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CongressQuarterly

SUMMER 2019

THE AGE OF REASON FOR NEUROSURGERY



2019 CNS Annual Meeting
San Francisco, California
October 18-23, 2019



Congress of
Neurological
Surgeons

8 New Subspecialty
Symposia: A Twist on
the PC

12 Operative Techniques
and Case Based
Sessions

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EDITOR'S NOTE



Martina Stippler, MD
2018-19 Editor
[@martinastippler](https://twitter.com/martinastippler)

It is hard to believe, but summer is here and we are almost half way through to 2019. This means that numerous CNS volunteers and staff have been tirelessly working to create a unique meeting experience for you. Our president chose the theme: “The Age of Reason for Neurosurgery” inspired by the American Revolutionary, Thomas Paine, for our 2019 Congress of Neurological Surgeons Annual Meeting.

The way news and information is generated has changed. Journalism, standing for careful vetting of facts, and providing a balanced viewpoint has given away to polarized news coverage and social media platforms distributing fake news and myths. In this storm of too much information, it is up to the individual to determine what is accurate and sound. This is also true in healthcare and science. The Congress of Neurological Surgeons’ dedication to its core value of balanced, factual and evidence-based neurosurgical education is more important than ever. These efforts are highlighted in the 2019 CNS Annual Meeting.

In this issue of the *Congress Quarterly*, find a synopsis about our outstanding featured speakers. I am especially excited about hearing Shankar Vedantam, the host of NPR’s “Hidden Brain” podcast. Also if you are looking forward to refreshing your subspecialty knowledge during the Annual Meeting, please read about our New Subspecialty Symposia.

A unique feature of the CNS Annual Meeting is the CNS Xperience Lounge. Please find a list of educational and social activities in this issue including book signings and live surgeries. The Guidelines session, Operative Techniques and Case-Based Discussion will again take place at this year’s meeting and reflect so very well our overarching mission and theme.

The CNS reports a record number of abstract submissions for the 2019 CNS meeting, which promises to be an especially vibrant program in a vibrant city. I hope to see you there! If you are in doubt, I hope this issue of the *Congress Quarterly* can convince you to attend. Please let us know if you are coming @CNS_update #CNS2019 #AgeofReason.



Congress of
Neurological
Surgeons

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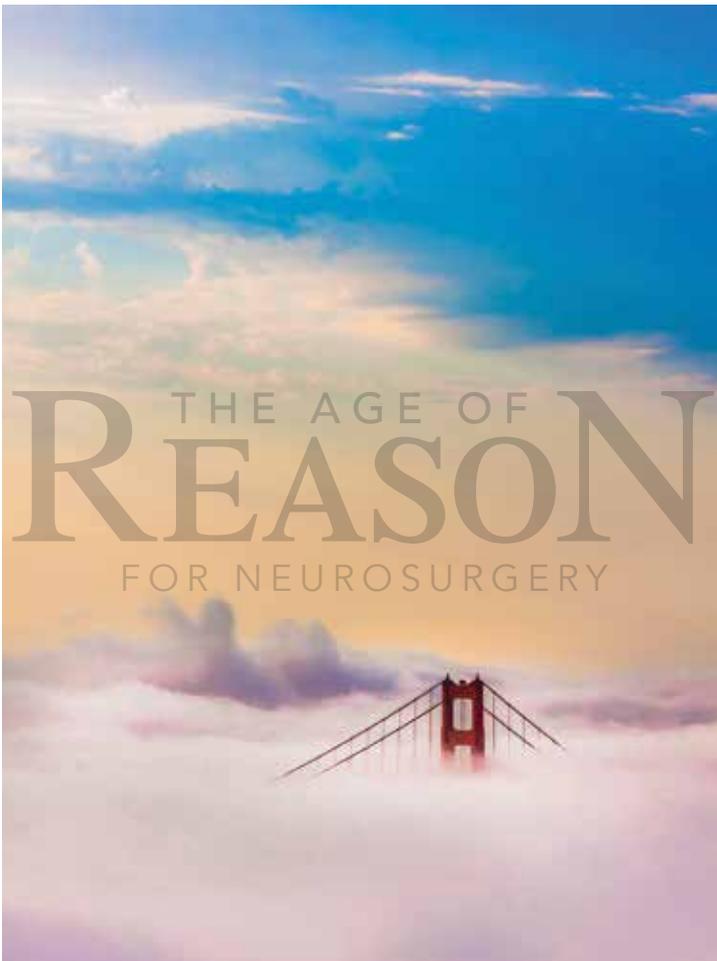
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Images in Neurosurgery

PRESIDENT'S MESSAGE



Ganesh Rao, MD
President, Congress of
Neurological Surgeons



The 69th Annual Meeting of the Congress of Neurological Surgeons will take place from October 19-23, 2019 in San Francisco, California. We will be celebrating the theme “The Age of Reason for Neurosurgery” inspired by the American Revolutionary Thomas Paine. The meeting theme inspires attendees to critically evaluate the evidence supporting neurosurgical practice. The meeting focus is particularly timely in the face of external scrutiny of procedural indications and outcomes.

Alex Khalessi, Nader Pouratian and Brian Nahed have put together a spectacular meeting that brings together neurosurgical thought leaders and international experts from other medical specialties. We will be highlighting research advancements that may change your practice and taking a deep dive on controversial topics to provide some clarity in managing complex neurosurgical illnesses. We are emphasizing the practice of surgery by showcasing operative techniques in multiple demonstration sessions devoted to practice innovations. For the first time, the meeting will include an operative technique abstract category to feature original operative procedures for the treatment of neurological disease. Finally, a dedicated interactive multimedia presentation session will provide the most opportunities for our members to present their original science across a variety of venues.

Another significant change is the expansion of our content into all-day symposia on Saturday and Sunday. Based on the feedback from our members, these symposia will highlight subspecialty interests through comprehensive, all-day sessions. These specialty-focused symposia will occur throughout the weekend prior to the meeting and at reduced cost compared to prior years. These subspecialty tracks have been created by the sections and will feature speakers who will bring a unique perspective to each subject.

An outstanding lineup of special speakers with topical relevance will also be presenting during the general scientific sessions at

> THE MOST FORMIDABLE WEAPON AGAINST ERRORS OF EVERY KIND IS REASON. I HAVE NEVER USED ANY OTHER, AND I TRUST I NEVER SHALL.<

–Thomas Paine, *The Age of Reason*, 1794



2019 CNS Presidential Address
Monday, October 21, 11:03–11:23 am

the Annual Meeting. Our Dandy Orator is Doris Kearns-Goodwin. Goodwin is a Pulitzer Prize winning historian whose latest book, *Leadership: In Turbulent Times*, is a New York Times bestseller and describes the leadership styles of four presidents at critical times in their administrations. Lucy Kalanithi, MD, the wife of neurosurgery resident Paul Kalanithi, MD who wrote *When Breath Becomes Air*, will expand on the balance between reason and emotion when faced with disease. Our John Thompson History of Medicine Lecturer is Rebecca Skloot, the author of *The Immortal Life of Henrietta Lacks*.

Skloot writes about science and medicine and in particular how they intersect with ethical issues. Other notable special speakers include: New York Times columnist Bret Stephens, the Michael L. J. Apuzzo Creativity Lecturer, Shankar Vedantam, and science writers Carl Zimmer, and Aaron Carroll.

This year's meeting will be in San Francisco, perennially ranked as one of America's most exciting cities. There is no shortage of things to do in the city and surrounding areas. We hope that you will take advantage of this amazing location in between educational events.

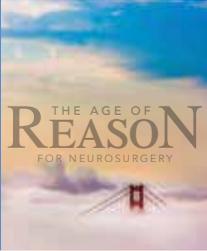
Join us in San Francisco this fall as we explore the theme *The Age of Reason for Neurosurgery*. The meeting is being crafted to enlighten and inspire you. The quantity and quality of original science is being expanded to give you the most value for your time at the Annual Meeting. I look forward to seeing you there! 🇺🇸

NEW FOR 2019
Complimentary Spouse or Guest Registration

when you register by **SEPTEMBER 18!**

Includes:

- Special Speaker presentations in GSS
- Daily breakfast in the Spouse Hospitality Suite
- Ticket to the Opening Reception
- Exhibit Hall access



A Preview of the 2019 CNS Annual Meeting

The CNS Annual Meeting Committee is proud to provide this preview of the 2019 CNS Annual Meeting in San Francisco, California. In a time when medical expertise and evidence are being challenged by hearsay, and public safety and health are being undermined by poor science, our 2019 meeting theme, “The Age of Reason for Neurosurgery” will renew an emphasis on rational thought and evidence-based reason as the cornerstones of neurosurgery.

The Annual Meeting committee has packed the General Scientific Sessions with keynote speakers chosen to illuminate our theme. We have enhanced the rest of the meeting in response to attendee feedback to maximize the clinical content and CME opportunities for your registration dollar and time. Be sure to check out Dr. Ashok Asthagiri’s article on page 8 to learn more about how we’ve retooled the weekend course offerings in San Francisco.

