

cnsq IS THE OFFICIAL NEWSMAGAZINE OF THE CONGRESS OF NEUROLOGICAL SURGEONS

# CongressQuarterly

WINTER 2021

# +HEALTH CARE ECONOMICS THE BIG PICTURE



Congress of  
Neurological  
Surgeons

**8** Hospital Restructuring: Can the Administrator to Provider Ratio Be Reduced?

**16** Cutting the Red Tape — Evaluation and Management (E/M) Coding Changes for 2021: What Neurosurgeons Need to Know

**CO-EDITORS:**

Martina Stippler, MD  
Ellen Air, MD

**EDITORIAL BOARD:**

Rushna Ali, MD  
Rimal Dossani, MD  
Jeremy Hosein, MD  
Michael T. Lawton, MD  
Clemens Schirmer, MD  
Khoi Than, MD  
Raphael Vega, MD

**MANAGING EDITOR:**

Michele Hilgart

**DESIGNER:**

CameronRush, Inc.

**CONGRESS OF NEUROLOGICAL SURGEONS  
2020-2021 OFFICERS**

**PRESIDENT:**

Brian L. Hoh, MD

**PRESIDENT-ELECT:**

Nicholas C. Bambakidis, MD

**VICE-PRESIDENT:**

Praveen V. Mummaneni, MD

**SECRETARY:**

Elad I. Levy, MD, MBA

**TREASURER:**

Daniel J. Hoh, MD

**PAST-PRESIDENT:**

Steven N. Kalkanis, MD

**CEO**

Regina Shupak

contact: 847-240-2500 or

[info@cns.org](mailto:info@cns.org)

**CONGRESS OF NEUROLOGICAL SURGEONS MISSION STATEMENT:**

The Congress of Neurological Surgeons exists to enhance health and improve lives through the advancement of neurosurgical education and scientific exchange.

*Congress Quarterly* is the official newsmagazine of the Congress of Neurological Surgeons, located at 10 North Martingale Road, Suite 190, Schaumburg, IL 60173. Members of the Congress of Neurological Surgeons may call 847.240.2500 with inquiries regarding their subscription to *Congress Quarterly*.

© 2021 by the Congress of Neurological Surgeons. No part of this publication may be reproduced in any form or language without written permission from the publisher. Published free of charge for the Congress membership with additional distribution. Send address changes to Congress Quarterly, 10 N. Martingale Road, Suite 190, Schaumburg, IL 60173.



**Congress of  
Neurological  
Surgeons**

## EDITOR'S NOTE



**Martina Stippler, MD**  
2020-21 Co-Editor  
[@martinastippler](mailto:martinastippler)

This issue of the Congress Quarterly takes a look at healthcare economics with a neurosurgical lens. Many hospital systems and private practices were financially challenged in 2020. While many emergent and urgent neurosurgical procedures proceeded as usual, even during the peak of the COVID crisis in the spring, elective procedures in many systems decreased dramatically, straining bottom lines. The post-COVID world will certainly be different; we still don't fully appreciate the lingering effects of COVID on different aspects of clinical practice, such as resident selection and training, national meeting formats, patient interactions and operative volume. Our specialty's vulnerability to the COVID shock was the inspiration for this issue's topic – Health care economics.

In this issue Dr. Levy and Dr. Scarrow examine two topics you may find interesting: How to measure the value of sub-specialty neurosurgeon within an academic department (beyond RVUs); next, how we should think about the ever-increasing administrator/ clinician ratio. By one measure this has increased by more than 3,000% over the last 35 years.

Dr. Gordon approaches the economics of neurosurgery from a different angle: he discusses how post-graduate education is funded and reports on his work examining the economic value of an on-call neurosurgery resident.

Stacey Lang asks whether the COVID crisis has placed private practice neurosurgeons at a disadvantage over employed neurosurgeons—or, indeed, is the opposite true? She asks whether the private practice surgeon's ability to be nimble and forward thinking, without a multi-layered approval process is an asset in uncertain times. Dr. Stephen Ondra picks up on this idea and he reports on current trends shaping health care economics now and in the future.

It has been my pleasure to curate the CNS Quarterly for you this year. I hope you enjoyed reading it and were as inspired by the presented ideas. As you look ahead to 2021 and begin to consider your philanthropic plans, I'd hope to draw your attention to the work of the CNS Foundation and the newly created Future Women Leaders in Neurosurgery Scholarship. Please consider donating to this fund at <https://foundation.cns.org/donate> or use the QR code to the right.



Thank-you to all our volunteer contributors. Without you there would not be a CNSQ. Thank you for sharing your wisdom, insight and know-how with all of us.

Stay healthy, stay resilient. Here's to a better 2021!

Yours,  
Martina Stippler

# CONTENTS



## Editor's Note

Martina Stippler

## President's Message

Brian L. Hoh

## LEADERSHIP IN NEUROSURGERY

**4** Worth of Neurosurgeons in Academic Departments Must Not Be Measured in Relative Value Units

Kunal Vakharia, Michael Courynea, Elad I. Levy

**6** The Economic Value of an On-Call Neurosurgical Resident Physician

William Gordon

**8** Hospital Restructuring: Can the Administrator to Provider Ratio Be Reduced?

Brian V. Nahed, Alan Scarrow

**10** Considerations for Private Practice Groups in the Age of COVID

Stacey Lang

**12** Cost Effectiveness in Cranioplasty: Investigational 3D-Printed Method for Patient-Specific Cranial Implant

Daniel Solomon, Jonathan A Forbes, Alice Xu, Joseph S. Cheng

**14** Major Trends Shaping the Economics of Health Care in a Time of Transformation

Stephen L. Ondra

**16** Cutting the Red Tape—Evaluation and Management (E/M) Coding Changes for 2021

Katie O. Orrico

**19** Navigating Corporate Relationships: The Do's and Don'ts for Entering a Contract

Khoi D. Than, Ali A. Baaj

**21** Disability Income Insurance: What Every Surgeon Needs to Know

Barry Zimmerman

**22** Oral Board Course

Garni Barkhoudarian, Robert J. Spinner

## FOUNDATION UPDATE

**24** Foundation Update

Elad I. Levy, Alex Khalessi, Martina Stippler

## INSIDE THE CNS

**26** Washington Update

Katie O. Orrico

## CNSQ INSIDE BACK COVER

Images in Neurosurgery

# PRESIDENT'S MESSAGE



**Brian L. Hoh, MD**  
President, Congress of  
Neurological Surgeons

I am honored to serve as President of the Congress of Neurological Surgeons, the organization which I hold so dear and owe so much. I hope to further advance CNS' mission of improving health through education and scientific collaboration despite current challenges and the extraordinary times we live in. My goal this year for the CNS is to support neurosurgeons and those who can impact our patients amidst the difficulties of the COVID-19 pandemic.

The Congress of Neurological Surgeons is dedicated to delivering the most relevant and cutting-edge educational content to help our members expand their knowledge and skills in our rapidly advancing specialty. We provide innovative and adaptable content and content delivery to ensure our programs remain robust and keep pace with advances in neurosurgical technology and technique while remaining personal enough to meet individual member's needs.

For all the CNS' focus on the future, even we could not have anticipated just how drastically and rapidly our world and our practices would change in 2020. It has been an incredibly challenging year in so many ways for all of us, our hospitals and practices, staff and patients. Through it all, the CNS has remained focused and responsive.

Last year, we were disappointed that we did not personally connect with you and were unable to showcase the incredible accomplishments of leaders in our field. We decided that protecting the health and practices of our members took precedence in unprecedented times. I know many of you were also disappointed when our 2020 Annual Meeting was cancelled due to COVID-19 but that does not mean you will miss the outstanding content we had planned.

I am proud to say that the CNS Executive Committee and Annual Meeting Committees are already working tremendously hard to ensure that many of the outstanding sessions originally planned will be incorporated into our 2021 CNS Annual Meeting in Austin, TX

---



---

> ONE THING IS CERTAIN  
THOUGH. I AND MY  
COLLEAGUES ON THE CNS  
EXECUTIVE COMMITTEE  
REMAIN STEADFASTLY  
COMMITTED TO WORKING  
ON YOUR BEHALF. WE  
WILL ALWAYS STRIVE TO BE  
YOUR TRUSTED, ESSENTIAL  
RESOURCE AS YOU NAVIGATE  
THE NEW CHALLENGES  
IN THE WORLD AND OUR  
PROFESSION. <

---



---

in September. When added to the program for our 2021 Annual Meeting Committee, I believe you will find this a truly unforgettable meeting. We will have the privilege of hearing from 2021's CNS Honored Guest Dr. William A. Friedman, as well as 2020's Honored Guests Dr. Bob S. Carter and Dr. Mark L. Rosenblum—and there will be an incredible lineup of keynote lectures from luminary minds outside of neurosurgery. The 2021 Annual Meeting, "Vision for the Future," will envision neurosurgery 25 plus years from now. What technology will we use to treat our patients in 2050? What will be the next evolution of telehealth or other innovative methods of bringing care to our patients? These are the questions that we will explore at the conference and hope to provide significant insights.

But most of all, we are looking forward to reconnecting with all of you, our colleagues, members, and friends—with masks on, of course, as we take precautions to help keep our attendees safe.

In the interim, our CNS Education Division and its army of volunteers have worked tirelessly to create new ways for us to stay connected with members and industry partners. We launched a catalog of new virtual learning opportunities and adapted existing programs to an updated platform, including the Skull-base Fellows Course and the CNS Career Guide for New Attending Physicians and Fellows. The CNS Townhall Xperience series, developed early in the pandemic, allowed members to communicate quickly and transparently about critical topics impacting their practices. A popular new Virtual Visiting Professor program brings experts in every neurosurgical subspecialty to programs across the country for a virtual visiting professor lecture experience. Plus, our webinar catalog continues to grow, bringing new clinical topics and exciting new formats like SANS Live!, which utilizes a question and answer, quiz-show format to help participants enhance their surgical knowledge and decision-making skills.

We have also partnered with the Society for Neuro-Oncology (SNO) to introduce a Virtual Brain Tumor Board series, in which globally recognized experts in brain tumor management discuss actual cases presented by our faculty. If you haven't already accessed these great new offerings, I encourage you to browse at [cns.org](http://cns.org).

Although it is still difficult to predict where our world and our specialty are headed over the year ahead, it seems increasingly clear



that we are not simply waiting for life to "return to normal" but, rather, we are learning to navigate and thrive under a new normal.

One thing is certain though. I and my colleagues on the CNS Executive Committee remain steadfastly committed to working on your behalf. We will always strive to be your trusted, essential resource as you navigate the new challenges in the world and our profession. And, we will work tirelessly to ensure you have the resources and information needed to stay ahead, including practical and timely content and dynamic and collaborative educational programs—virtually, and in-person when it is safe and practical to do so. We will also continue to monitor new developments, mapping out a path forward for neurosurgery. We will always listen to you, our members, and if there is anything the CNS can do or offer to help you and your colleagues navigate the year ahead, I encourage you to reach out to us at [info@cns.org](mailto:info@cns.org). 🇺🇸



Kunal Vakharia, MD



Michael Courynea, MBA



Elad I. Levy, MD, MBA

# Worth of Neurosurgeons in Academic Departments Must Not Be Measured in Relative Value Units

## Introduction

Health care has undergone a drastic transformation over the past decade including economic and regulatory changes that have unduly impacted academic medicine. Influenced by the Affordable Care Act, along with more pressures of the ongoing COVID-19 pandemic, have resulted in slow and constant pressure leading to closings of community hospitals.<sup>1</sup> As demonstrated by consolidations and acquisitions of rural hospitals unable to sustain financial solvency, the vital role of academic medical centers (AMCs) has become increasingly apparent. The value of academic medicine must not be simply measured utilizing relative value units (RVUs), or a standardized dollar value associated with different procedural codes, as this metric fails to capture the research, training, and regional resources generated from academic neurosurgical centers.

## Background to RVU measurement

If we analyze the RVUs of all the academic neurosurgeons in the U.S., we would find major variations in productivity based on RVUs from physician to physician. For example, see below the median RVUs benchmarks for an academic neurosurgeon (as published by MGMA) by academic rank.

Rank	RVUs
Overall	17,207
Assistant Professor	18,094
Associate Professor	19,570
Professor	17,617

RVUs take into consideration physician clinical practice, but fail to account for variations in reimbursement and practice expenses. Additionally, the median work relative value units (wRVUs) for neurosurgeons both in the academic and private practice setting (as published by NERVES by sub-specialty) exemplifies the variation in wRVUs generated by various subspecialties in neurosurgery. The table below assumes that >90% of the physician's practice is within the specialty listed, except for functional neurosurgery which assumes that >75% of the practice is specialty specific.

