session.

The bill would be as follows: CPT 99213, Modifier 95, ICD-10 codes Z09, G40.919, Z01.818, and F41.9, and the place of service is listed as your office but designated on the claim with code 02. Documentation for this visit would require enough supporting evidence to substantiate billing for CPT code 99213.

For practices new to telehealth, the requisite coding and billing requirements can be daunting initially. But like many other aspects of medical billing, the challenges can be overcome with research and appropriate staff training.

Ms. Young is head of Barbara Young Medical Billing Services, a full-service medical billing, coding and collections company on Staten Island, New York, that has been in operation since 2003.

Note: Information included in this article was obtained through resources provided by the American Academy of Professional Coders.

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NEUROSURGERY POSITIONS

GENERAL NEUROSURGERY

Hattiesburg, MS: *Physician-Owned Clinic*

Phoenix, AZ: *Hospital Employed*

Macon, GA: *Private Practice*

Richland, WA: *Hospital Employed*

Dubois, PA: *Practice Employed*

Brooklyn, NY: *Hospital Employed, Trauma*

Cincinnati, OH: *Private Practice*

Tucson, AZ: *Hospital Employed*

Bakersfield, CA: *Private Practice, ownership in hospital and surgery center*

Gastonia, NC: *Hospital Employed*

Fort Wayne, IN: *Hospital Employed*

Brooklyn, NY: *Private Practice, Spine/Cranial Trauma*

Farmington, NM: *Hospital Employed, Spine/General Neurosurgery*

Las Vegas, NV: *Private Practice, Cranial*

Los Angeles, CA: *Private Practice*

PEDIATRIC NEUROSURGERY

Macon, GA: *Private Practice*

Tampa, FL: *Hospital Employed*

ENDOVASCULAR

San Antonio, TX: *Academic*

Union, NJ: *Private Practice*

Macon, GA: *Private Practice*

Fresno, CA: *Privademic*

Reading, PA: *Hospital Employed*

Tucson, AZ: *Hospital Employed*

CRANIAL

Tucson, AZ: *Hospital Employed*

Phoenix, AZ: *Hospital Employed*

SPINE

Long Island, NY: *Private Practice*

Reading, PA: *Hospital Employed*

Knoxville, TN: *Hospital Employed*

Tucson, AZ: *Hospital Employed*

Union, NJ: *Private Practice*

Rapid City, SD: *Private Practice*

Philadelphia, PA: *Privademic*

Greenville, NC: *Academic*

Phoenix, AZ: *Hospital Employed*

▶ For more information on these positions, or if you are interested in hiring a neurosurgeon for a permanent position, please contact ***katie.cole@harlequinna.com*** or call ***(303) 832-1866.***