Our daily Sunrise Science and Guidelines Sessions offer an overview of essential CNS practice guidelines and offer oral presentations of the top abstracts in each section as well as late breaking science. See Drs. Jennifer Sweet’s and Martina Stippler’s article on page 10 for more details.

We have placed an emphasis on significantly enhancing opportunities to present your research. You will find essential original science and clinical abstracts throughout the program with daily Oral Presentations and new Interactive Multimedia Presentations on Tuesday with mini-podium talks in strategically situated oral presentation venues throughout the poster hall. And given their popularity at last year’s meeting, we will again feature the most impactful papers in NEUROSURGERY with our Top Paper awards in each subspecialty.

We have also enhanced opportunities to be recognized for outstanding contributions to neurosurgery. In addition to section specific awards that we all know from past years, this year there will be additional awards for best overall and Best Clinical, Best Science, and Best Operative Technique Oral Presentations for each section. During the Interactive Multimedia Presentation, the top clinical, basic science, and operative technique abstract in each section will also be recognized.

HONORED GUEST



Raymond Sawaya

We are proud to present Dr. Raymond Sawaya as our 2019 Honored Guest.

Dr. Sawaya was the founding chair of Neurosurgery at The University of Texas MD

Anderson Cancer Center, ultimately building the department into the most comprehensive and best recognized neurosurgical oncology program in the country. He also served as director of the Brain Tumor Center, an advisor to the leaders of the Glioblastoma Multiforme (GBM) Moon Shot™, and is currently holder of the Anne C. Brooks & Anthony D. Bullock III Distinguished Chair in Neurosurgery.

Dr. Sawaya is an internationally recognized leader in neurosurgery, with particular expertise in primary and metastatic brain tumors. On the clinical side, he has helped identify brain metastases as a major threat to the well-being of cancer patients, and was the first to promote the treatment of patients with multiple brain metastases (J Neurosurg 79: 210-6, 1993; 368 citations). Dr. Sawaya is renowned for his great strides in enhancing the accessibility and safety of brain tumor surgery. This can best be demonstrated

in his landmark paper on the importance of extent of resection on the survival of glioblastoma patients (J Neurosurg 95: 190-8, 2001; 1440 citations). He has also conducted the first prospective trial on the use of intraoperative MRI to maximize the extent of resection (Neurosurgery 64: 1073-81, 2009; 105 citations). His laboratory work helped identify molecular determinants of brain tumor invasiveness, and in particular, the role of serine proteases in glioma oncogenesis (over 60 publications).

Dr. Sawaya will deliver lectures during the Monday, Tuesday and Wednesday General Sessions, host the Resident/Honored Guest Luncheon on Monday afternoon and hold a meet and greet session Monday morning in the CNS Xperience Lounge.

Look for Dr. Sawaya at the following sessions:

Monday, October 21

GSSII 9:13–9:40 am

Honored Guest Presentation: Role of Resection for Glioblastoma: Can Technology Overcome Biology?

12:15–1:45 pm

Resident/Honored Guest Luncheon

Tuesday, October 22

GSS III 8:50–9:12 am

Honored Guest Presentation: Evidence-based Medicine Through Development of Home-grown Databases

Wednesday, October 23

GSS IV 8:50–9:12 am

Honored Guest Presentation: The Evolving Landscape and Management of Brain Metastases



Alexander A. Khalessi,
MD



Nader Pouratian, MD



Brian Nahed, MD



April Martin



Deanne Starr



Ganesh Rao MD

— FEATURED SPEAKERS —



Lucy Kalanithi, MD

A Conversation with Lucy Kalanithi

Lucy Kalanithi, MD, is the widow of the late Dr. Paul Kalanithi, neurosurgeon and author of the #1 New York Times bestselling memoir *When Breath Becomes Air* for which she wrote the epilogue. An internal medicine physician and faculty member at the Stanford School of Medicine in Palo Alto, California, she completed her medical degree at Yale, residency at the University of California-San Francisco, and a postdoctoral fellowship in healthcare delivery innovation at Stanford's Clinical Excellence Research Center. At the cross-section of her career as a medical professional and her personal experience alongside her husband during his life, diagnosis, treatment, and death, Dr. Kalanithi has special interests in healthcare value, meaning in medicine, patient-centered care, and end-of-life care. She has appeared on PBS NewsHour, NPR Morning Edition, and Yahoo News with Katie Couric, and been interviewed for People, NPR, and The New York Times. Join us Sunday, October 20, for a conversation with Lucy Kalanithi, immediately followed by a book signing of *When Breath Becomes Air*.



Shankar Vedantam

Hidden Brain

CNS Michael L. J. Apuzzo Lecturer on Creativity and Innovation

Shankar Vedantam is the host of NPR's "Hidden Brain" podcast and radio show, as well as the author of the non-fiction book, *The Hidden Brain: How our Unconscious Minds Elect Presidents, Control Markets, Wage Wars and Save Our Lives*. The book, published in 2010, describes how unconscious biases influence people.

Vedantam's goal is to help people think about the world in new and interesting ways. He is endlessly fascinated by research in fields ranging from psychology and history to sociology and economics. Before joining NPR in 2011, Vedantam spent 10 years as a reporter at The Washington Post. From 2007 to 2009, he was also a columnist, and wrote the Department of Human Behavior column for the Post. He will deliver a talk on Hidden Brain during the Monday GSS and will be signing copies of his book in the CNS Xperience Lounge during the morning beverage break.



Doris Kearns Goodwin

Leadership in Turbulent Times

Walter E. Dandy Orator

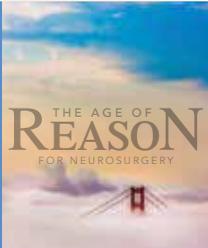
Doris Kearns Goodwin is a world-renowned presidential historian, public speaker and Pulitzer Prizewinning New York Times #1 best-selling author. Her career as a presidential historian and author was inspired when, as a 24-year-old graduate student at Harvard, she was selected to join the White House Fellows, one of America's most prestigious programs for leadership and public service. Goodwin worked with Johnson in the White House and later assisted him in the writing of his memoirs. She then wrote *Lyndon Johnson and the American Dream*, which became a national bestseller and achieved critical acclaim. Goodwin was awarded the Pulitzer Prize for *No Ordinary Time: Franklin and Eleanor Roosevelt: The Home Front in World War II*. Her sixth book, *The Bully Pulpit: Theodore Roosevelt, William Howard Taft, and the Golden Age of Journalism*, won the Carnegie Medal and is being developed into a film. Goodwin's *Team of Rivals: The Political Genius of Abraham Lincoln* served as the basis for Steven Spielberg's hit film *Lincoln*, and was awarded the prestigious Lincoln Prize, the inaugural Book Prize for American History, and the Lincoln Leadership Prize. She will deliver the Walter E. Dandy Oration, *Leadership in Turbulent Times*, on Monday afternoon and will be signing copies of her book, *Leadership: In Turbulent Times*, in the CNS Xperience Lounge immediately following the conclusion of her talk.



Carl Zimmer

A Journey to the Center of the Brain

Carl Zimmer is the author of 13 books about science, including his latest, *She Has Her Mother's Laugh: The Power, Perversions, and Potential of Heredity*. He also writes a weekly column, *Matter*, in the New York Times and created the podcast "What Is Life?" Zimmer's writing has earned a number of awards, including the 2016 Stephen Jay Gould Prize, awarded by the Society for the Study of Evolution to recognize individuals whose sustained efforts have advanced public understanding of evolutionary science. *She Has Her Mother's Laugh* was named a Notable Book of the Year by the New York Times Book Review and was selected for Publisher's



Weekly Best 10 Books of 2018 and the 2018 shortlist for Baillie-Gifford Prize for Nonfiction. The Guardian named it the best science book of 2018. Zimmer will deliver a talk Tuesday morning during the general scientific session and will sign copies of his book, *She Has Her Mother's Laugh* in the CNS Xperience Lounge during the morning beverage break.



Bret Stephens

U.S. Foreign Policy and the World

Bret Stephens became an op-ed columnist and associate editor for the New York Times in April 2017, after spending 11 years as the author of Global View, the foreign-affairs column of the Wall Street Journal, for which he was awarded the Pulitzer Prize for distinguished commentary in 2013. He also served eight years as the Journal's deputy editorial-page editor, responsible for the newspaper's global opinion section, as well as a member of the editorial board. Stephens has twice been chairman of Pulitzer Prize juries and is a national judge of the prestigious Livingston Awards. He holds two honorary doctorates. In 2014 he was awarded the Professional Achievement Prize by the University of Chicago, a distinction he shares with composer Philip Glass, astronomer Carl Sagan, and Nobel laureate Gary Becker. In 2014 Penguin published his book *America in Retreat: The New Isolationism and the Coming Global Disorder*. Stephens will deliver a talk on US Foreign Policy and the World during the Tuesday morning GSS and will sign copies of his book, *America in Retreat*, in the CNS Xperience Lounge immediately following the session.