Sub-specialty	wRVUs
Endovascular	12,215
Spine	12,313
Crania	7,934
Pediatrics	4,771
Functional	5,246

Assuming only RVUs were used to measure worth of academic faculty, then spine and endovascular surgeons would require compensation 2.5-3 times that of their pediatric or functional neurosurgical colleagues. Additionally, time spent researching, writing, or lecturing could be viewed as a financial penalty or an opportunity cost, as any time spent not generating wRVUs would be uncompensated time.

Academic neurosurgical departments are truly the lifeblood of our profession, for their mission is to train the next generation of neurosurgeons. These departments spend precious resources on research, teaching, publishing, mentorships, weekly conferences, and invited guest lectures to promote and enhance the learning environment for our future colleagues. Is there a metric or tool to universally measure the effectiveness of these faculty contributions? Furthermore, is there a formula that chairs or academic departments can use to compensate faculty devoted to programmatic educational enhancement and content development. Without considering the intimate relationship between clinical productivity with other educational activities required to train neurosurgeons and advance quality neurosurgical care through science and technological developments, the myopic concept of relative value units fails.<sup>2</sup> Particularly in surgical subspecialties, how does one measure the expertise and training required for complex myelomeningocele closures for pediatric patients, complex intracranial pressure monitoring management for severe traumatic brain injury, or microdissection for complex skull base tumors? Without these critical experiences condensed into one regional program with sufficient volume to create exceptional care and reproducible training, academic physicians would have failed in both their obligation to properly train the next

generation, and would have left a critical void in caring for their community populations. Teaching translates almost directly into long-term service to the community and access to complex neurosurgical care. Perhaps we must begin to consider that academic physicians' productivity must also be measured in the success of their trainees who continue to advance education or ultimately provide exceptional care for patients in their community.

### Interdisciplinary Care

In addition to teaching, teaching hospitals continue to hold the ideal of research as one of the pillars of academic medicine. Recent years have seen the growth of some newer neurosurgical residency programs highlighting the persistent effort of the academic community to go beyond reproducing the teachings of old and embracing the ideals of the "third curve" in health care.<sup>3</sup> In place of the traditional fee-for-service model (first curve), the era of population-based medicine (second curve), the third curve has been driven by patient-centered care. The push to innovative technologies and personalized medicine with a consumer-driven focus on optimizing years lived means that physicians are not working in isolated silos. Collaboration has become the buzz-word with trends in most large health care systems focusing on preventative care and coordination of care between systems and specialties.<sup>3</sup> By breaking down silos, interdisciplinary care has led to advances endovascular techniques, spine biomechanics and technology, as well as novel mechanisms for delivery of neuro-oncological pharmacotherapies.

### Pushing the Envelope

Along with this, a revitalized focus on research amongst residents, research fellowships,

and a growth in competition for research grant funding. Nearly half of all National Institutes of Health extramural funding went to academic medical centers. Although some academic department take into consideration time and funding needed for physicians to pursue true research endeavors, the combination of extramural and institutional funding typically does not match typical Medicare RVU reimbursement.<sup>4</sup> This research contributes to training the next generation of physician scientists, who will accurately and appropriately interpret burgeoning data required to manage patients effectively. Compensation remains opaque for pursuing such activities, as there is a feeling that part of their endeavor is simply altruistic. Understanding the true value added of research and innovative clinical trials that offer patients more personalized strategic care enhances the worth of a health care system.

### "Sweat" Equity

Academic physicians typically work at tertiary care centers that end up treating a large volume of highly complex and sick patients. The value of care provided by academic medical centers is highlighted by the fact that such health centers constitute only 8% of hospitals, yet deliver nearly 40% of inpatient care for Medicaid patients.<sup>5</sup> Although RVUs attempt to capture information about the number and complexity of cases performed by a physician, it does not take into account the sweat equity involved in nurturing an academic institution and its goals within a community. Having a free-standing children's hospital has been shown to improve regional care of pediatric patients through immediate increased access to care, but as previously shown, pediatric neurosurgeons tend to generate the least wRVUs for a department.

### Recipe for Success

Like chocolate chip cookies, there are many recipes that yield winning results. On a personal note, we have found that worth starts with truly "valuing" all faculty members for their contributions, and convincing health care systems of the importance of each member of the faculty team. That which is not reflected in wRVUs must be compensated in research and community need. It is vital for teaching hospitals to have 24/7 coverage of stroke, trauma, and pediatric neurosurgical call. By educating stakeholders such as the health care system, the university, philanthropic entities, and the community, of the importance of each of the subspecialties in neurosurgery, only then does it become possible to create appropriate compensation models for teaching faculty. It is through insightful appreciation of the research, teaching, and community contributions that departmental funding is generated allowing compensation to reflect the real worth of teaching faculty, independent of the flawed system of RVUs. ■

### References

- 1 Rau J, Emmariem H. Some Urban Hospitals Face Closure Or Cutbacks As The Pandemic Adds To Fiscal Woes. In: NPR, ed. Online2020.
- 2 Grover A, Slavin PL, Willson P. The economics of academic medical centers. *N Engl J Med*. 2014;370(25):2360-2362.
- 3 Paz HL. Academic Medicine's Critical Role in the "Third Curve" of Health Care. *Acad Med*. 2016;91(5):613-614.
- 4 Retchin SM. Responding to the Marketplace: Workforce Balance and Financial Risk at Academic Health Centers. *Acad Med*. 2016;91(7):908-909.
- 5 Retchin SM, Xu WY. Medicaid Innovations and the Role of Academic Health Centers. *Acad Med*. 2018;93(10):1454-1456.



William Gordon, MD

# The Economic Value of an On-Call Neurosurgical Resident Physician

## Introduction

Neurosurgical residency training is rigorous and provides a structured educational environment, which exposes trainees to broad clinical experiences in a setting of mentorship, continuous feedback, and graduated responsibilities. The United States Graduate Medical Education (GME) system continues to produce high quality physicians through its postgraduate training programs.

## Background

Currently, Medicare and Medicaid comprise the principal means of federal support for GME with total funding exceeding \$15 billion per year.<sup>1</sup> The landscape of GME funding is complex and the Institute of Medicine (IOM)<sup>1</sup> and Medicare Payment Advisory Commission (MedPAC)<sup>2</sup> have proposed significant changes to GME to improve financial transparency and accountability.

In an effort to curb increasing Medicare cost, Congress passed the Balanced Budget Act of 1997, which reduced GME funding by \$9 billion and capped the number of Medicare funded GME residency positions at 1996 levels. Since that time, residency training programs have continued to expand in an effort to meet the public's need for well-trained and qualified physicians. As a result, 65.6% of hospitals have exceeded the number of positions allocated by Medicare.<sup>3</sup> Given the shortage of public funding and possible future cuts, programs should

consider innovative adjuncts to bridge the gap between public funding and the actual cost to train residents.

When quantifying the overall financial effect GME has on a hospital system, one must consider direct and indirect benefits as well as costs. Support from GME includes funding to teaching hospitals via direct graduate medical education (DGME) payments and an indirect medical (IME) adjustment to Medicare prospective payment system (PPS) inpatient rates based on the hospitals' volume of Medicare inpatients. DGME payments are intended to cover the salaries and benefits of residents, teaching faculty, program staff, administrative expenses, fees, etc. and can be explicitly measured. IME adjustments are focused on supporting the higher costs thought to be associated with providing patient care in a teaching hospital setting. These IME "costs" are more difficult to quantify, but may include increased ambulatory care costs,<sup>4,7</sup> inpatient costs through increased operative times, increased length of stay,<sup>8-13</sup> and increases in post operative infections.<sup>14</sup>

Indirect benefits to teaching hospitals include resident and academic faculty contributions to research, grants, publications, and innovative technologies. Also, the reputation of a teaching hospital system is generally elevated when coupled with residency training programs. A robust academic reputation can be financially

beneficial to the medical center with regards to faculty recruitment and retention as well as the ability to generally offer lower compensation rates, which can represent significant cost savings to the hospital.

## Research

The educational experience provided by on-call duties during residency training is integral in the path to producing a fully independent and competent neurosurgeon. Activities performed by residents while on-call are financially quantifiable, but are not reimbursable under the current payment system.

In our paper, *An Analysis of the On-Call Experience of a Junior Neurosurgical Resident*, we found that a single junior neurosurgical resident at our institution saw 1,929 new patients in consultation and performed 330 neurosurgical procedures and operations during 263 on-call experiences over the two-year study period.<sup>15</sup> Using the data collected for our previous study, we recently published a follow-up article entitled, *The Economic Value of an On-Call Neurosurgical Resident Physician*, which quantifies the theoretical billing activity these encounters would produce.<sup>16</sup>

We found that a single on-call neurosurgical resident at our institution produced 8,172 work relative value units (wRVUs) over the two-year study period (4,086 annually), from indirectly and directly supervised activities.<sup>16</sup> Indirectly supervised activities accounted for 7,052



wRVUs and included: consults, admissions, and placement of external ventricular drains (EVDs) and intracranial pressure monitors. Directly supervised procedures were defined as emergency operations occurring while on-call with the attending physician physically present. To provide a conservative estimate of the actual value of an on-call resident in these situations, we used only the primary Current Procedural Terminology (CPT) code and a modifier-80 (surgical assistant) to represent the resident's contribution to the case, which allows an assistant surgeon to bill for 16% of the total billable amount of the operation. This resulted in an additional 1,120 wRVU for a single on-call resident over the study period (560 wRVU annually). Extrapolating these data to encompass all on-call neurosurgery residents in our program resulted in 39,550 wRVU produced over the two years from indirect and directly supervised activities, or 19,775 wRVU annually.<sup>16</sup>

Given the wide variation of reimbursement per wRVU and in order to assign a monetary value, we chose the 2014 Medical Group Management Association (MGMA) nationwide median reimbursement of \$84.37 per wRVU for neurological surgery. This resulted in potential billing of \$689,513 (\$344,766 annually) for a single neurosurgery resident's on-call duties and \$3,336,772 (\$1,668,386 annually) for our entire resident cohort.<sup>16</sup>

## Discussion

It is estimated that the direct cost to train a neurosurgical resident is \$172,563 per year.<sup>17</sup> As proposals for decreasing GME funding continue, along with increasing demand for competently trained physicians, the question becomes: can we afford to continue funding residency positions using the current model?

The resident training relationship is one that is mutually beneficial and the value of resident call coverage is different depending on the point of view. For the resident, on-call duties provide exposure to a broad range of neurologic pathologies<sup>15</sup> and allow them to function with increasing levels of autonomy through direct and indirect supervision. It can also be financially valuable to hospitals and attending physicians.<sup>16</sup> The value to a hospital can be estimated as the differential cost of hiring alternative coverage and the cost of resident coverage.<sup>3</sup> Since nonphysician providers typically earn a salary that is double that of residents<sup>18</sup> while working approximately half the number of hours,<sup>19</sup> a hospital may need to hire three or more nonphysician practitioners to replace a single resident physician.<sup>3</sup> Having on-call residents is also a benefit to the attending physician as it provides the convenience of not needing to be inhouse during nonworking hours, as well as increasing operational efficiency by allowing him or her to be involved in higher-

yield activities. Another, not so obvious beneficiary of resident work, are private insurance companies. Since attending physicians are prohibited from billing the Centers for Medicare and Medicaid Services (CMS) or private insurance companies for indirectly supervised procedures (performed by residents if the attending was not physically present), privately insured patients receive the benefit of care delivered by the resident physician at no cost to the insurance company.<sup>20,21</sup>

## Conclusion

In our study, we found that neurosurgical residents could more than cover the estimated \$172,563 in annual direct costs of their training from on-call activities alone if they were allowed to bill for these services. Also, insurance companies have demonstrated that they are willing to reimburse for operative assistants by paying an additional 16% and 13.6% of the surgical fee if the assistant is a physician or physician extender, respectively. If hospitals were allowed to bill insurance companies for resident physicians as assistants under the same modifier-80 guidelines as above, this would account for a significant source of funding to help cover the gap in current GME funding and the direct costs of training.