Rebecca Skloot

John Thompson History of Medicine Lecture
Bestselling author Rebecca Skloot spent more than 10 years doggedly uncovering the truth about the life, death, and ultimate "immortality" of a poor Black tobacco farmer named Henrietta Lacks. Her phenomenal book *The Immortal Life of Henrietta Lacks* has sold nearly 3 million copies to date.

Recognizable for its engaging, straightforward language, Skloot's writing—both in *The Immortal Life* and her many feature articles for major publications—has charmed readers around the world. More than 250 communities, schools, and universities have chosen *The Immortal Life* for their common read programs and it was selected as a best book of 2010 by over 60 media outlets. *The Immortal Life of Henrietta Lacks* also spent more than four years on The New York

Times bestseller list, was named one of Amazon's 100 Books to Read in a Lifetime, has been translated into more than 25 languages, and was made into an HBO film produced by Oprah Winfrey and Alan Ball. Skloot was named One of Five Surprising Leaders of 2010 by The Washington Post. Join us Wednesday, October 23 as Skloot delivers the John Thompson History of Medicine Lecture, followed by a signing of *The Immortal Life* during the morning break.



Aaron E. Carroll, MD

Healthcare in the U.S.

Aaron E. Carroll, MD, is a Professor of Pediatrics, Associate Dean for Research Mentoring, and the Director of the Center for Health Policy and Professionalism Research at the Indiana University School of Medicine. His research focuses on health care financing reform, the study of information technology to improve pediatric care, and areas of health policy including physician malpractice and the pharmaceutical industry/physician relationship. Dr. Carroll also serves as Regenstrief Institute's vice president for faculty development where he leads Regenstrief's faculty development strategy and implementation efforts. Carroll was one of the first to study the use of mobile devices in actual care and has written numerous publications on the subject. He has held millions of dollars in various government agency grants to explore the use of information technology in health care and is one of the leading pediatric informaticists in the U.S. He has also served in this capacity in committees for the American Academy of Pediatrics and is the co-founder of Medical Data Solutions, one of the first software companies to create programs for health professionals for mobile devices. Dr. Carroll is the Web and Social Media Editor at JAMA Pediatrics, co-editor of *The Incidental Economist* and host of "Healthcare Triage," a YouTube channel that received the National Institute of Health Care Management Digital Media Award. He is a regular contributor to The New York Times' *The Upshot*, as well as other media outlets and he has appeared on Good Morning America, the CBS Evening News, ABC News, and The Colbert Report. Dr. Carroll's latest book, *Bad Food Bible*, joins the three books he co-authored on medical myths. He will deliver a lecture on Healthcare in the U.S. during the Wednesday GSS and will host a meet and greet in the Xperience Lounge following the session.

Partner Societies



The CNS is honored to welcome the **Japanese Congress of Neurological Surgeons (JCNS)** as our international partner for 2019. We are thrilled to host several leaders of JCNS at this year's meeting, and we hope you will attend their presentations. We are especially excited to present three new international symposia on brain tumor surgery, cerebrovascular surgery and functional neurosurgery on Monday afternoon.



We also are pleased to continue our collaboration with the **Association of Neurological Physician Assistants (ANSPA)** again this year, with their Annual Fall CME Meeting hosted in partnership with the CNS as a full-day course on Sunday, October 20. We'd like to thank all the ANSPA attendees for helping us make this collaboration seamless.

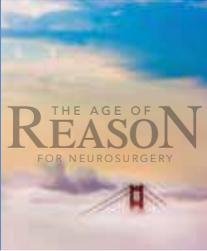
2019 HIGHLIGHTS

This year's meeting is full of can't-miss content and opportunities to enrich your practice. We encourage you to engage with the following features of this year's meeting:

- Enhanced recognition of outstanding neurosurgical research with dedicated awards for best clinical, scientific, and operative techniques oral presentation for each section.
- The CNS Xperience Lounge will be a bustling area to network, explore, and immerse yourself in technology and education. Attendees will have the opportunity to meet and interact with the Innovator of the Year, take advantage of book signings by speakers, participate in wellness activities, and attend a special seminar presented by NVidia on using advanced computing to enhance the field of neurosurgery.
- Daily live surgery via telemedicine technology is back this year in the CNS Xperience Lounge!
- International Symposia – The CNS is bringing together international experts in brain tumor surgery, cerebrovascular surgery, and functional and stereotactic surgery on Monday afternoon to bring new perspectives to your practice.
- Operative Techniques – We have introduced a new abstract type this year, focusing on operative techniques, highlighting expert and novel techniques to achieve the best outcomes for our patients. Operative Neurosurgery will be highlighted each afternoon for each section, with operative videos and special oral presentation opportunities for abstracts focusing on operative techniques.
- Submit your cases now for our Case-based Discussion Sessions, at cns.org/case-based, where real cases will be examined by attendees, offering differing or opposing viewpoints that could shape your response to similar cases.
- New Interactive Multimedia Presentation – A dedicated session with wine and cheese on Tuesday afternoon allows neurosurgeons to present their work to colleagues, with additional opportunities for mini-podium presentations during the session.
- Check out our new full-day Symposia on Saturday and Sunday for a deeper dive into clinical issues relevant to your practice, with more clinical and scientific content at a reduced price with industry-sponsored breakout sessions and lunch included. 

REGISTER TODAY

You absolutely will not want to miss the 2019 CNS Annual Meeting in beautiful San Francisco, California. Bring your family to enjoy the city's incredible food, art and culture, while you connect with your colleagues and catch up on the latest advances in the field. Register by September 18 to secure our best registration rates, as well as a complimentary Spouse/Guest registration.



Ashok Asthagiri, MD



Nader Pouratian, MD



Brian Nahed, MD

New Subspecialty Symposia: A Twist on the PC



Our members have spoken and we've built our program based on their feedback. The CNS recognizes that your time is precious and you are looking to maximize the value of attending the CNS Annual Meeting. We have addressed every element of value to transform our pre-meeting courses into full day symposia – enhancing content, maximizing time, and reducing cost.

First and foremost, we have focused on enhancing the content of symposia, with new topics and speakers to bring more diversity to the educational experience. Each symposium focuses on a specific subspecialty in neurosurgery or targets

specific audiences, and the symposia lineup has been laid out to ensure everyone will benefit from this program transformation. In addition, we have developed courses that bridge specialties to benefit from the expertise of a broader faculty.

By expanding symposia to a full day, we aim to help attendees use their time away from their practice as efficiently as possible. Of course, we also realize that not everyone can attend a full day course, so the option still exists to only register for a half day symposium in many cases. Despite expanding the educational time allotment and content, the CNS has reduced the costs of participation in these enhanced educational opportunities, with prices for

full day content significantly less than ever before.

Several brand-new symposia have been designed to address unmet needs. Transitioning from training to practice is one of the most stressful times in one's career, often with little guidance. We have therefore developed a dedicated symposium on Saturday to help neurosurgical residents and early career neurosurgeons through this critical transition, called *Establishing Your Neurosurgical Career and Maximizing Your Neurosurgical Employment Opportunities*. Maintaining certification is likewise critical, with new requirements now stipulating participation in quarterly morbidity and mortality symposia, which some

> BY EXPANDING SYMPOSIA TO A FULL DAY, WE AIM TO HELP ATTENDEES USE THEIR TIME AWAY FROM THEIR PRACTICE AS EFFICIENTLY AS POSSIBLE. DESPITE EXPANDING THE EDUCATIONAL TIME ALLOTMENT AND CONTENT, THE CNS HAS REDUCED THE COSTS OF PARTICIPATION IN THESE ENHANCED EDUCATIONAL OPPORTUNITIES, WITH PRICES FOR FULL DAY CONTENT SIGNIFICANTLY LESS THAN EVER BEFORE. <

neurosurgeons do not have access to within their hospitals. The CNS now provides two half-day symposia to meet this requirement, in which participants will submit and learn how to review cases and complications, with a goal towards practice improvement. Keeping up with new technologies is one of the most challenging aspects of continued practice. Recognizing this, we developed a new symposium on *Emerging Technologies in Neurosurgery*, which will provide in-depth review of intraoperative technological adjuncts and advances in virtual reality (Sunday). A new symposium on Saturday afternoon, focused on *Training the Trainer*, is targeted to program directors, program administrators, and all neurosurgeons who seek to become superior teachers and mentors.

For those with an interest in expanding their knowledgebase in spine surgery, four symposia are offered. *Advanced Topics in Spinal Operative Techniques* delves into operative nuances, indications, and complication avoidance in minimally invasive spine surgery and motion preservation in cervical spine surgery (Saturday). The other two spine symposia include *Spine Trauma and Spinal Cord Injury Symposium* (Saturday) and the *Spine Biomechanics and Deformity Symposium* (Sunday), which will review these topics from the perspective of the practicing neurosurgeon. The very popular *My Worst Spinal Complication* symposium is still offered as a half day course on Sunday morning. In addition to the *Spine Trauma and Spinal Cord Injury Symposium*, for those with an interest in neurotrauma, the Annual Meeting will feature *Neurotrauma Update* (Sunday), providing in-depth coverage of various topics in brain trauma and neurocritical care.

Three exciting full day cerebrovascular symposia are planned: *Stenting and Bypasses* (Saturday), covers the latest technology, indications and techniques, and allows time for hands-on practice. A *Comprehensive Evidence-Based Guidelines Review for the Treatment of Intracranial Aneurysms* (Sunday) will consider all aspects of management of unruptured and ruptured aneurysms. *Acute Stroke Care: Guidelines Review and Future Directions* (Sunday) is an adaptation of the very successful CNS Stroke course, now integrated into our Annual Meeting.

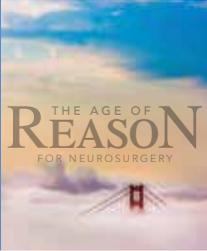
In neuro-oncology, three symposia are planned, including the very popular and successful *Brain Tumor Update* (Saturday) which will cover both benign and malignant brain tumors, *Advanced Functional Mapping and 3D Neuroanatomy* (Sunday), offered jointly with faculty in stereotactic

and functional neurosurgery), and the perennial *Stereotactic Radiosurgery Update* (Sunday half-day course).

While those with an interest in functional neurosurgery will surely want to take advantage of the joint symposium, a full day symposium in *Functional Neurosurgery* is also planned on Saturday, which will comprehensively review new technologies, methodologies, and outcomes in movement disorders, epilepsy, and pain surgery. The *Pain and Peripheral Nerve Surgery Symposium* (Sunday) combines faculty in peripheral nerve and pain to review non-spinal targets for pain surgery and peripheral nerve surgery techniques.

For those with an interest in quality and data analytics, we now combine complementary courses in *Quality Improvement* and *Big Data* into a single symposium, the *Quality Summit Bundle*. This symposium will review key issues in measuring and assessing quality and new and emerging techniques in big data analytics to help advance the field more broadly, bringing in experts from Silicon Valley that have dedicated their careers to this type of work. Finally, the much needed *2019 Update on Coding* is still offered as a half day symposium on Saturday.

The agenda is sure to have content that will enhance every attendees experience and make the CNS Annual Meeting more valuable than ever. We look forward to sharing this transformation with you. 



Jennifer Sweet, MD



Martina Stippler, MD

World Class Science for the Early Birds: Guidelines Sessions and Sunrise Science



Recognizing that our members give up valuable time away from their practices, families, and other responsibilities to attend the CNS Annual Meeting, the Annual Meeting Committee strives to fill each day with valuable scientific content and meaningful opportunities to earn CME. One of the ways we have achieved this is through the highly popular morning Guidelines and Sunrise Science Sessions.

Each morning, before the General Plenary Session, the CNS has lined up a series of Subspecialty Guideline Sessions and Sunrise Science abstract presentations to help members stay abreast of both the evidence-based practice guidelines and the newest developments in each area of neurosurgery.

Guidelines Sessions

As the number of clinical studies and publications continue to expand, it is not only difficult to stay up to date on key clinical trials but it is also increasingly challenging to judge the quality and value of each study and how it should impact your clinical practice. In an effort to address these concerns, the CNS Guidelines Committee works closely with each subspecialty Section to develop clinical practice guidelines that better meet the needs of practicing clinicians. Published neurosurgical guidelines, written by experts in their respective fields, comprehensively evaluate the literature to generate evidence-based recommendations to impact clinical decision-making. These guidelines can be found in *Neurosurgery*, and can also be downloaded in user-friendly CNS Guidelines App. In addition, the CNS now offers

morning Guidelines Sessions during the Annual Meeting, which aim to deliver the results of these evidence-based guidelines in a comprehensive 90-minute presentation.

Monday morning, the program kicks off with two concurrent sessions, presenting data from three sets of neurosurgical guidelines: 1) *Guidelines for the Management of Metastatic Disease to the Spine* will review concepts regarding minimally invasive approaches, separation surgery, the need for stabilization and the role and timing adjuvant therapy. 2) *Stereotactic & Functional Guidelines for Deep Brain Stimulation (DBS)* for Parkinson Disease will review differing DBS targets for the treatment of Parkinson disease; and 3) *Pain Section Guidelines on Neuroablation for Cancer Pain* will discuss the various types of cancer-related pain and their respective lesioning procedures.

On Tuesday, *Guidelines on Management of Brain Metastases Update* will address the role of surgery, radiosurgery, whole brain radiation, and emerging and investigational therapies. This session features a multidisciplinary panel of experts to advance the care of complex intracranial metastatic disease. Also on Tuesday, the trauma section will present *The Voice of Reason in Brain Death: From Bedside to the News* addressing brain death protocols and guidelines and discuss their neuroethical implications.

Finally, Wednesday morning will pack in three popular guideline topics: 1) *The Cerebrovascular Guidelines Update*, reviewing the current recommendations for cerebral aneurysms, arteriovenous malformations, and acute ischemic and hemorrhagic stroke; 2) *Guidelines on the Management of Glial Tumors*, covering surgical nuances such as the extent of resection and its clinical impact, the role of neuromonitoring in surgery, and the expanding indications for laser ablation; and,



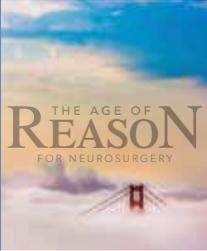
lastly, 3) *Brain and Spine Trauma Guidelines* will discuss severe traumatic brain injury and recommendations pertaining to intracranial pressure monitoring, hemicraniectomy, and navigating the timing and reversal of antithrombotic agents. This will be followed by a discussion of the guidelines for acute cervical and thoracolumbar spine trauma, focusing on surgical and nonoperative management strategies.

With so much clinically relevant content on these essential areas of practice, the Guidelines Sessions have been among the most well attended events at the Annual Meeting. The standing-room-only crowds and lively dialogue between faculty and attendees attest to their value.

Sunrise Science Abstracts

Concurrent to our Guidelines Sessions, the program will also offer two abstract sessions each morning. Selected discussants will present their most recent original scientific data. Abstracts will be organized by subspecialty area. Monday morning we will present abstracts in Tumor and Cerebrovascular. Tuesday sessions feature Spine and Pediatric Neurosurgery abstracts, and Wednesday sessions will cover Functional and Pain. Efforts have been made to stagger the content to minimize overlap in any subspecialty areas. So plan your schedule according to your interests and start your day off with essential information for your practice. 📄

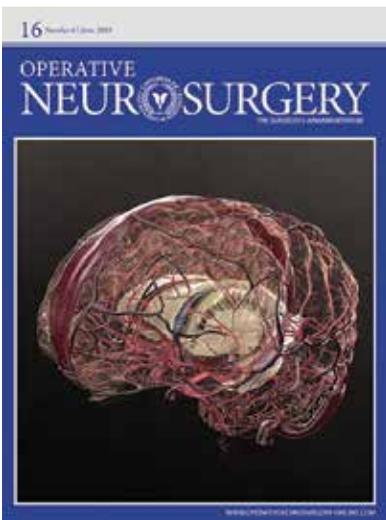




Brandon J. Fiedor, MA

Brian V. Nahed, MD

Operative Techniques and Case-Based Discussion Sessions at the 2019 CNS Annual Meeting



In an effort to deliver highly focused content that addresses the state of the art and future of neurosurgical subspecialties, the CNS is proud to present the “Operative Techniques and Case-Based Discussion Sessions” new for 2019!

In addition to the specialty specific focus of afternoon sessions, this year, we have enhanced the interactive case-based discussion sessions to incorporate content highlighting operative technique. To complement

this shift in session format we have introduced a new abstract type for 2019: “Operative Techniques” which highlights the technical aspects of neurosurgery focusing on rationale (particularly for new techniques), indications, application, and outcomes. Those submitting Operative Techniques abstracts are encouraged to include a surgical video that highlights relevant preoperative imaging, the most important technical aspects of the case, and a review of clinical and imaging outcome.

Each session will begin with one or two speakers who will highlight surgical technique with an operative video. Drawing on the vast multimedia resources of *Operative Neurosurgery*, many of these presentations will be given by authors of some of the most highly viewed Surgical Video articles published in the journal. Following this, select authors of accepted Operative Techniques abstracts will present their novel work. These presentations will be followed by case-based discussions by subspecialty experts on cases submitted by members and attendees. The Operative Techniques and Case-Based Discussion Sessions will be offered for each section and will be held on Monday, October 21 and Tuesday, October 22 from 4:15 – 5:45pm. Please join us! 📺

SESSION HIGHLIGHTS

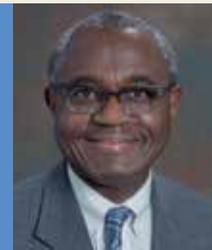
Subspecialty focused content and sessions available for each section. Presentations and Videos from *Operative Neurosurgery* authors.