## References

- 1 Institute of Medicine. *Graduate Medical Education That Meets the Nation's Health Needs*. National Academies Press; 2014.
- 2 Medicare Payment Advisory Commission. Report to the Congress: *Aligning Incentives in Medicare*. Medicare Payment Advisory Commission; 2010.
- 3 Wynn BO, Smalley R, Cordasco KM. Does it cost more to train residents or to replace them? A look at the costs and benefits of operating graduate medical education programs. RAND Corporation.

**NOTE:** A full reference list is available in the online issue at [cns.org](http://cns.org)



Brian V. Nahed, MD, MSc

Alan Scarrow, MD, JD

# Hospital Restructuring: Can the Administrator to Provider Ratio Be Reduced?

According to a 2017 report from Athenahealth, hospital administrator positions increased by 3200% between 1975 to 2010 while the number of physicians increased by 150% and the U.S. population increased by 133%.<sup>1</sup> It's a shocking statistic. One that reveals five decades of health care transformation from a small association of clinicians and hospitals to a large, complex, highly specialized, and regulated industry dominated by regional and national systems that consume \$3.5 trillion annually and account for nearly 17% of the U.S. gross domestic product. Given the amount of money at stake and the fact that 330 million Americans rely on our health care system, it's not surprising that health care has become a business led by non-clinical administrators.

## The Business of Health Care

Health care is unlike any other business. Nonetheless, a health care system must execute the same fundamentals that all businesses do if they wish to survive. It must turn its operations into cash to pay employees, invest in infrastructure, repay debt, and return profit. To that end, health care administrators are divided into two groups: those dedicated to top line growth (e.g., sales and operations) and those dedicated to bottom line growth (e.g. personnel and resource management). Over the past ten years, top line growth

---

> THE KEY TO MANAGING COMPLEXITY IS A COMBINATION OF AUTONOMY AND COOPERATION. FRONT-LINE WORKERS WITH THE AUTONOMY TO MAKE DECISIONS ARE CAPABLE OF IMPLEMENTING MORE EFFECTIVE SOLUTIONS. BUT THEY ALSO CARRY THE RESPONSIBILITY TO COORDINATE AND COOPERATE WITH OTHERS IN THE HOSPITAL WHO MAY HAVE A DIFFERENT FOCUS BUT SEEK THE SAME GOAL. <

---

has been steady with revenue for physician and hospital services increasing annually at 3.6% and 5.1% respectively.<sup>2</sup> Historical increases in revenue relied on added patient volume, often driven by the reputation of the caregivers and hospitals. However, the growing popularity of narrow insurance networks, which limit patients' choice of facility or provider, has forced many hospitals to hire marketing, advertising, network development, and contracting professionals to drive patient volume. While understandable, those additional hires have also added to health care administrative burden and related costs.

Bottom line growth through savings and efficiency has been more elusive in

health care. It takes just as long to listen to a patient's history, dispense medicine, or comfort a grieving family today as it did fifty years ago. Similarly, electronic health care records (EHRs) may have improved the coordination of care, but they haven't made patient care faster. As the cost of providing care has risen, health systems have hired more managers and administrators to find ways to cut costs wherever possible.

Outside of health care, successful businesses have a clear mission to deliver a product or service at a price and quality point that makes the business competitive in their market. The process of creating and selling that product or service is continuously measured and analyzed. Hospitals differ in

that they have multiple, concurrent missions of patient care, research, teaching, and charity. Those concurrent, often conflicting missions, obscure true measures of price and quality. As a way around that obscurity, to slow rising costs, and define optimal care, government officials and insurers created numerous publicly reported metrics starting in the 1990s to measure and pay for physician and hospital performance. Unfortunately, most metrics have been too generic (e.g., readmission within 30 days) or fail to isolate an aspect of care related to actual outcomes, making them void of clinical meaning. Further, lagging indicator metrics such as length of stay or net profit have supported siloed, short-term goals that often ignore the long-term needs of health systems and the communities they serve. Despite these defects, the collection and analysis of metrics has grown in number and scope, robbing caregivers of their time, adding to the administrative burden, and drawing attention away from clinical care.

## Profit and Metrics

Henry Ford once said, “a business that makes nothing but money is a poor business.” Businesses get into trouble when their mission prioritizes profit over adding distinctive value to their customers. While the last fifty years have proven that health care can be a profitable business, the shift in focus has displaced the patient as the first priority. Health care’s ongoing struggle to deliver the best care in the most cost-effective manner, has created a long, bloated list of both metrics and administrators.

## What is the Solution?

### *Simplifying the Organizational Structure*

Health system administrators have responded to the growing complexity of health care by creating even more complex organizational structures.<sup>3</sup> The small hospital leadership team of fifty years ago has given

way to large executive teams covering marketing, operations, compliance, finance, human resources, quality, safety, logistics, supply chain, information management, and patient relations to name just a few. This complexity has added administrative burden without a proportional improvement in patient outcomes.

The key to managing complexity is a combination of autonomy and cooperation. Front-line workers with the autonomy to make decisions are capable of implementing more effective solutions. But they also carry the responsibility to coordinate and cooperate with others in the hospital who may have a different focus but seek the same goal. A surgeon, for example, may know what resources are needed for an operation, but also has a responsibility to consider the cost of those resources and balance those needs with the demands of the entire health system. Combining autonomy and cooperation can lead to greater efficiency and reduce the need for managers and administrators.

### *Reign in Metrics and Regulations*

Each year the government generates 3,500 to 4,800 new regulations with a cost estimated at \$1.88 trillion.<sup>4</sup> Many health care regulations have added administrative burden as hospitals must hire teams of attorneys and compliance professionals to adhere to those regulations. Regulations beget additional metrics necessary to assess compliance. The generation and analysis of those metrics is performed by administrators that divert resources away from frontline workers and patient care. The number and scope of regulations and their associated metrics must be curtailed. As an example, the Health Insurance Portability and Accountability Act (HIPAA) created a set of well-intended regulations designed to protect patients’ private medical information. Yet in restricting caregivers from sharing patient information it has resulted in fragmented, siloed care

filled with repeated tests, metrics to monitor HIPAA compliance, and teams created to resolve potential breaches. Reducing regulations that obstruct care delivery and the associated metrics would free individual providers and health care systems to focus on appropriate and innovative patient care with less administrative burden.

## Conclusion

While health care delivery continues to increase in complexity, the growth of administrative complexity has resulted in higher costs, less autonomy, and a growing list of ineffective metrics. Streamlining the administrative complexity created over the past fifty years is a task unlikely to be taken up by health care administrators. As Upton Sinclair once wrote, “it is difficult to get a man to understand something when his salary depends on him not understanding it.” In this moment, for this generation, the challenge falls to providers to lead the effort and join with our administrative colleagues to deliver the best care in the most efficient manner possible. ■

## References

- 1 Cantlupe, Joe. “Expert Forum: The rise (and rise) of the healthcare administrator.” <https://www.athenahealth.com/knowledge-hub/practice-management/expert-forum-rise-and-rise-healthcare-administrator>. Accessed 11.2.20
- 2 American Medical Association. “Trends in Healthcare Spending.” <https://www.ama-assn.org/about/research/trends-health-care-spending>, <https://www.ama-assn.org/about/research/trends-health-care-spending>. Accessed 11.2.20
- 3 Morieux, Yves, and Peter Tollman. *Six Simple Rules: How to Manage Complexity without Getting Complicated*. Harvard Business Review, 2014.
- 4 Tanner, Michael. *The Inclusive Economy: How to Bring Wealth to America’s Poor*. Washington, DC: Cato Institute, 2018.



Stacey Lang

# Considerations for Private Practice Groups in the Age of COVID



While the immediate impact of the COVID-19 pandemic on private practice groups is obvious to most, the associated opportunities are perhaps less so. According to a recently released AMA survey, the average number of weekly office visits per provider fell by over 50%. In addition, while physicians, on average experienced a 32% drop in revenue since February, approximately 20% saw drops of 50% or more. Less than 20% of physicians reported no drop in revenue.

Private practice physicians continue to be impacted well beyond declines in patient volumes. Increased costs related to PPE and other mitigation efforts, staff concerns related to potential COVID-19 exposure, and reduced capacity and access at partner hospitals along with the rise in cases that we are experiencing nationally require more than targeted strategies for practice process change alone.

Over the past seven months, changes in practice models implemented following the emergence of COVID-19 have been largely

reactionary in nature. Given the recent surge in cases and lack of clarity regarding the timing and availability of a safe and effective vaccine, now is the time for private practice providers to evaluate all aspects of the business of medicine as well as the clinical implications related to providing neurosurgical care in this new reality. A thoughtful and methodical approach to practice changes will help to avoid unnecessary costs and re-work resulting from a hastily developed and fragmented plan.

In many ways, the private practice structure affords a distinct opportunity to address the avalanche of changes experienced in the national health care delivery system. The degree to which decisions can be finalized and substantive change can be accomplished is significantly higher within a private practice structure as compared to an "employed" model. This ability to be nimble and forward thinking without a multi-layered approval process to navigate can be invaluable in ensuring a sustainable and fiscally sound practice for the future.

What follows are both short-term and long-term considerations for practice restructuring in the COVID-19 era.

## Staffing

No matter the size of the practice, staffing challenges are often among the most difficult to solve. Now more than ever, is the time to re-evaluate not only the staffing complement but also skill set. Changes in methods of care delivery may mean that even the most skilled staff need to be re-trained or re-deployed to better support practice needs. A migration away from in person visits to telemedicine will require exceptional communication skills for front-line staff. The ability to effectively communicate, and more importantly quickly establish rapport in the absence of a face-to-face encounter is not intuitive for many. The need for a shift in resources can best be determined through a comprehensive review of both back-office and front-office staffing. Factors to consider when performing this evaluation include:

- Are the medical assistants and other support staff competent in the use of any new technology?
- Are staff performing adequate pre-appointment screening to ensure that the patient is appropriate for neurosurgical evaluation?
- Have the appropriate diagnostic studies been performed and are they accessible?
- Have appropriate screening policies been implemented for staff to reduce the risk of COVID-19 transmission?

- Are employee policies in place to address out of state travel and recommended quarantine upon return?
- Is appropriate PPE available in the office for use by employees?
- Are all necessary policies and procedures in place to address the integration of any new equipment or other methods to enhance patient access and ensure confidentiality?
- Is billing staff adequately trained to capture all appropriate charges related to new methods of care delivery?
- Is the current staffing complement still appropriate given changes in practice patterns and patient expectations?
- Does a mechanism exist to track and report patient satisfaction scores related to the outpatient experience?

## Facility

Social distancing requirements, declines in in-person visits, and the potential need to incorporate additional technology into a practice may well mean that facility re-purposing and re-configuration is necessary.

- Is the existing waiting room space the appropriate size given a likely on-going decrease in face-to-face patient visits?
- Have seating and access/egress been modified to ensure social distancing requirements?
- Have barriers been installed in reception and check-out areas to decrease the risk of exposure?
- Is the space used for telemedicine visits conducive to an effective clinician to patient interaction? The space is private, quiet, and poses no risk of HIPAA violations.
- Is it necessary for all current staff to be physically present in the office to function effectively?
- Can some staff be moved to a work from home model that could decrease overall space needs and related costs?

## Delays in Surgical Scheduling

As in all other aspects of daily life, COVID-19 has dramatically affected hospital operations. The reluctance of patients to undergo elective procedures due to the risks of in-hospital exposure continues. In addition, as many health systems across the country limit or even prohibit elective procedures, patients continue to require care. As access improves, a mechanism must be implemented to ensure that patients are prioritized in order of clinical need. The difficulty of this is compounded by, in many cases, delays of several months from the time of initial evaluation to the time that surgery can be scheduled. The following questions related to current practice operations may assist with mitigating any risk associated with patients who have been diagnosed as requiring surgical intervention but who cannot be scheduled for surgery due to outside factors.

- What mechanism exists to ensure awareness of changes in patient condition that may indicate a need for immediate treatment?
- How is ongoing patient communication managed? Are regular check-ins scheduled? How are these interactions documented?
- Is an organized method in place to ensure that these touchpoints and phone calls are billed as appropriate?
- Have algorithms been developed to assist scheduling staff in recognizing the need for urgent treatment that serves to limit the need for additional direction on a case-by-case basis?
- Have patient education materials been supplemented/updated to include information related to treatment expectations, revised surgical scheduling guidelines and testing requirements?

Given the duration of the pandemic thus far, it is difficult to remember what normal practice was and to imagine that we will, at

some point, return to normal, albeit a new normal. While the future contains many unknowns, what is certain is that now is the time to prepare for changes that will be permanent—fewer face-to-face interactions, increased use of telemedicine and other technology, associated billing requirements, and perhaps difficult decisions related to long-tenured staff and established space and even hospital relationships. While all certainly present challenges, opportunities also exist. By leveraging the advantages of the private practice model combined with the development of a comprehensive strategy for the future, a forward thinking practice will be well positioned for success in this new world. ■

## References

- 1 AMA Physician survey details depth of pandemic's financial impact; Andis Robeznieks, Senior News Writer. <https://www.ama-assn.org/practice-management/sustainability/physician-survey-details-depth-pandemic-s-financial-impact>. October 28, 2020

**Stacey Lang** is Executive Administrator II at the University of Pittsburgh Medical Center and a volunteer with the Neurosurgery Executives' Resource Value & Education Society (NERVES). NERVES was established to help neurosurgery executives and administrators strengthen their practices. By sharing and collaborating, we enhance the quality of patient care by benchmarking key metrics. Our 200+ members work in various models — from academic to private practice and from hospital-employed to multi-specialty groups.



Daniel Solomon



Jonathan A Forbes, MD



Alice Xu



Joseph S. Cheng, MD, MS

# Cost Effectiveness in Cranioplasty: Investigational 3D-Printed Method for Patient-Specific Cranial Implant

## Introduction

Neurological surgeries in the United States account for a substantial portion of national health care costs. Advances in science and technology increasingly help surgeons develop more efficient and cost-effective solutions to address these neurosurgical problems. Finding novel ways to reduce surgical expenditures helps to reduce the financial burden on hospital and patient without compromising quality of care. A common neurosurgical procedure represents one such example, where advances in 3D printing and investigational technology are helping to make production of patient-specific cranial implants more cost-effective.

## Cranioplasty

Cranioplasties are commonly performed weeks to months following a decompressive craniectomy.<sup>1</sup> The cranioplasty procedure, performed to restore cosmesis and protect the brain from mechanical stress and unchecked atmospheric pressure, typically utilizes the patient's own bone flap harvested during the initial procedure. This autologous bone flap is stored in a sterile fashion either via cryopreservation or in a subcutaneous pouch until the patient is cleared for re-implantation. While autologous bone is preferred due its to ease and cost-effectiveness, a number of complications (e.g, infection, flap comminution, bony resorption) can arise, requiring an alternative method of calvarial reconstruction.<sup>2</sup> At the University of Cincinnati College of Medicine's primary teaching hospital neurosurgical providers typically contract through a third-

party vendor to request a patient-specific cranial implant (PSCI). Most vendors require a thin-cut, non-contrast CT scan of the head to manufacture a polyetheretherketone (PEEK) PSCI. Clinically this method results in favorable cosmesis and outcomes, but is costly.<sup>3</sup> Currently, engineers at our institution are finalizing design of a freeware program that automates construction of a virtual model of the cranial defect after thin-cut CT imaging of the head has been obtained (**Figure 1**). A negative of this virtual model can subsequently be printed in polycarbonate, sterilized prior to the OR, and used intra-operatively with polymethyl methacrylate (PMMA) cement to recapitulate a cosmetically-precise, PSCI. Given the pressing need to reduce health care expenditures in the current financial climate,<sup>4</sup> we sought to evaluate the financial utility of this investigational strategy.

## Cost of Third-Party Implant

PEEK PSCIs are a popular method for calvarial reconstruction, when autologous implants are not available. The aesthetics and complication rates are comparable to that of autologous bone.<sup>5</sup> The major downside is the costs of implant production and delivery using a third-party vendor. The average cost for the implant has been cited as \$12,600.<sup>3</sup>

## Costs of 3D-Printed PSCI

The investigational method for producing a cranial implant utilizes a polycarbonate mold that is 3D-printed outside the operation room, sterilized prior to the procedure, and

used intra-operatively with PMMA cement to create a PSCI. A virtual model of the mold is generated using DICOM CT data processed through the investigational freeware program (**Figure 1**). An entry-level 3D printer, which can reasonably be obtained for under \$1500 is used to print the mold using polycarbonate (PC) material.<sup>6,7</sup> The polycarbonate mold is sterilized and prepared for the OR. A kilogram of PC filament retails for approximately \$20-25 and can produce roughly 7-10 molds.<sup>3</sup> Intra-operatively, PMMA bone cement is used with the mold to create the actual PSCI. One preparation of PMMA bone cement that can be used intra-operatively for creation of the PSCI is the Stryker Spineplex Bone Cement (Stryker, CA), although cheaper alternatives can be found. Two units of the bone cement are often required to create the implant; the estimated cost of two units of Stryker Spineplex Bone Cement is \$1,250. The required time in the operation room to create the implant from the mold is estimated in our analysis at 20 minutes. While outdated, a 2001 study determined that the average cost of a minute of O.R. time in the U.S. is \$62/min.<sup>4</sup>

Calculating the extra expenses per procedure utilizing this strategy, minus the initial purchase of entry-level 3D printer, yields: PC material (\$3) + PMMA (\$1,250 x 2) + OR time (\$1,240) = approximately \$3,750.

## Hospital Reimbursement

Increasingly, hospital reimbursement from CMS for acute-care, inpatient procedures has transitioned to a prospective payment system where ICD-10 and Medicare-



**Figure 1:** (A) and (B) cadaveric specimen following right decompressive craniectomy. (C) Same specimen pictured following cranioplasty with patient-specific cranial implant. PSCI printed/constructed using investigational freeware.

severity diagnosis-related group (MS-DRG) codes (further modified by factors inherent to the region and hospital) are used to calculate a predetermined payment for a procedure. These types of payments, made using the CMS acute inpatient prospective payment system (IPPS), totaled \$118 billion and accounted for approximately 17% of Medicare spending in 2017. Increased utilization of predetermined, fixed payments rewards hospital and provider efficiency.<sup>6</sup>

Routine cranioplasties without major complication or comorbidity utilize DRG-024.<sup>7</sup> CMS payment can be determined by multiplying the relative weight assigned to DRG-024 and the hospital base payment rate. The relative weight for each DRG code is determined by the expected relative costliness of inpatient treatment under the care of a reasonably efficient provider. The predetermined amount is intended to cover the cost of the implant, as well as the cost of all inpatient services, including compensation of the health care team. Thus, savings from implant costs are transferred directly to the hospital system and indirectly to the patient.

## Discussion

The CNS Leadership Institute prepares its matriculants to tackle new initiatives on issues affecting neurosurgery, both nationally and internationally. Cost-containment is currently a major issue in the United States, where health care costs accounted for

approximately 18% of the GDP in 2018. These considerations have become especially relevant in light of the trend of decreasing hospital reimbursement associated with the current COVID-19 pandemic. In June, the World Bank predicted the global economy would shrink by 5.2% in the ensuing year. This would represent the largest recession since the Second World War.<sup>8</sup> Finding novel ways to reduce hospital spending is a major priority for hospital networks, insurance providers, and the federal government.

In this analysis, we reviewed the cost of PSCI for cranioplasty through third party vendors, which had been reasonably estimated at \$12,600. We calculated the costs associated with creating a PSCI using investigational freeware, 3D printing of a polycarbonate mold, and intra-operative molding with PMMA at \$3,750. This provided an estimated savings of approximately 70%. As both options of third-party vendor manufactured PSCI and investigational 3D printed PMMA implant fall under the umbrella of cranioplasty, the same DRG code would be utilized and the CMS reimbursement would be the same for both procedures. The discount of approximately 70% of the cost of the PSCI would be transferred directly to the hospital system and indirectly to the patient. Cost-effective strategies such as the investigational method discussed in this article are expected to gain increasing importance as the United States continues to push towards

value-centric health care. The authors would like to thank the CNS Leadership Institute for providing relevant direction and guidance for this analysis. [4](#)

## References:

- 1 Iaccarino C, Koliass AG, Roumy L-G, Fountas K, Adeleye AO. Cranioplasty Following Decompressive Craniectomy. *Front Neurol* [Internet]. 2019 Jan 29 [cited 2020 Oct 28];10:1357. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/32063880>
- 2 Beez T, Munoz-Bendix C, Steiger HJ, Beseoglu K. Decompressive craniectomy for acute ischemic stroke. Vol. 23, *Critical Care*. BioMed Central Ltd.; 2019.
- 3 Kinsman M, Aljuboori Z, Ball T, Nauta H, Boakye M. Rapid high-fidelity contour shaping of titanium mesh implants for cranioplasty defects using patient-specific molds created with low-cost 3D printing: A case series. *Surg Neurol Int* [Internet]. 2020 Sep 1 [cited 2020 Oct 29];11. Available from: <https://pubmed.ncbi.nlm.nih.gov/33033650/>
- 4 Macario A. What does one minute of operating room time cost? [Internet]. Vol. 22, *Journal of Clinical Anesthesia*. *J Clin Anesth*; 2010 [cited 2020 Oct 29]. p. 233–6. Available from: <https://pubmed.ncbi.nlm.nih.gov/20522350/>
- 5 Punchak M, Chung LK, Lagman C, Bui TT, Lazareff J, Rezzadeh K, et al. Outcomes following polyetheretherketone (PEEK) cranioplasty: Systematic review and meta-analysis. Vol. 41, *Journal of Clinical Neuroscience*. Churchill Livingstone; 2017. p. 30–5.
- 6 Medicare Hospital Prospective Payment System How DRG Rates Are Calculated and Updated Office of Inspector General Office of Evaluation and Inspections Region IX. 2001.
- 7 ICD-10-CM/PCS MS-DRG v37.0 Definitions Manual [Internet]. [cited 2020 Oct 29]. Available from: [https://www.cms.gov/icd10m/version37-fullcode-cms/fullcode\\_cms/P0002.html](https://www.cms.gov/icd10m/version37-fullcode-cms/fullcode_cms/P0002.html)
- 8 COVID-19 to Plunge Global Economy into Worst Recession since World War II [Internet]. [cited 2020 Oct 30]. Available from: <https://www.worldbank.org/en/news/press-release/2020/06/08/covid-19-to-plunge-global-economy-into-worst-recession-since-world-war-ii>



Stephen L. Ondra, MD

# Major Trends Shaping the Economics of Health Care in a Time of Transformation

Economic strain and social changes have resulted in an era of rapid and ongoing health care transformation in the United States and around the world. While a worldwide phenomenon, the United States is experiencing some of the most profound and disruptive changes due to the longstanding spending spiral. Health care spending in the U.S. now exceeds \$3.5T, accounting for 18% of the national gross domestic product (GDP). By 2026, spending is expected to reach \$5.7T and account for 20% of GDP.<sup>1,2</sup> When compared to other comparably industrialized nations, the U.S. spends about a third more on health care services without a commensurate improvement in population health outcomes.

Using the common definition of health care value:

$$\frac{\text{health outcome quality}}{\text{cost of care}} = \text{Value}$$

We see that the U.S. has high quality but low value health care system.

In response to the low value of the “health care product” both government and private sector care purchasers care have become increasingly assertive in pushing the system towards solutions that will improve the value received for the health care services for which they are paying. Out of necessity, government has taken a leading role in this effort. Over 60% of Americans now believe that access to reasonable and affordable health care is a fundamental

human right that government is ultimately responsible to ensure—the cost of health care is increasingly carried by government.<sup>3</sup> In fact, government programs now account for 40% of all health care coverage and 50% of all health care spending. This is expected to increase to 48% of coverage and 60% of all spending by 2026, assuming that there are no major changes in the system.<sup>4</sup>

The last major government health care action was the 2010 passage of the Patient Protection and Affordable Care Act (ACA) or Obamacare.<sup>5</sup> In addition to increasing coverage to over 25 million previously uninsured Americans, the law profoundly changed the health insurance industry by legislative and regulatory tools that essentially eliminated underwriting of preexisting conditions and provided for the guaranteed issuance of insurance. The law also created the Center for Medicare and Medicaid Innovation (CMMI) to accelerate the shift from a volume driven fee-for-service (FFS) model to a more value-based reimbursement (VBR) model, by incentivizing participation in Accountable Care Organizations (ACO’s), Patient Centered Medical Homes (PCMH’s) and Bundled Payments for Care Improvement (BPCI). These models have predictably seen varying degrees of success and, based on the initial experience, are now being modified and improved in next generation models. In addition to government, private businesses are pushing the private payers that manage their programs to be ever more aggressive in creating higher value for services. As a result, we see large payers

tying over 60% of their contracts to some form of value driven performance. While the minority of these programs have true downside performance risk today, there is a slow shift in that direction. For example, capitated global payments, which is expected to rise to 7.3% of all contracts by 2021.<sup>6</sup>

Unsatisfied with the speed of transformation, private purchasers are pushing even more aggressively in this direction. To speed this, a number of private companies are creating Center of Excellence (COE) relationships or are carving out payment bundles separate from the private payers that manage most of their benefit designs. As a result, private payers are also accelerating their shift to VBR models.<sup>7</sup>

Despite all this pressure, the difficulty of transition from the familiar and still dominant FFS business model, to a very different and unfamiliar VBR model results in change that is too slow to control costs in a timely way. As a result, care providers can expect increased downward pressure on FFS reimbursement, further shrinking already thin profit margins. This will increase stress in the provider sector and indirectly create a reason for providers to work more closely with private and public sector health care payers and purchasers to improve current VBR models and also develop new approaches to finally get to the critical mass needed to achieve a better quality, more consumer friendly and higher value health system.