New for 2019, the Operative Techniques abstract! This new abstract category highlights technical aspects of new and unique surgical management of neurological disease. Each abstract describes the indications and application of the technique and includes a case demonstrating how the technique differs from existing operative technique. Operative Technique abstracts will include relevant preoperative imaging, a narrated video illustrating the most important technical aspects of the case and a brief review of clinical and imaging outcome.

Case-based discussions featuring member and attendee submitted cases! Submit your case for discussion at [cns.org/case-based](https://www.cns.org/case-based) 📺



Brandon J. Fiedor, MA

Nelson M. Oyesiku,
M.D., Ph.D., FACS

NEUROSURGERY® Publications at the 2019 CNS Annual Meeting

For the 2019 CNS Annual Meeting, NEUROSURGERY® Publications will offer attendees several ways to engage with journal features and products, its leadership and staff, as well as authors featured in the pages of *Neurosurgery* and *Operative Neurosurgery*!

Journal leadership and staff will be available in the CNS Xperience Lounge to share the latest initiatives and developments in *Neurosurgery*, *Operative Neurosurgery*, *Clinical Neurosurgery*, and *The Surgeon's Armamentarium*. Stop by to review the latest issues of *Neurosurgery* and *Operative Neurosurgery* and learn about special features including recent supplement publications, ongoing review series, enhanced abstracts, and call for papers. You can also learn about and interact with several digital features including CNS Spotlight, *Neurosurgery & Operative Neurosurgery Speaks*, CNS Journal Club Podcast, and *The Surgeon's Armamentarium*.

Xperience Lounge Highlights

- Copies of recent issues of *Neurosurgery*, *Operative Neurosurgery*, and *Clinical Neurosurgery* will be on display and available free of charge. *Clinical Neurosurgery* promotional pieces are printed once yearly and are a popular item. Be sure to claim your copy as they are limited!
- *Neurosurgery & Operative Neurosurgery Speaks* will be featured for those interested in listening to select journal article abstracts in one of 10 languages.
- The CNS Journal Club Podcast, featuring essential journal article conversations with the authors will be featured for those interested in engaging with content in a classic journal club format.
- CNS Spotlight, a monthly journal feature highlighting content in *Neurosurgery* with relevant content from the CNS web of knowledge, will be on display for those interested in learning more about this curated experience.
- *The Surgeon's Armamentarium*, with a new look for 2019, will be on display and demonstrations by journal staff will be provided upon request.
- Residents are encouraged to stop by to learn more about the yearly NEUROSURGERY® Publications Resident Fellowship in addition to other ways they can get involved with the peer-review process and journal operations.

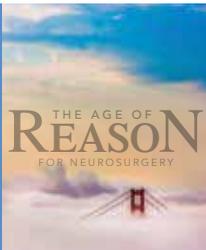
- Journal staff and representatives will be available throughout the meeting to assist with questions, comments, and suggestions attendees may have on any journal related topic big or small. Please bring your thoughts and ideas to the Xperience Lounge!

General Scientific Session Highlights

- Editor-in-Chief, Nelson M. Oyesiku, MD, PhD, FACS, will address the meeting during General Scientific Session on Tuesday, October 22 at 8:42 am. During his address, Dr. Oyesiku will discuss current journal initiatives as well as review NEUROSURGERY® Publications' progress and accomplishments from over the past year.
- Returning in 2019, the **Neurosurgery Paper of the Year** will recognize the most potentially impactful papers published in *Neurosurgery* from July 2018 to May 2019. Papers considered are those that challenge dogma, create a paradigm shift, propose new approaches to patient care, or analyze and interpret big data and trial results. Awards will be given for Top Paper of the Year and Paper of the Year: Section Level (chosen from select subspecialties). The recipient of the Top Paper of the Year award will be honored with a presentation during a General Scientific Session. Paper of the Year: Section Level winners will be honored with a presentation during the appropriate section session. Hear about the best science published in the pages of *Neurosurgery* by attending a Paper of the Year presentation!

Session Highlights

- New for 2019, the **Operative Techniques and Case-Based Discussion Sessions** available for each section, will begin with 1-2 speakers who will highlight surgical technique with an operative video. Drawing on the vast multimedia resources of *Operative Neurosurgery*, many of these presentations will be given by authors of some of the most highly viewed Surgical Video articles published in the journal. Following this, select authors of accepted Operative Techniques abstracts will present their novel work, followed by case-based discussions by subspecialty experts on cases submitted by members and attendees. The Operative Techniques and Case-Based Discussion Sessions will be offered for each section and on Monday, October 21 and Tuesday, October 22 from 4:15 – 5:45 pm. Please join us!
- New for 2019, the **NEUROSURGERY® Publications: Meet the Editors** session will treat attendees to presentations from the Editors-in-Chief of several leading journals in neurosurgery including *Neurosurgery*, *World Neurosurgery*, *Acta Neurochirurgica*, and *Journal of Neurosurgery*, outlining their experiences with the peer review process. Panelists will share their thoughts on how to most effectively contribute to this process and then stay for a Q&A with the audience. This session will take place on Tuesday, October 22nd from 1:00 – 2:00 pm at the Moscone West Convention Center in Room 3002. Please join us for this rare opportunity! 📌



Clemens M. Schirmer,
MD, PhD

Daniel J. Hoh, MD

International Division Update

The Congress of Neurological Surgeons (CNS) aims to serve its members, not just domestically but also worldwide. The International Division is one of the outward facing functions of the CNS and we recently underwent a recalibration of the CNS international strategy. Building on our strengths in neurosurgical Education and Leadership we are engaging international neurosurgeons on multiple levels and offer multiple touchpoints.



The Annual Meeting International Partnership has long been a centerpiece of our International focus. We are excited to be partnered with the Japanese Congress of Neurological Surgeons (JCNS) in 2019, and kicked our partnership off with a successful CNS/JCNS Vascular webinar back in May.

In San Francisco, we will offer three parallel sessions with specific international focus in an exclusive time spot. Featuring internationally acclaimed speakers, not only from our meeting partner, the JCNS, but also from other countries and from the US, these symposia are one of the most anticipated highlights of the meeting. The topics of the three sessions will be centered on neurosurgical oncology, functional, and vascular. Unique to the oncology session will be content spanning the entire spectrum of oncology from mapping to endoscopic skull base techniques. Both the vascular and functional sessions will feature several rapid-fire abstract presentations. Bringing world renown speakers together to exchange ideas and results with an international focus along with the social events around the international reception will meet the expectations of our international members more than ever.

We created a new international ambassador program to strengthen our relationship with our core partners, appointing neurosurgeons of international renown and with ties to both their respective country or society and the CNS, providing insights and recommendations to the CNS how to tailor our engagement. Combined with active, appointed members of the International Division who attend the committee meeting this will allow us to have an increasingly tailored and finely grained approach to the country they represent. Both sides will have the benefit of learning more about the respective needs and wants. We recognize that our international strategy is not a one-size-fits-all approach and rather has to be tailored to the individual international partner. Working with the ambassadors for our core partners will allow us to engage these partners closer and bring more value to the mutual relationship.

International membership in the CNS offers substantial benefits. Reaching out to all international neurosurgeons from all countries and



training backgrounds we created a convenient and comprehensive way to access our vast repository of online educational activities and obtain recognition for participating in these activities. Building a transcript of activities every year, our international members can obtain or then maintain a certificate recognizing their participation in high quality CNS online or live educational content and display this achievement to their colleagues and patients. Visit www.cns.org/international to learn more, sign up and start accumulating points towards your certificate.

At the upcoming Annual Meeting of the CNS October 19-23 in San Francisco later this year we are attempting to create a unique added value for our international audience.

With this we want to conclude and encourage our international audience—member and non-members alike—to participate and contribute. We want to hear from you and would like to have you on-board as members of the International Division. 

CNS INTERNATIONAL RECEPTION

SATURDAY, OCTOBER 19

5:30 - 7:00 PM San Francisco Marriott Marquis



Lola Chambliss, MD

2019 Dinner Seminars: Novel Topics in a Favorite Format



Attending five days of a neurosurgical meeting can be a sacrifice; practices must be covered, patients must wait, and family commitments may be postponed. When our members take the time out of their schedules to attend the CNS Annual Meeting, we want to be sure that they have every opportunity to maximize the educational content they receive. Dinner seminars have proven to be a popular option for attendees looking to gain deeper insight on a particular topic at a time in the day when competing offerings are few. They represent a relatively informal setting where open discussions and networking are encouraged and they appeal to the multitaskers amongst us; after all, we all have to eat!