We can also expect government to pass some form of major legislation in the next five to ten years. This is likely to be a

build on the ACA, which has proved to be surprisingly durable, persevering despite multiple court challenges. A third challenge in the Supreme Court, ongoing at the time of this writing, is widely anticipated to once again uphold much of the ACA. A failure to do so would create a profound disruption in the health care system. Assuming the law is largely upheld, an expansion of coverage is likely at some point. This may well be by adding a public option or Medicare buy-in option, in turn expanding the role of government as the payer of most common and last resort.

In addition to reimbursement changes, technology is also beginning to transform the health care sector and delivery of care. The COVID-19 pandemic is one of the most profound sociologic phenomena in human history and it should be no surprise that its deep impact on health care delivery will persist long after the pandemic is brought under control. The delivery of virtual care through tele-health, remote patient monitoring and other tools were, by necessity, greatly accelerated and expanded due to the pandemic. This is not likely to return to baseline but rather combined with payment changes and other technology to catalyze even more transformation in the health care delivery model.

Improvements in data acquisition and monitoring are beginning to provide the raw materials needed for artificial intelligence (AI) to enter the health care space. While still in its infancy, AI is likely to rapidly enter the health care space, resulting in profound changes in the delivery and management of

care—perhaps more than any technology has ever impacted health care or society as a whole.

All of this uncertainty, stress and change is very disruptive to business planning across the health sector and the practice of medicine. Yet, out of the seeming chaos and confusion, if one steps back there is a signal that can be found in all the noise and that can help in creating strategic and operational plans for long term success.

All this change means there will be winners and losers in the health care delivery space. To navigate this time successfully will require providers to be nimble and innovative. Investments in infrastructure should favor tools that can be used in the current dominant FFS model but can also be extensible in a way that will accommodate the emerging VBR models and new technology. Organizations must seek out experience with managing VBR models in areas of high impact, while keeping risk exposure small enough avoid serious bottom line damage, until the organization is prepared to identify and manage risk appropriately.

Lastly, to succeed in the emerging health care environment will require a scale that will allow access to large enough populations to wash out random variation risk and to also invest in the needed infrastructure. This may result in mergers and acquisitions, but there are also creative business alignments that can allow independent practices to collaborate and work together in safe harbors provided by regulatory relief that is beginning to emerge.

Change will continue and with it is both risk and opportunity. Success will favor the innovative and bold. ■

## REFERENCES

- 1 CMS Office of the Actuary Report: Feb. 14, 2018
- 2 Healthcare spending will hit 19.4% of GDP in the next decade, CMS projects: Meyer, Harris. *Modern Healthcare*, Feb. 20, 2019
- 3 More Americans Say Government Should Ensure Healthcare Coverage. Bialik, K. Fact Tank. January 13, 2017
- 4 The Federal Share of American Health Spending is Now Approaching 50%: Conover, Chris. *Forbes*, June 1, 2018
- 5 The Uninsured and the ACA: A Primer – Key Facts about Health Insurance and the Uninsured amidst Changes to the Affordable Care Act. Garfield, Rachel. Orgera, Kendal. Damico, Anthony. The Kaiser Family Foundation. Jan 25, 2019
- 6 Value-based health insurer contracts growing in number, but not risk adoption: Castellucci, Maria. *Modern Healthcare*, Aug 24, 2019
- 7 Employers Accelerate Move to Value Based Care in 2018. Japsen B. *Forbes*. Aug. 17, 2017



NOTE: This article has been edited from the original print edition, to reflect updated information. For the most updated information, refer to the online article at: <https://www.cns.org/publications/congress-quarterly/congress-quarterly-detail/cutting-red-tape-evaluation-management-e-m-coding->



Katie O. Orrico, Esq

# Cutting the Red Tape—Evaluation and Management (E/M) Coding Changes for 2021: What Neurosurgeons Need to Know

For decades, physicians have struggled with burdensome documentation requirements for office and outpatient visits—otherwise known as evaluation and management (E/M) services. The E/M documentation guidelines used by the Centers for Medicare & Medicaid Services (CMS) are a complex matrix of check-boxes and documentation requirements that focuses on information that is not always relevant to the service provided and the medical decision-making necessary for patient care. The medical community was unified in its desire to reduce the burden of documenting E/M services.

Substantial changes in how neurosurgeons report office and outpatient clinic visits will be implemented beginning on Jan. 1, 2021. These changes will affect all practicing neurosurgeons, regardless of sub-specialty or practice type. Born out of burden reduction efforts in Congress (e.g., the House Ways and Means Committee’s “Red Tape Relief Project”) and CMS’ “[Patients over Paperwork](#)” initiative, the new E/M coding rules aim to replace the byzantine and onerous check-box system with one that focuses on clinical documentation of the care provided to the patient.

After reviewing options with CMS, the AMA CPT® Editorial Panel revised the E/M CPT codes developing a new set of code descriptors. These new descriptors focus either on medical decision making or on total time. The goal of this effort was to lessen the documentation requirements and to reduce the burden on physicians.

**Table 1.** *Complexity of Medical Decision-Making*

Number of diagnoses or management options	Amount and/or complexity of data to be reviewed	Risk of complications and/or morbidity or mortality	Level of Complexity of Medical Decision-Making
Minimal	Minimal or None	Minimal	STRAIGHTFORWARD
Limited	Limited	Low	LOW COMPLEXITY
Multiple	Moderate	Moderate	MODERATE COMPLEXITY
Extensive	Extensive	High	HIGH COMPLEXITY

CPT leaders clearly stated that the purpose of these revisions was not to change the E/M code values. However, the new codes will result in significant Medicare payment cuts to neurosurgeons due to the Medicare physician fee schedule’s budget neutrality requirements.

## New E/M Coding System

Under the new system, CPT code 99201 was eliminated, and changes were made to the remaining codes for new patient visits (CPT codes 99202 to 99205) and established patient visits (CPT codes 99211 to 99215). CMS continues not to recognize or pay for the consultation visit codes (99241-99245), although other third-party payers may still allow reporting of these codes. The new system will enable neurosurgeons to choose the level of E/M service based on medical decision making alone. Under the current system, E/M codes are selected based on the complexity of decision making from two out of three

possible categories: number of diagnoses or options, amount/complexity of data and risks of complications/morbidity/mortality. (**Table 1**)

For time-based reporting, total time is measured on the date that the encounter occurs. The service’s time covers both total face-to-face and non-face-to-face time on the day of service—a significant change from the old system. (**Table 2**)

Physician and qualified health care provider time includes:

- A review of tests;
- Obtaining a history and performing an exam;
- Counseling and education;
- Ordering medications;
- Ordering tests and procedures;
- Communicating with other providers;
- Documenting in the electronic medical record; and
- Reviewing films and test results.

**Table 2.** *Time-based E/M Coding*

CPT Code	Total Time
99202	20
99203	35
99204	60
99205	88
99211	7
99212	16
99213	30
99214	47
99215	70

### Changes in Revised E/M Code Values

Following the approval of the updated E/M codes, a group of 52 specialty societies participated in the AMA/Specialty Society RVS Update Committee (RUC) survey of the new codes. The RUC adopted new values for these E/M codes, and CMS agreed with the RUC-recommended values, which will go into effect on Jan. 1, 2021. (Table 3)

**Table 3.** *New and Old RVU Values*

CPT Code	2020 Work RVU	2021 Work RVU
99202	0.93	0.93
99203	1.42	1.60
99204	2.43	2.60
99205	3.17	3.50
99211	0.18	0.18
99212	0.48	0.70
99213	0.97	1.30
99214	1.50	1.92
99215	2.11	2.80

### EXAMPLE OF A LEVEL 4 NEW PATIENT VISIT (CPT CODE 99204) IN THE NEW SYSTEM. TWO OUT OF THREE ELEMENTS OF MEDICAL DECISION MAKING (MDM) ARE REQUIRED:

#### A MODERATE NUMBER AND COMPLEXITY OF PROBLEMS ADDRESSED AT THE ENCOUNTER DEFINED AS:

- 1 or more chronic illnesses with exacerbation, progression, or side effects of treatment;  
or
- 2 or more stable, chronic illnesses;  
or
- 1 undiagnosed new problem with uncertain prognosis;  
or
- 1 acute illness with systemic symptoms;  
or
- 1 acute, complicated injury

#### A MODERATE AMOUNT AND/OR COMPLEXITY OF DATA MEETING THE REQUIREMENTS OF AT LEAST ONE OUT OF THREE CATEGORIES LISTED BELOW:

##### Category 1: Tests, documents, or independent historian(s)

- Any combination of 3 of the following:
- Review of prior external note(s) from each unique source;
- Review of the result(s) of each unique test;
- Ordering of each unique test;
- Assessment requiring an independent historian(s)  
or

##### Category 2: Independent interpretation of tests

- Independent interpretation of a test performed by another physician/other qualified health care professional (not separately reported);  
or

##### Category 3: Discussion of management or test interpretation

- Discussion of management or test interpretation with external physician/other qualified health care professional/appropriate source (not separately reported)

#### A MODERATE RISK OF MORBIDITY FROM ADDITIONAL DIAGNOSTIC TESTING OR TREATMENT:

- Prescription drug management
  - Decision regarding minor surgery with identified patient or procedure risk factors
  - Decision regarding elective major surgery without identified patient or procedure risk factors
  - Diagnosis or treatment significantly limited by social determinants of health
- An example of a level 4 new patient (CPT code 99204) MDM would be a patient with chronic headaches with worsening cephalgia and an MRI scan ordered by her primary care physician. A review of the MRI shows a convexity meningioma with surrounding edema, and the neurosurgeon decides to schedule a craniotomy and tumor resection.



## Additional E/M Policies—No Increase in Global Surgery Codes; Unnecessary Add-on Code

Unfortunately, despite nearly uniform agreement among the medical community, CMS has refused to adjust the E/M portion of the 10- and 90-day global surgery codes to account for the increased values of the stand-alone E/M codes. Thus, the value of neurosurgical procedures will not increase. For the first time since the advent of the Resource-based relative value scale, the federal government plans to pay physicians differently for the same work. Furthermore, absent Congressional action, CMS is implementing a new add-on code—G2211 (formerly GPC1X)—for complexity inherent to E/M services that will commonly be reported only by specific subspecialties—not including neurosurgery.



## Neurosurgery Faces Steep Medicare Cuts—Launches Surgical Care Coalition Campaign

Because E/M services represent about 40% of the entire Medicare physician fee schedule (MPFS), even small changes in the E/M values significantly impact all provider payments. Regrettably by law, any MPFS changes cannot increase or decrease expenditures by more than \$20 million. To comply with this budget neutrality requirement, any increases must therefore be offset by corresponding decreases. CMS estimates that the 2021 policies—which include additional changes to other E/M services—will increase Medicare spending by approximately \$10.6 billion, necessitating steep cuts by reducing the Medicare conversion factor from \$36.0896

to \$32.4085, or a 10.2% percent decrease. The G2211 add-on code will alone redistribute over \$1.5 billion between specialties.

Due to the changes to the E/M code values, the failure to incorporate these changes into the 10- and 90-day global codes and the adoption of the new G2211 add-on code, CMS estimates that neurosurgeons will see an overall **6% decline in Medicare payments**. When extrapolated to all payers, this cut could amount to as much as **\$45,000 per neurosurgeon**. Additional potential cuts to the global surgery codes could result in even steeper reductions in the future.

Recognizing that cuts of—with significant funding support from the Council of State Neurosurgical Societies (CSNS) and the Section on Disorders of the Spine and Peripheral Nerves—this magnitude may lead to reduced access to care for older Americans, on June 18, the Congress of Neurological Surgeons (CNS) and the American Association of Neurological Surgeons (AANS), along with 10 other national surgical associations, founded the [Surgical Care Coalition](#) (SCC). The SCC has launched a targeted, multi-faceted advocacy and public relations campaign to prevent these cuts. Through social media, op-eds, news articles, digital advertisements, radio and television interviews and grassroots advocacy, the SCC has reached millions of Americans—including federal policymakers—urging Congress to prevent these Medicare cuts.

## Legislation to Prevent the Cuts Introduced

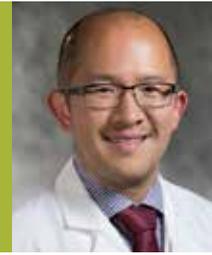
As part of this coalition effort, the CNS and AANS are advocating that Congress adopt legislation that:

- Increases the global surgery code values;
- Halts implementation of the G2211 add-on code for complex E/M visits; and

- Prevents any additional cuts resulting from the new E/M payment policies.

Following sustained advocacy by organized surgery and others, on Oct. 30, eight bipartisan members of Congress—Reps. [Ami Bera](#), MD, (D-Calif.); [Larry Bucshon](#), MD, (R-Ind.); [Brendan Boyle](#) (D-Pa.); [George Holding](#) (R-N.C.); [Raul Ruiz](#), MD, (D-Calif.); [Phil Roe](#), MD, (R-Tenn.); [Abby Finkenauer](#) (D-Iowa); and [Roger Marshall](#), MD, (R-Kan.)—introduced H.R. 8702, the “Holding Providers Harmless From Medicare Cuts During COVID-19 Act.” On Dec. 10, Sens. [John Boozman](#) (R-Ark.), [Kevin Cramer](#) (R-N.D.), [Cindy Hyde-Smith](#) (R-Miss.), [Tom Cotton](#) (R-Ark.) and [Susan Collins](#) (R-Maine) introduced the same bill in the Senate. The purpose of the legislation is to hold health care providers harmless from Medicare payment cuts in 2021 and 2022, while the nation continues to contend with the effects of the COVID-19 pandemic. In addition, Sen. [Rand Paul](#), MD, (R-Ky.) introduced S.4932 the “Medicare Reimbursement and Equity Act”, which would require CMS to adjust the E/M portion of the global surgery code proportionate to the stand-alone E/M codes. The CNS and AANS enthusiastically endorsed both bills and, as of the writing of this article, are working to incorporate them into a broader year-end legislative package that must pass Congress.

For more resources on about the new E/M codes and neurosurgery’s efforts to prevent steep Medicare cuts view the online issue of CNSQ. [❏](#)



Khoi D. Than, MD



Ali A. Baaj, MD

# Navigating Corporate Relationships: The Dos and Don'ts for Entering a Contract

According to the Centers for Medicare & Medicaid Services<sup>1</sup>, in 2019 the average neurosurgeon received \$18,149.19 in general payments from industry. General payments consist of consulting fees, speaking honoraria, travel, lodging, food, and beverage. This amount is nearly five times higher than the average value received across all medical specialties of \$3,742.28. Relationships between medicine and industry are essential to clinical practice, research, and medical education. Due to the high revenue generation and technological reliance of our field, neurosurgeons are particularly likely to be approached by industry to engage in consulting opportunities. In fact, 95% of American neurosurgeons receive some payment from industry.<sup>2</sup> The goal of this article is to discuss best practices for entering a corporate contract and navigating issues with bias and conflicts of interest

## DO

### 1. Read the contract.

A consulting contract can be long and downright boring to read. Nonetheless, it is important to do so. The onus is on you, the recipient, to correct any mistakes and omissions. If the monetary value of the agreement seems low, it is perfectly reasonable to negotiate for better terms. In addition, seeking professional legal advice may be worthwhile, especially if there are

clauses pertaining to intellectual property and/or a potential patent is at play. If stock options are involved, be certain to consult with a tax adviser, as there are nuances with nonqualified stock options that could cost you a lot of money if you are not careful to file certain elections. At the very least, discussion of a given opportunity with a colleague with significant consulting experience might prove beneficial before signing on the dotted line.

### 2. Check your primary employer's policy on medical consulting.

Institutions vary widely on rules regarding involvement with industry. Some centers may forbid it, while others may have no restrictions whatsoever. There may be limitations on the use of your or your institution's name in corporate promotional materials. Some employers stake claim on a certain percentage of money made from consulting and/or royalties. Almost all will require that you disclose such relationships. Clarifying your employer's policies on this is imperative prior to entering a contract. Most institutions have compliance officers that can help navigate these waters.

### 3. Acknowledge bias to your patients, in your research, and in presentations.

Informing patients of conflicts of interest prior to neurosurgical intervention likely builds trust,<sup>3</sup> and may even be mandated

by institutions and/or government. When it comes to research, previous studies have shown that research supported by industry is 3.6 times more likely to report positive results. Even if a study is not funded by industry, personal conflicts of interest by authors have also been shown to influence results. As such, it is important for appropriate disclosures to be made and for consumers of the literature and meeting audiences to be aware of bias.<sup>4</sup>

### 4. Keep the relationship dynamic.

It is important to keep these consulting relationships dynamic; otherwise, you risk partaking in a "symbolic consultancy." Meet with your contacts routinely to discuss and assess the engagement; ensure you are optimizing your time, energy and skillset; and never hesitate to offer suggestions for improvement. After all, industry sought your expertise to enhance a given product or educational initiative.

### 5. Diversify your relationships.

It is expected that one may work more closely, as a consultant, with one or two industry partners. This is understandable given time constraints and the neurosurgeon's clinical and technical interests. Keeping an open mind, however, to exploring other potential relationships is important as technology and interests do change. Ensure that your contract with one entity does not preclude you from offering services to another.




---

> **ADVANCING OUR FIELD DEPENDS ON NEUROSURGEON-INDUSTRY PARTNERSHIPS AND RELATIONSHIPS. THESE INTERACTIONS ARE VITAL AND NECESSARY. ABIDING BY SIMPLE RULES, HOWEVER, ENSURES A PROFESSIONAL RELATIONSHIP THAT ENHANCES THE EXPERIENCE FOR THE CONSULTANT SURGEON, CONSULTING ENTITY, AND ULTIMATELY THE CARE DELIVERED TO OUR PATIENTS.** <

---

## DON'T

### 1. Let financial conflicts of interest affect your decision-making.

We work in a field where good evidence is not available across all situations. For example, in spine surgery there is great uncertainty as to which surface technologies and osteobiologics result in the best rate of fusion. It is important to be aware that all gifts and financial interests have the potential to affect judgment.<sup>5</sup> Continuously being aware of this will allow each individual surgeon to put these conflicts of interest aside in making the best decision for patients.

### 2. Request or expect remuneration for using products.

It is both illegal and unethical to receive remuneration in exchange for prescribing,

implanting or using medical equipment and products. Avoid circumstances or situations that directly or indirectly suggest this. If unsure regarding the nature of the contract or proposal, discuss this with your Chair or business manager/compliance officer.

### 3. Accept gifts of any kind.

Accepting gifts from industry and vendors, especially if you are a consultant, can be problematic. It is important to keep the relationship professional and related to the work as delineated in the consultant agreement. Accepting gifts, whether small or large in value, not only violates most institutional rules, but it can also undermine the expected professional relationship. It is tempting to accept an invitation for a sporting or entertainment event, but such offers should be declined.

### 4. Conceal consultancy agreements from your employer.

One of the most common reasons for employment termination is concealing outside engagements from an employer. These activities must be declared and disclosed to avoid potential conflicts with patient care and equipment procurement. Most, if not all, institutions allow for surgeon-industry partnerships, but all require disclosures.

In summary, advancing our field depends on neurosurgeon-industry partnerships and relationships. These interactions are vital and necessary. Abiding by simple rules, however, ensures a professional relationship that enhances the experience for the consultant surgeon, consulting entity, and ultimately the care delivered to our patients. ❏

## Resources

- 1 "Open Payments." cms.gov. Centers for Medicare and Medicaid Services, revised 09/21/2020. Accessed 12.12.2020.
- 2 Motiwala M, Herr, MJ, Jampana Raju SS, et al. Dissecting the Financial Relationship Between Industry and Academic Neurosurgery, *Neurosurgery*, 2020; 87( 6):1111–1118
- 3 Edwards D, Ballantyne A. 2009. Patient awareness and concern regarding pharmaceutical manufacturer interactions with doctors. *Intern Med J.* 39(3):191-96
- 4 Bekelman JE, Li Y, Gross CP. 2003. Scope and impact of financial conflicts of interest in biomedical research: a systematic review. *JAMA* 289(4):454-65
- 5 Brennan TA, Rothman DJ, Blank L, et al. 2006. Health industry practices that create conflicts of interest: a policy proposal for academic medical centers. *JAMA* 295(4):429-33



**Barry Zimmerman**  
Wealth Management  
Advisor

# Disability Income Insurance: What Every Surgeon Needs to Know

Every successful surgeon needs to consider the best disability income (DI) insurance possible. While investment and retirement strategies are advisable—particularly for high earners—these products do not cover the source of your wealth: your income.

No matter how careful you are, a disabling accident or illness could result in your inability to work for months, even years. Consider this:

- In 2018 in the United States, the industry with the greatest number of people with disabilities was Health Care and Social Assistance with 1,318,248 people (14.5 percent)<sup>1</sup>
- More than 25% of Americans entering the work force today (1 in 4) will become disabled before they retire.<sup>1</sup>

Furthermore, it's not always safe to rely solely on a group policy. While group DI is often relatively inexpensive and easy to administer, it can also fall short just when you need it most – leaving you in for some unpleasant surprises when it's too late to correct the situation.

Look for the following terms when choosing a high-quality disability policy:

- **Non-cancellable and Guaranteed Renewable:** Choose a policy that's non-cancellable and guaranteed renewable to age 65 or 67. This will also guarantee premiums until age 65 or 67. With group or association coverage, you run the risk of being dropped and left unprotected at a time in your life when, due to your age or to a change in your health, it would be very difficult to qualify for coverage from another provider. The premiums for your entire classification can also be increased at any time.
- **Conditionally renewable for life:** Although premiums may increase after age 65 or 67, your policy should be renewable for life as long as you are at work full time.
- **Own-occupation:** Own-occupation or “own-occ” coverage defines “totally disabled”—and therefore eligible for benefits—as being unable due to injury or sickness to perform the material and substantial duties of your own occupation including medical specialty *even if you are at work in another capacity*. As a highly skilled physician who has invested much in education and training, you want to make sure you have genuine own-occupation coverage. For example, you can teach in your field,

but cannot perform surgeries, you are still eligible for benefits. Group coverage is rarely *true* own-occupation coverage.

- **Partial Disability coverage:** Through a rider, a good individual DI policy can provide you with a benefit when you suffer a loss of income as a result of *partial* (residual) disability—even if you have never suffered a period of total disability. This kind of partial coverage is not available with most group plans.

With the right DI coverage, your economic security can be safeguarded. By adding a comprehensive disability income coverage to your existing wealth management strategy, you can rest assured that you've added a vital component to your financial protection package. ❏

**With over 25 years' experience in the financial services industry, Barry Zimmerman brings a strategic discipline and holistic approach to help work towards maximizing wealth, maximizing protection, and minimizing risk. He empowers his clients with the knowledge they need to achieve financial success at all stages of life.**

*Barry Zimmerman, Registered Representative and Financial Advisor of Park Avenue Securities LLC (PAS), 160 Gould Street, Suite 310, Needham, MA 02494. Securities products/services and advisory services are offered through PAS, a registered broker-dealer and investment advisor, 781-449-4402. Financial Representative of The Guardian Life Insurance Company of America (Guardian), New York, NY. PAS is a wholly-owned subsidiary of Guardian. The Bulfinch Group is not an affiliate or subsidiary of PAS or Guardian. Life insurance offered through The Bulfinch Group Insurance Agency, Inc., an affiliate of The Bulfinch Group, Inc. The Bulfinch Group, Inc. is not licensed to sell insurance. The Bulfinch Group is not registered in any state or with the U.S. Securities and Exchange Commission as a Registered Investment Advisor. PAS is a member FINRA, SIPC. CA Insurance License #0C41508; FL Insurance License #A303249. 2020-113342 exp 12/22*

## Resources

- 1 Social Security Administration 2019 FACTS



Garni Barkhoudarian, MD

Robert J. Spinner, MD

# CNS Oral Boards Examination Course



The CNS has adapted its valued and trusted CNS Oral Boards Course to a virtual program for winter 2021.