In keeping with the theme for the 2019 Annual Meeting, the dinner seminar program includes a broad array of subject matter proposed by the leadership of the various sections. A diverse faculty

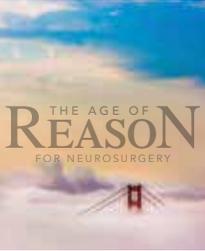
incorporates well known leaders in their respective fields as well as up and coming neurosurgeons with fresh perspectives on state of the art technology and approaches. We will take advantage of the outstanding culinary scene in San Francisco to host these events at venues which offer an ideal setting for learning as well as outstanding cuisine, with convenient transportation options from the San Francisco Marriott Marquis.

The seminars kick off with the always popular offering from the Council of State Neurosurgical Societies (CSNS) on Saturday night. This year, Dr. Ratliff and his team will break down the process of implementation of MACRA into practices and discuss how to avoid penalization through appropriate documentation, coding and billing. This seminar will be hosted at Boulevard, recognized by Zagat as San Francisco's most popular restaurant, in part because of its spectacular bay views and inspired menu by renowned chef, Nancy Oakes.

Monday night sees two dinner seminars offered. Spine surgeons will be interested to attend the seminar on navigation and robotics in spine surgery, where the implementation of these new technologies are discussed and their future in the practice of spine surgery will be debated. This dynamic event will be held at Morton's Steakhouse. Meanwhile, those interested in cerebrovascular surgery will be drawn to the seminar on AVM management which will focus on the multidisciplinary approach to those lesions with expert speakers contrasting the roles of microsurgery, endovascular management, and stereotactic radiosurgery. The AVM seminar will be held at Prospect. The restaurant offers local sustainable, organic ingredients and a warm, modern urban environment.

The final seminar on Tuesday will appeal to a broad audience, as leaders from the fields of functional neurosurgery and neurosurgical oncology discuss the rapidly changing applications of laser interstitial thermal therapy (LITT.) This topic will be relevant for specialists and generalists alike, as this revolutionary technology becomes mainstream and neurosurgeons in diverse practice settings must become familiar with its indications and implementation. The seminar will be held at Harris' Steakhouse, known as the San Francisco Steakhouse for their commitment to the classic traditions of an elegant atmosphere, exceptional service, and extraordinary cuisine.

Tickets to dinner seminars must be purchased in advance and attendance is limited based on the size of each venue. These sessions typically sell out! Be sure to purchase your tickets during your early-bird meeting registration, and invite colleagues to join you for a nice meal and a vibrant discussion of topics representing the leading edge of neurosurgical practice. ■



Alexander A. Khalessi, MD

The CNS Xperience Lounge – Your Hub for Connection



For the past two years, the CNS Xperience Lounge has grown to be one of the most popular destinations at the CNS Annual Meeting, allowing attendees to reconnect with colleagues and network with other experts in the field. Recognizing its value, the Annual Meeting Committee has continued to expand and enhance this resource. We are excited to welcome you to the Xperience Lounge again in San Francisco!

Located in the Exhibit Hall, the CNS Xperience Lounge lets you get up close and personal with this year's awardees, connect with your colleagues and mentors, and learn more about new technologies featured throughout the meeting.

Meet and greet sessions will be held throughout GSS intermissions and provide opportunities to meet Honored Guest, Raymond Sawaya and select keynote speakers like Aaron Carroll, Brett Stephens and Doris Kearns Goodwin. The lounge will also host five book signings with our keynote speakers.

In keeping with CNS tradition of identifying bleeding edge technologies, the Innovator of the Year award finalists will each give a brief presentation on Monday afternoon to talk about their new submissions that are changing neurosurgical practice and care. (Note: For more information on the Innovator of the Year award or

to submit your neurosurgical innovation for consideration, visit cns.org. Applications are due July 31.)

Authors of the year's Top Papers in *Neurosurgery* will also host sessions throughout the meeting and allow you to ask questions about their work. You can also browse digital posters or check in with the editorial staff of *Neurosurgery* and *Operative Neurosurgery* to learn more about developments in CNS publications.

The Xperience Lounge is home to the Presentation Theater, featuring Live Surgery presentations and educational update sessions from CNS' top corporate partners.

Be sure to set aside some time to join us at the heart of the CNS Xperience Lounge, for a comfortable, casual networking space to help you connect with colleagues and friends. Grab a latte or a beer and catch up with friends from training, snag some dedicated time with your mentor, or make one-on-one appointments with industry partners whose technologies you need to see. The Xperience Lounge helps make the most of your time at the Annual Meeting. 

— XPERIENCE LOUNGE HIGHLIGHTS —



MEET & GREET SESSIONS

Raymond Sawaya, MD
 Honored Guest
 Monday, October 21

NVIDIA: ARTIFICIAL INTELLIGENCE FOR NEUROSURGEONS— A HANDS-ON DEMO

Don't miss a one-hour demonstration of AI potential and take a test drive of the Nvidia Deep Learning Institute Tuesday morning.

VOICES OF NEUROSURGERY STORY SLAM

Tuesday, 1:45–2:15 pm

FIRESIDE CHAT: PHYSICIAN WELLNESS AND BURNOUT

Tuesday, 2:30–2:45 pm



BOOK SIGNINGS

Shankar Vedantam
 Monday, October 21

Doris Kearns Goodwin
 Monday, October 21

Carl Zimmer
 Tuesday, October 22

Brett Stephens
 Tuesday, October 22

Rebecca Skloot
 Wednesday, October 23



LIVE SURGERY

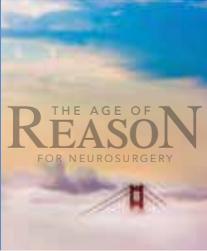
Daily from 10–10:30 am and
 Monday from 2:00–2:30 pm

INNOVATOR OF THE YEAR PRESENTATIONS

Monday, October 21, 2018 from
 2:00–2:30 pm

EDUCATIONAL UPDATE SESSIONS

Tuesday, October 22 from 1:45–2:45 pm



Daniel J. Hoh, MD

Sydney Manola

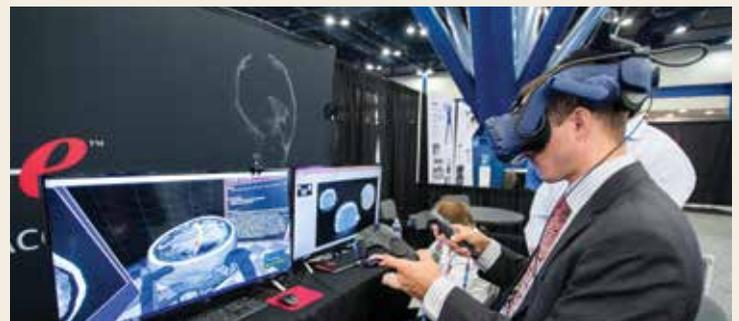
The 2019 CNS Annual Meeting Exhibit Hall



The 2019 Congress of Neurological Surgeons Annual Meeting, October 19 – 23 in San Francisco, California is an excellent opportunity to learn about exciting new research, discuss current clinical practice guidelines, hear from insightful invited guest speakers, and network with new and old colleagues. In addition, the Annual Meeting is a unique venue to explore state-of-the-art technology to better enhance your surgical practice. Neurosurgeons consistently remain at the forefront of developing new surgical techniques and devices from intraoperative navigation, deep brain stimulation, surgical robotics, and precision endoscope and exoscopes for operative visualization. That same curiosity and creativity are what make the CNS Exhibit Hall a fantastic display of the latest in neurosurgical innovation.

Unlike a conventional showroom, the CNS Exhibit Hall is a truly immersive and interactive experience. Live surgery is broadcast daily from key thought leaders as they take you through complex procedures in real time. These surgeries often integrate multiple advanced technologies, with invited faculty showing how these devices can level the playing field when tackling the most challenging cases. They offer a complementary learning experience to the general scientific sessions, as they demonstrate direct application of the latest neurosurgery advances in real live surgery.

Also in the exhibit hall, educational update sessions are rapid-fire, 10-minute, case-based talks highlighting a novel neurosurgical



device over coffee with your peers. Sponsored mid-day symposia are an opportunity to sit down over catered lunch for an invited lecture, and ask-the-expert panel discussion on surgical nuances and pearls. Throughout the day, corporate displays and in-booth presentations allow attendees to explore a variety of devices through interactive face-to-face demonstrations. For those looking for more practical training, mobile cadaver labs with hands-on instruction are accessible directly from the convention center. Last, the CNS Xperience lounge is an inviting popular area for friends and colleagues to link up, meet invited guests for book signings, and network with industry partners.

We look forward to joining you at the Congress of Neurological Surgeons Annual Meeting and exhibit hall this October 2019 in San Francisco. 



Costas G. Hadjipanayis,
MD, PhD



Robert J. Spinner, MD

CNS Oral Board Exam Course: Optimal Preparation Through an Individualized and Tailored Approach

The Oral Board Exam represents the final hurdle on the road for a candidate to become board certified in neurosurgery (after passing the primary exam and completing an ACGME accredited residency). Preparing for this important exam is as important as preparing for a surgical case. For seven years, the CNS has sponsored a one-and-a-half day Oral Board Exam Preparation course. Initially offered once per year, the course is now available twice per year (in the fall and winter) to provide increased access to learners. The next course will be held immediately prior to the CNS Annual Meeting, October 19-20 in San Francisco.

Although fair and standardized, the oral exam is daunting and intimidating because of its broad scope and format. Given neurosurgeons' busy schedules, preparation can be equally as daunting and intimidating and must be time efficient, rigorous, and relevant.

Two years ago, the ABNS changed the format of the oral exam. Recognizing the presence of increasing subspecialists in the field both in academic and private practice, the ABNS began offering oral exams with a general neurosurgical or a subspecialty focus (vascular, tumor, trauma/critical care, spine, functional, and pediatrics). The scope of the general neurosurgery exam became better defined and narrower focusing on neurosurgical patients that can present to any emergency room. For the first time, it included not only cases presented by examiners on general neurosurgery (and/or a subspecialty focus) but also actual cases of the examinee (selected by the examiners). This new format is intended to assess competency in the cerebral and technical aspects of a neurosurgical practice—by testing knowledge and judgment, particularly related to specifics of the pre, intra- and postoperative management of patients and their complications.

Mindful of this new paradigm, we have redesigned the 2019 October CNS Board preparation course to reflect the recent changes in the oral exam and prepare participants for the general or subspecialty-based neurosurgical oral exam. Participants will learn core principles of general neurosurgery and then more focused information related either to general neurosurgery (i.e., complex spine) or a selected subspecialty. Learners will take part in didactics as well as small group and one-on-one case-based sessions depending on the track that they chose. All teachers are neurosurgical leaders

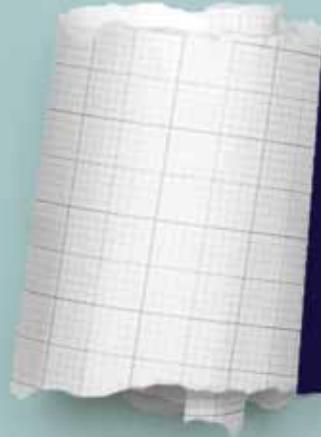


who are effective and enthusiastic educators. Subspecialty sections will be directed by experts within these fields. Instructors (matched with participants practices) will be mock examiners, offering constructive feedback on case presentation style and responses, and identifying gaps and ways to address them. Candidates can learn, rehearse, and perfect in a simulated environment.

We recognize that there are different ways to prepare and various courses to take, all of which are beneficial. We believe this course, however, optimizes preparation through a tailored, directed, and individualized approach. Learners will gain knowledge, confidence, and experience with the new exam format. Our goal is for participants not just to pass the exam, but master skills and information that will be applicable throughout their careers. 

**Registration is now open for the
2019 CNS Oral Boards Review Course at
CNS.ORG/ORALBOARDS**

The only thing missing from the CNS Annual Meeting is



YOU!

We've packed the program with essential content, engaging speakers, and exciting new course formats. But every year, some of the greatest value at the Annual Meeting comes from the contributions of our members. **Don't miss your chance to be a part of the 2019 Annual Meeting through one of these great opportunities:**

- **Submit your case** to be featured at one of the Operative Techniques and Case-based Discussion Sessions on Monday, October 21 and Tuesday, October 22. You'll hear and see alternative, and sometimes opposing, management and surgical approaches that will immediately impact your practice and patient care. Visit cns.org/case-based to submit your case by July 31 and to see a complete list of submission categories.
- **Submit an Abstract** – Wednesday, July 24 is the final day to submit a late breaking abstract for presentation at the 2019 CNS Annual Meeting. <http://latebreaking19.cns.org>
- Have an innovation that will benefit the field of neurosurgery? **Submit an application for the Innovator of the Year Award**, open to individuals, companies, and programs. The top three finalists will present their innovation at the 2019 Annual Meeting and meeting attendees will have the opportunity to vote for the winner onsite. Submit your application by July 31 at cns.org.
- **Submit a story** for the Voices of Neurosurgery Story Slam – Share your personal experiences about wellness and managing burnout in neurosurgery during a special session in the Xperience Lounge on Tuesday, October 22. Visit cns.org to learn more.
- **Become a social media ambassador** – The CNS is looking for a few neurosurgeon influencers to help us share throughout the Annual Meeting. Contact marketing@cns.org to learn more.
- Interested in volunteering at the CNS Annual Meeting? **Sign up for the Sargent at Arms program** to help the Annual Meeting committee with onsite duties at a ticketed course and earn your course ticket for free. The SAA program is open to Residents and Fellows. Select your course during online registration.



2019 CNS Annual Meeting

San Francisco, California

October 18-23, 2019

SECTION NEWS



Neurotrauma and Critical Care Section Update



Julian E. Bailes, Jr., MD
Chair, Section on
Neurotrauma and
Critical Care

There are many new and emerging technologies for the delivery of care and achievement of better outcomes for traumatic brain injury (TBI) patients. These include assessment and imaging of cerebrovascular functioning, inpatient and outpatient rehabilitation and resource utilization, implementation of the electronic medical record in the trauma setting, and others. It is estimated that 50 million people in the United States live one hour or more from a trauma center, so access to specialty care remains paramount.

Clinical research continues to be active and relevant for concussion, as it continues to remain an important and current topic in civilian life, for military service members, and in athletes. The diagnosis remains elusive, as a concussion is ordinarily a subjective presentation and there are no outward or visible signs of injury. The diagnosis of concussion remains one of the most challenging tasks facing the clinician, and emerging technologies are implementing oculomotor function assessment, electroencephalography network patterns, brain pulsatility, and other methods. A recent study by Adrian et al. utilized the biomarkers UCHL1 and GFAP to predict the presence of intracranial lesions on CT scans, representing the first FDA approved blood test to document a mild TBI. This technology is not, however, a concussion test nor is it approved for use in pediatric patients.

However, we must remember that pursuit of science in neurotrauma is vitally important for advances in the field as well as for optimal patient care and outcomes. There has been pessimism in the past on the heels of innumerable failed clinical trials for TBI intervention. New thinking has led to efforts for more individualized approaches, which resemble the personalized care and genetic

analysis which has led to advances in other areas of medicine. Recently there has been over \$100 million dollars committed to conducting large studies, including the NCAA-U.S. Department of Defense Concussion Assessment, Research and Education (CARE) Consortium, which is the largest concussion and repetitive head impact study ever undertaken. Funded jointly by the NCAA and DOD, it began in 2014 and now includes subjects across the U.S. on 30 college campuses. The CARE Consortium is part of the broader NCAA-DOD Grand Alliance, and consists of two parts: clinical study, which aims to define neurological symptoms and signs, and how they are expressed and evolve, representing the natural history of concussion. In addition, an advanced research project aims to better understand the neurobiology of concussion and repetitive head impact exposure.

Another large study, the NINDS-funded, multicenter Transforming Research and Clinical Knowledge in Traumatic Brain Injury (TRACK-TBI) is a public-private partnership which is collecting and evaluating clinical data from 18 U.S. medical centers, including detailed neuroimaging, blood samples for biomarkers, and clinical outcomes, with a goal of enrolling 3,000 subjects. Geoffrey Manley, David Okonkwo, and other neurosurgeons have been actively involved in this cutting edge research. In my lab, we are working with an in-vitro assay using patient-specific neurons created through stem cells from blood samples. The ability to analyze the patients' genotypes, clinical phenotypes and response to in-vitro assessments should usher in a new era of looking at the heterogeneous TBI problem through a personalized approach. The JSNTCC continues to be on the cutting edge and very relevant to our members and the public which they serve. ❏

Pediatric Section Update: Innovation in the Surgical Treatment of Epilepsy



Jarod L. Roland, MD

Matthew D. Smyth, MD,
FACS, FAAP

The surgical treatment of pediatric epilepsy is currently undergoing a transformation in the neurosurgical approaches to diagnostic evaluation and therapeutic treatment. Several techniques have been innovated and modified with a common theme of less invasive procedures that provide comparable results with quicker recovery. Many innovations are made possible by advances in technology that either improve a previous technique, such as robotic guidance for stereo-electroencephalography (SEEG), or introduce a new modality for achieving a similar result, as with laser interstitial thermal therapy (LITT) for focal ablation. Other techniques have also continued to be modified to be performed through a minimally invasive approach. Collectively, these advances set the stage for a very exciting time for pediatric neurosurgeons to be caring for patients with epilepsy.