The ABNS Oral Boards examination can be one of the most stressful and daunting challenges for the young neurosurgeon. Surgeons preparing for this exam, approach it similar to a challenging operation, with much preparation and planning. For the past eight years, the CNS has been conducting Oral Boards Examination courses, now held twice a year, to help our members be properly prepared. As 2020 brought new challenges to surgical training and education, the CNS has transitioned this critical exam preparation course to a virtual format. The next CNS

Oral Boards Examination Course will be held virtually February 20 & 21, 2021.

Taking into account the neurosurgeons' busy schedules, the CNS course is designed to rigorously and efficiently steer exam preparation. Over one-and-a-half days, course attendees will participate in an individualized, targeted and timely review of general neurosurgical and self-selected subspecialty topics, including diagnosis, management and complications. The course will consist of didactic, small group and one-on-one sessions. This course is intended to provide the examinees guidance on their

strengths and weaknesses, helping them prepare with focused study prior to the exam, and also providing realistic expectations of the examination process. The course is always scheduled one to two months prior to the oral exam, allowing the material to remain fresh in mind with plenty of time to prepare. This year, we have added a series of post-course quizzing sessions, "Hot Seat Mondays," to continue the learning and prep between the course and board exams.

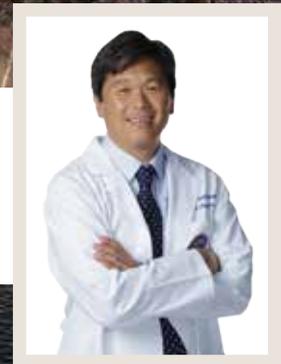
The CNS course was redesigned in 2019 to address the ABNS Oral Board Examination format changes, concentrating on core principles of general neurosurgery and commonly encountered pathology through the emergency room. In addition, subspecialty areas were defined allowing a candidate to select an area of focused practice. The feedback from the CNS course's changes has been overwhelmingly positive, with attendees finding value in the expanded small group sessions and truncated didactic lectures. Mock examinations and one-on-one sessions were found to be extremely helpful with immediate feedback to the examinees.

In an era where neurosurgical education can be received in many formats, the CNS Oral Boards Course remains a valuable resource to our membership. The CNS continues to innovate and adjust our course offerings and will continue to do so in our changing educational landscape. Our faculty's goal is not only to help our participants pass the ABNS exam, but rather to impart neurosurgical knowledge that will remain applicable in their practices. 

# Advancing Neurosurgery

For decades to come

**BRIAN HOH, MD, MBA**  
Chair, Neurosurgery, UF Health  
President, Congress of Neurological Surgeons



**University of Florida Health Shands is the #1 ranked hospital in Florida, the Southeast's most comprehensive academic health center and a key element of one of the nation's Top 10 public universities, as ranked by U.S. News & World Report.** That means our neurosurgery patients have access to innovative research and leading-edge technologies, giving them new options and hope. It also means we strive every day to advance the great field of neurosurgery. At UF Health Neuromedicine, we envision a future without boundaries for healing, and we commit to serving as a pioneer for our patients and our practices.

**UF Health Neuromedicine, home of:**

- PRESTON A. WELLS JR. CENTER FOR BRAIN TUMOR THERAPY
- NORMAN FIXEL INSTITUTE FOR NEUROLOGICAL DISEASES
- COMPREHENSIVE STROKE CENTER
- COMPREHENSIVE SPINE CENTER
- COMPREHENSIVE SKULL BASE SURGERY CENTER



# FOUNDATION UPDATE



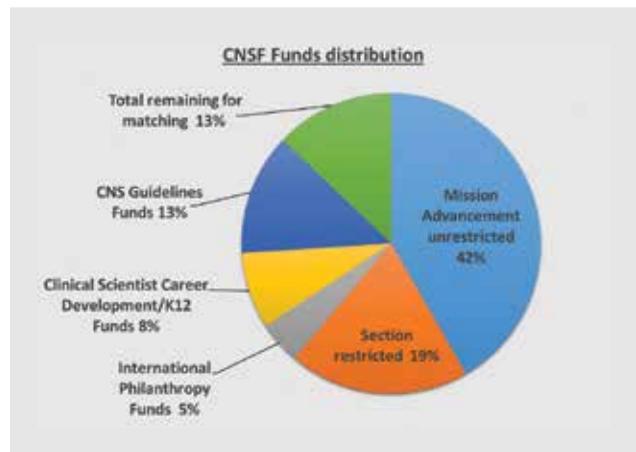
**CNS**  
Foundation

## Dear friends,

Philanthropy is personal. We take great interest in understanding how you want to make the world better. That is why, in 2019, we gave you the control of directing the \$1 million CNS Leadership gift. Each time you make a donation, whether it be to support the mission, or to specifically support one of the three initiatives, your match is attached to your donation and grows the fund that you elected to support. To date, we have raised more than \$3.2 million. Approximately \$400,000 remains for you to have your gift matched.

As leaders of the CNS Foundation, when Alex and I give, we choose to support the overall mission. President Brian Hoh served as Chair to the CNS Guidelines Committee. When he and his wife Melissa give, they often direct their gift to the CNS Guidelines Fund. As a past recipient of National Institute of Health (NIH) awards, Past President Ganesh Rao chooses to donate to the Clinical Scientist Career Development Fund. Clemens Schirmer, one of the Co-Chairs of the CNS International Division has given many times to the International Philanthropy Fund. All these personal reasons for giving are important and we thank you for trusting the CNS Foundation to help achieve your philanthropic goals.

We wish to thank the visionary leader who recently established the Future Women Leaders in Neurosurgery Scholarship. Donations to this scholarship will reside in a sub-fund within the Clinical Scientist Career Development Fund. Please read CNS Foundation Board Member, Martina Stippler's article that explains the importance of this new way you can help advance young female neurosurgeon careers.



Data as of November 20, 2020

The Mission Advancement Fund serves all initiatives and allows for the CNS Foundation Board to direct donations to the highest need. In our upcoming Annual Report, we will detail the Board's work to respond to your needs during the COVID-19 pandemic. It is an honor for us to serve you and your patients in philanthropy.

## With Sincerest regards,



*Elad Levy*

**Elad I. Levy, MD, MBA**  
Chair, CNS Foundation



*Alex Khalessi*

**Alex Khalessi, MD, MBA**  
Vice Chair, CNS Foundation

# CNS Foundation announces Future Women Leaders in Neurosurgery Scholarship During WINS 30<sup>th</sup> Anniversary



Martina Stippler, MD

This year, not only have I served as the Editor of the *Congress Quarterly* and on the CNS Foundation Board, but I have also had the honor of chairing the Section for Women in Neurosurgery (WINS). I want to share with you an exciting announcement made during the WINS 30th anniversary virtual celebration on Wednesday evening, October 28, 2020.

Our virtual celebration was well attended, and we had much to celebrate. WINS Chair-elect Ellen Air and I made the announcement: an anonymous donor recently made a generous donation to the **CNS Foundation to create the Future Women Leaders in Neurosurgery Scholarship**.

We had begun the lovely evening listening to our indomitable first chair, Deborah Benzil, share her memories as the lone woman in her residency program, recounting that joyful day she first met other female neurosurgeons at a conference. Fast forward thirty years and we are celebrating an anonymous champion who will annually launch multiple *women leaders* in neurosurgery. What a celebration!

The CNS Foundation and WINS will collaborate in structuring this scholarship and open the application in early spring 2021. A committee will select between two and four recipients. Each will receive a stipend to attend a leadership course of their choice.

Although I serve on the CNS Foundation Board, I do not know who this generous soul is; I can only thank them from afar. I am told that the person has been inspired by female neurosurgeons over the years. The donor hopes that this gift will spur more people's generosity to grow the fund in perpetuity. Ellen Air, I, and many other WINS members immediately added our own generous gifts to the CNS Foundation **Future Women Leaders in Neurosurgery Scholarship**. To date, the fund has reached \$30,000.

Our goal is to raise \$50,000 immediately to maximize the generous matching from the CNS Leadership gift. With every



donation doubled, you can partner with the CNS help this fund reach \$100,000 to support women in neurosurgery.

There has never been a better time to give to the CNS Foundation. Please help WINS celebrate the 30th anniversary by supporting the Future Women Leaders in Neurosurgery Scholarship, today!

To learn more and donate, please visit [Foundation@CNS.org](mailto:Foundation@CNS.org), or contact Courtney Johnson, Manager of CNS Foundation and Giving at [CJohnson@CNS.org](mailto:CJohnson@CNS.org). 📧

# INSIDE THE CNS



## Washington Committee Report



Katie O. Orrico, Esq

### CMS Releases Final 2021 Medicare Physician Fee Schedule Rule

On Dec. 1, the Centers for Medicare & Medicaid Services (CMS) released the Calendar Year (CY) 2021 Medicare Physician Fee Schedule (MPFS) [final rule](#). Under the proposal, neurosurgeons face overall Medicare payment cuts of approximately 6% beginning on Jan. 1, 2021. The reductions are primarily driven by new values for office and outpatient evaluation and management and other visit codes. The new payment policies will result in a significant budget-neutrality adjustment to the Medicare conversion, which will be reduced from \$36.0896 in 2020 to \$32.4085 in 2021 — a 10.2% reduction. The Congress of Neurological Surgeons (CNS) and American Association of Neurological Surgeons (AANS) continue to advocate for Congress to override these cuts.

### CMS Issues 2021 Hospital Outpatient Department and ASC Payment Final Rule

On Dec. 2, CMS published the 2021 Hospital Outpatient Prospective Payment and Ambulatory Surgical Center (ASC) Payment [final rule](#). Provisions of interest to neurosurgery include:

- A three-year transition to eliminate the inpatient-only (IPO) list;
- Modifications to certain expansion limits for physician-owned facilities;
- The establishment of two new categories of services requiring prior authorization — cervical fusion with disc removal and implanted spinal neurostimulators; and
- Revised criteria for the ASC list, including several neurosurgical procedures.

[The](#) CMS press release and for the CMS fact sheet are available in the online issue of *Congress Quarterly*.

### Neurosurgery Urges Congress to Adopt its Plan for Preventing Medicare Cuts

On Dec. 4, the CNS and AANS joined 18 other surgical organizations in [sending a letter](#) to Congressional leadership urging immediate intervention to stop devastating Medicare physician payment cuts

scheduled to be implemented on Jan. 1, 2021. The groups called on Congress to incorporate the provisions of the “Holding Providers Harmless from Medicare Cuts During COVID-19 Act” ([H.R. 8702/S. 5007](#)) and [S. 4932](#), the “Medicare Reimbursement Equity Act,” into any year-end legislative package. Additionally, the letter urges Congress to halt the implementation of the G2211 add-on code for certain complex E/M services.

The CNS and AANS also joined the Alliance of Specialty Medicine in sending a [letter](#) urging Congress to act before the end of the year to prevent Medicare payment cuts, which will impact many physician specialties effective Jan. 1, 2021. Additional letters sent by the [Congressional Black Caucus](#), [doctor members of Congress](#) and [a group of 50 Senators](#) urged leadership to stop the impending Medicare payment cuts.

### Neurosurgery Asks Congress to Suspend Medicare Payment Sequester

On Nov. 9, the CNS and AANS joined the [Alliance of Specialty Medicine](#) in a multi-specialty [letter](#) urging Congress to extend the Medicare sequestration relief provided in the Coronavirus Aid, Relief, and Economic Security (CARES) Act ([P.L. 116-136](#)). Section 3709 provided a temporary suspension of the annual 2% Medicare payment sequester from May 1, 2020, through the end of 2020. This provision of the CARES Act has provided critical relief when the provider community is suffering severe financial losses due to the drastic decreases in non-COVID-19-related and non-emergency care.

Following this action, on Nov. 11, the CNS and AANS also signed a coalition [letter](#) asking Congress to extend the current moratorium on the Medicare sequestration cuts until the end of the public health emergency. The letter notes that the pandemic will continue to place financial stress on our nation’s health care system, threatening the viability of those serving the most vulnerable communities. Therefore, Congress should act before the end of the year “to prevent the additional, damaging financial stress that would be caused by the return of the Medicare sequester.”

## Neurosurgery Objects to Burdensome Prior Authorization Requirements

On Nov. 2, the CNS and AANS sent a [letter](#) to Independence Blue Cross of Philadelphia regarding coverage [guidelines](#) requiring a physiatry consultation to authorize lumbar spinal fusion procedures, including fractures and tumors. The AANS/CNS Section on Disorders of the Spine and Peripheral Nerves (DSPN) prepared the response, objecting to the care delays that will ensue if patients must first see a physiatrist as a condition of prior authorization for medically necessary spine surgery. The organizations have requested a follow-up meeting with the plan's medical director.

## Neurosurgery Urges Funding for MISSION ZERO Program

On Nov. 20, the CNS and AANS sent a [letter](#) to the Senate Labor, Health and Human Services, Education, and Related Agencies (L-HHS-E) Appropriations Subcommittee supporting \$11.5 million in funding for the Military and Civilian Partnership for the Trauma

Readiness Grant Program. Authorized by the Pandemic and All-Hazards Preparedness and Advancing Innovation Act ([Public Law 116-22](#)), this grant program will enhance trauma training for military health care personnel while simultaneously bolstering civilian trauma care and saving lives. Known initially as MISSION ZERO, the program will provide funding to ensure trauma care readiness by integrating military trauma care providers into civilian trauma centers.

## Neurosurgery Urges CMS to Re-evaluate AUC Imaging Program

Neurosurgery has long advocated that Medicare's [Appropriate Use Criteria \(AUC\) Program](#) for advanced diagnostic imaging will place an excessive burden on physicians across a broad range of specialties with little evidence of clinical benefit. On Nov. 27, the CNS and AANS sent a [letter](#) urging CMS to re-evaluate the stand-alone AUC program for its necessity and value. CMS has delayed full implementation of the program until 2022.

## Washington Committee Transitions

All of organized neurosurgery expresses our gratitude and thanks for the dedication and service of several neurosurgeons who are transitioning off the Washington Committee. **Joseph S. Cheng**, MD, MS, FAANS and **John J. Knightly**, MD, FAANS, have brought significant expertise on coding and reimbursement and quality improvement issues, working tirelessly to support neurosurgeons and their practices to ensure that patients have access to the full range of treatment options. They will continue to contribute to the specialty in other roles, and for that, neurosurgeons should be grateful.

Special thanks and appreciation goes to **Ann R. Stroink**, MD, FAANS, chair of the

committee. Dr. Stroink began her service on the committee in 2014, serving as its chair for the past 3 ½ years. Throughout her tenure, she went to bat for neurosurgery in the halls of Congress, with federal regulators, representing the CNS as a chair of neurosurgery's delegation to the American Medical Association (AMA) and as neurosurgery's representative to the Alliance of Specialty Medicine and the Surgical Coalition. Throughout her tenure at the committee's helm, she was a trusted source of information on a full range of health policy topics — prior authorization, graduate medical education, reimbursement, quality improvement and health system reform, to name a few. Fortunately for the specialty, Dr. Stroink will also remain in a leadership



Dr. Stroink chairing Reference Committee F at the AMA's House of Delegates Meeting.

role within organized neurosurgery and the AMA for the betterment of our members and the public.

Finally, stepping in to fill these roles are several stellar individuals. **Joshua M. Rosenow**, MD, FAANS and **Luis M. Tumialán**, MD, FAANS, have been appointed as new members of the committee, and **John K. Ratliff**, MD, FAANS, will serve as the committee's new chair. These neurosurgeons will bring their passion for health policy and advocacy to lead the committee into the new decade.

For links to all documents and resources mentioned in this update, please visit the online issue of *Congress Quarterly* at [cns.org](#). 



Dr. Stroink being interviewed on NPR about the need for prior authorization reform.



Dr. Stroink in the halls of Congress. Pictured here with Rep. Darin LaHood (R-Ill.)



# CNS

## Leadership Institute

# Advance your career and your practice. Join the next generation of neurosurgical leaders.

**May 21–22, 2021**

Healthcare continues to evolve, requiring new and different leadership skills for physicians to more effectively meet the needs of their patients. Now more than ever, physicians need leadership skills to effectively influence and make decisions within your institution.



The CNS Leadership Institute is designed to help you grow as a leader. The institute offers a series of webinars and live courses for specific career stages that are designed to impart leadership skills and business acumen required to engage with hospital administrators, industry, and healthcare partners. Offerings include:

- **Webinars**  
For practicing CNS Members 3 separate 1 hour webinars: Communication Skills, Influence Management, Building Teamwork
- **Leadership in Healthcare Course**
  - One year commitment
  - Focuses on early and mid-career leadership
- **Vanguard Leadership in Healthcare Course**
  - One year commitment
  - Focuses on junior and senior career leadership

The CNS Leadership Institute has trained  
**100 physicians at 61 academic institutions** and  
**18 private practice groups.**



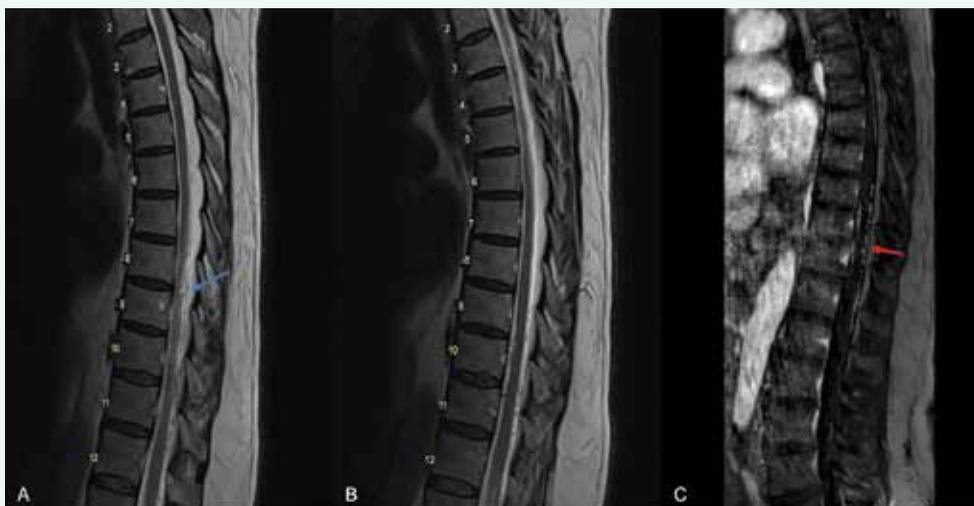
Learn more or register and apply at [cns.org/leadership](https://cns.org/leadership)

# IMAGES IN NEUROSURGERY

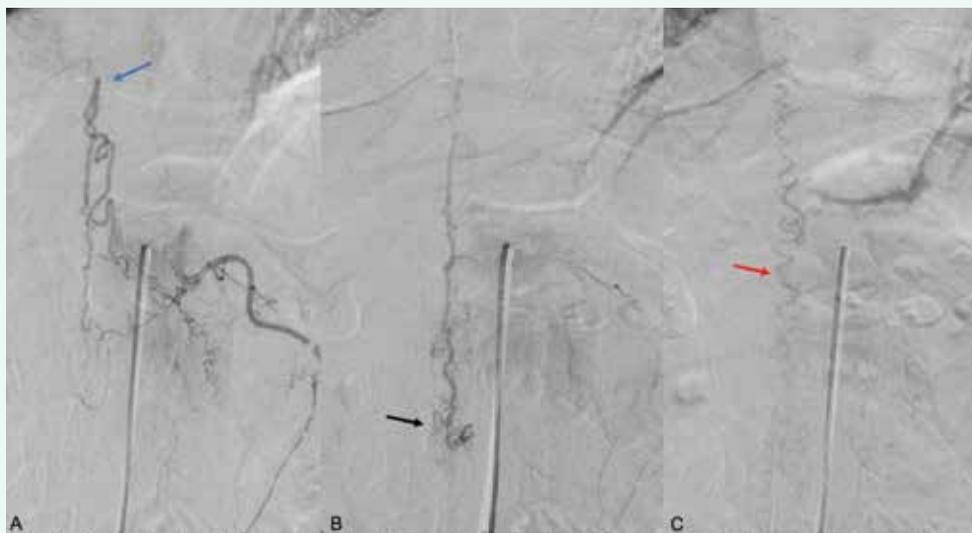
## Type IVa spinal perimedullary arteriovenous fistula

A 70-year-old male presented to our neurosurgery clinic with a chronic history of thoracolumbar back pain with no radicular or urinary symptoms. On neurological examination, his lower extremity strength and reflexes were normal. MRI of the thoracolumbar spine demonstrated intradural flow voids dorsal and ventral to the spinal cord (**Figure 1A, blue arrow**) without evidence of spinal cord edema (**Figure 1B**). Dynamic MR angiogram of the thoracic spine was suggestive of an intradural spinal arteriovenous fistula with a perimedullary early draining vein (**Figure 1C, red arrow**). Spinal angiogram of a selective injection at the left T11 intercostal artery demonstrated an arteriovenous fistula at the level of the conus medullaris (**Figure 2B, black arrow**) supplied by the posterior spinal artery (**Figure 2A, blue arrow**) draining into a single dorsal perimedullary draining vein (**Figure 2C, red arrow**). This spinal fistula is classified as a Type IVa perimedullary spinal arteriovenous fistula supplied by a single arterial feeder draining into a slow-flow, non-dilated vein. The patient was asymptomatic from the spinal fistula and is scheduled for a clinical follow up in three months. 

Rimal H. Dossani MD, Muhammad Waqas MD,  
Justin Cappuzzo MD, Ashish Sonig MD,  
Elad Levy MD, MBA  
University at Buffalo, Department of  
Neurosurgery



**Figure 1:** MRI of the thoracolumbar spine demonstrated intradural flow voids dorsal and ventral to the spinal cord (Figure 1A, blue arrow) without evidence of spinal cord edema (Figure 1B). Dynamic MR angiogram of the thoracic spine was suggestive of an intradural spinal arteriovenous fistula with a perimedullary early draining vein (Figure 1C, red arrow).



**Figure 2:** Spinal angiogram of a selective injection at the left T11 intercostal artery demonstrated an arteriovenous fistula at the level of the conus medullaris (Figure 2B, black arrow) supplied by the posterior spinal artery (Figure 2A, blue arrow) draining into a single dorsal perimedullary draining vein (Figure 2C, red arrow).

**Review more than 400 interesting cases, across all neurosurgery specialties at [cns.org/nexus](https://www.cns.org/nexus).**



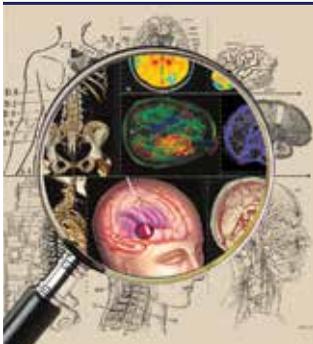
Congress of  
Neurological  
Surgeons

Congress Quarterly, 10 N. Martingale Road, Suite 190, Schaumburg, IL 60173.



CNS

2021 ANNUAL  
MEETING



VISION FOR THE FUTURE

AUSTIN, TEXAS  
OCTOBER 16-20, 2021

# SAVE THE DATE

## 2021 CNS ANNUAL MEETING

OCTOBER 16-20, 2021 | AUSTIN, TEXAS

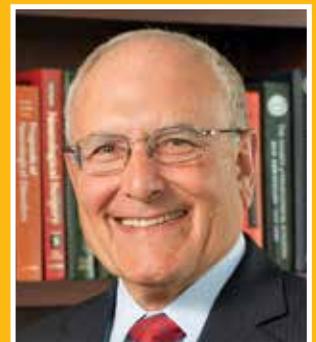
We hope you will be able to join us next October for the exciting 2021 CNS Annual Meeting where you can expect a variety of data-driven science, first-rate speakers, and plenty of collaborative learning opportunities. We are pleased to announce that our meeting will feature presentations from 2021 Honored Guest William A. Friedman as well as 2020 Honored Guests Bob S. Carter and Mark L. Rosenblum.



William A. Friedman



Bob S. Carter



Mark L. Rosenblum

We will continue to monitor the current health situation and take precautions to help keep our attendees safe.

Stay tuned and visit [cns.org/2021](https://cns.org/2021) for many more details in the coming months!

[cns.org/2021](https://cns.org/2021)