Stereo Electroencephalography

SEEG has seen a tremendous growth among pediatric neurosurgeons throughout North America in recent years. Even though SEEG has been well described and routinely used in Europe for several decades, the introduction of surgical robotics and high-quality CT angiography has led to greater accuracy and shorter procedure times for placing SEEG electrodes. In addition to the numerous cases series and, more recently, meta-analysis in the adult literature, two recent reports on institutional pediatric experiences have further supported the safety of SEEG (Goldstein, et al 2018 and Ho, et al 2018). Both reports included >20 pediatric patients and report no major complications (1 asymptomatic extra-axial hemorrhage) and 92-95% went on to a therapeutic surgical procedure. Both made use of the ROSA surgical robot for stereotactic placement and MRI or CT angiography to avoid vasculature when planning electrode trajectories.

Neuromodulation in Pediatric Patients

Resection, disconnection or ablation of the seizure onset zone remains the primary goal of most pediatric epilepsy surgery. However, neuromodulation for non-localized epilepsy continues to make significant advances. Vagal nerve stimulation (VNS) is the most commonly employed method for reducing seizure burden by modulating the central nervous system through peripheral stimulation of the vagus nerve. VNS therapy is supported by a large number of well-orchestrated studies that led to initial FDA device approval in 1997 for patients older than 12 years of age. Recently, additional studies have included younger patients demonstrating similar efficacy and low complication rates. This led to recent FDA approval for children at age 4 years and greater.

Deep brain stimulation for movement disorders is an established procedure that has recently seen adoption for non-focal epilepsy. DBS for epilepsy has been reported most in adult populations with studies like the SANTE (Stimulation of the Anterior Nuclei of the Thalamus) trial. Recently a systematic review by Yan, et al, was published in 2018 that identified 40 pediatric cases across 21 reports in the literature. Overall, 85% of cases reported seizure reduction and 12.5% achieved seizure freedom with DBS. These cases spanned a wide range of targets, including the centromedian nucleus of the thalamus, anterior nucleus of the thalamus, subthalamic nucleus, hypothalamus, mammillothalamic tract, and the zona incerta. Although the results are exciting, much work is still needed to determine optimal patient selection and the best target for stimulation.

Interestingly, one innovative case study by Kokoszka, et al (2018), made use of the responsive neurostimulation (RNS, NeuroPace) device for both cortical and deep brain responsive stimulation. Their

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configuration placed a surface lead on the temporal neocortex and a second lead in the ANT. By detecting seizures from the neocortex and stimulation on both the temporal surface and ANT, they achieved closed-loop corticothalamic stimulation resulting in a 50% reduction in seizure frequency. The relative strengths of closed-loop stimulation through RNS compared to open-loop neuromodulation devices like VNS and DBS are not fully resolved. However, all of these modalities carry great potential for intervention in non-focal medically refractory epilepsy.

Innovative Approaches to Surgical Disconnection

Beyond neuromodulation, advances in reducing surgical morbidity are being achieved by adopting endoscopy and LITT for hemispherotomy and corpus callosotomy. Chandra, et al (2018), published a comparison of endoscopic assisted and open hemispherotomy in pediatric patients, with detailed operative photographs and an accompanying surgical video. They describe a hybrid approach using an operating scope of similar diameter to an exoscope, which is typically held outside of the surgical cavity, but positioned intracranially at a distance to facilitate a wider field of view. They also used the ROSA surgical robot for precise positioning of the endoscope. A similar endoscopic approach to hemispherotomy was also reported by Wagner, et al (2018). They detail the technical approach in a cadaveric study followed by the successful clinical translation of the procedure performed in 2 pediatric patients.

Corpus callosotomy alone, or as a step of a functional hemispherotomy can similarly be achieved via an endoscopic-assisted technique. Endoscopic approaches have been described with variations in approach from the vertex (Sood, et al, 2015), similar to endoscopic hemispherotomy techniques, as well as a posterior

approach that requires less interhemispheric dissection (Sood, et al, 2016).

Alternatively, LITT is being increasingly adopted at institutions across the country. While LITT is used more frequently for tumors or lesional ablation, it has also been described for achieving corpus callosotomy with a much less invasive procedure. LITT is also referred to as magnetic resonance guided LITT (MRgLITT) or as MRI-guided laser interstitial thermal ablation (MTLA) and is FDA approved to necrotize or coagulate soft tissue. Therefore, by placing a laser fiber along the length of the corpus callosum, surgical disconnection can be achieved by ablating tissue along the length of the trajectory. Palma, et al (2019), describe their approach to LITT callosotomy in 3 patients (2 of which are pediatric) with > 3 years follow up. Variations in laser fiber trajectory are used depending on the specific anatomic considerations.

Conclusion

These and many other innovative approaches to the neurosurgical treatment of epilepsy are making tremendous strides to improving the care of pediatric patients with medically refractory epilepsy (MRE). It is well known that significant numbers of patients with MRE never undergo evaluation at a comprehensive epilepsy center where surgical interventions can be considered. By advancing the field with greater options for surgical treatment, particularly less invasive options that improve discomfort, shorten hospital stay, and reduce risks, we have great potential to increase the accessibility and acceptability to patients, parents, and referring providers to seek appropriate neurosurgical evaluation. The studies above suggest pediatric neurosurgeons are contributing to this goal by surgical innovations that make use of evolving technology. ■

The Evolution of Evaluation and Management Coding: An Analysis of Two Proposals.



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little to disagree with in those statements. E/M coding is indeed complex and out of proportion to the dollar value of the services provided. The code sets are out of date (1995 and 1997) and are becoming less congruent with the changing healthcare system. Many of us have found ourselves focusing on the technicalities of a particular code, which forces us into excessive documentation to justify the code selected and capture the value of our work. We all believe that that time would be better spent focusing on the patient.

Invoking the spirit of “Patient’s over Paperwork,” CMS has proposed a single payment rate for visits that are currently reported as levels two, three and four, which

represent the majority of office visits. The documentation required for payment would be limited to what is currently required for a level two visit. A separate payment rate would remain for the most complex patients, those patients for whom a level 5, with the possibility of using time or medical decision making to justify the level of coding. The coding and reimbursement scheme would resemble **Table 1 below**.

In short, the five levels collapse into two for both new patients and established. Patient visits would either fall into routine or complex. Absent a new plan developed by organized medicine, the CMS proposal is slated to become effective on beginning on Jan. 1, 2021.

A Letter from Medicare

On Nov. 5, 2018, the Centers for Medicare & Medicaid Services (CMS) Administrator, Seema Verma, issued a letter regarding evaluation and management (E/M) office visit coding. Specifically, Ms. Verma noted the fact that the coding scheme for E/M was developed in the 1990s and since that time the nature of clinical work in medicine has evolved into patient-centric collaborative models with clinical teams working in unison — a model that the 1990’s framework does not capture. Furthermore, Ms. Verma noted that a major cause of physician burnout is the documentation burdens associated with E/M coding. She stated that a change was long overdue.

Any neurosurgeon reading that correspondence would likely agree with many of its sentiments. After all, there is

MS Proposal for E/M Coding Simplification.

| | Complexity Level under CPT | Visit Code Alone* | Visit Code With Either Primary or specialized care add-on code** | Visit Code With New Extended Services Code (Minutes Required to Bill) | Visit with Both Add-on and Extended Services Code Added** | Current Prolonged Code Added (Minutes Required to Bill)* | Current (2018) Payment Amount |
|---------------------|----------------------------|-------------------|--|---|---|--|-------------------------------|
| | | | | | | | Revised Payment Amount*** |
| New Patient | Level 2 | \$76 | \$130 | \$143 | \$197 (at 38 minutes) | \$210 | \$211 |
| | Level 3 | \$110 | | | | | |
| | Level 4 | \$167 | | | | | |
| | Level 5 | \$211 | \$211 | \$344 (at 90 minutes) | | | |
| Established Patient | Level 2 | \$45 | \$90 | \$103 | \$157 (at 34 minutes) | \$170 | \$148 |
| | Level 3 | \$74 | | | | | |
| | Level 4 | \$109 | | | | | |
| | Level 5 | \$148 | \$148 | \$281 (at 70 minutes) | | | |

Table 1. The new proposal eliminates the level 1 code, and combines levels 2, 3 and 4 into one code for both new patients and established patients. Level 5 codes would require documentation with time, medical complexity or application of the previous criteria.

The Valuation Process of a CPT Code

The E/M codes represent the work product of the CPT Editorial Panel, a representative body from the American Medical Association (AMA). As such the AMA, the Congress of Neurological Surgeons (CNS) and the American Association of Neurological Surgeons (AANS) strongly objected to CMS proposing a new coding scheme outside the auspices of the AMA/Specialty Society Relative Value Scale (RVS) Update Committee (RUC). In response to the feedback from the various societies, CMS responded by saying,

We (CMS) recognize that many commenters, including the AMA, the RUC, and specialties that participate as members in those committees, have stated intentions of the AMA and the CPT Editorial Panel to revisit coding for E/M office/outpatient services in the immediate future. We note that the 2-year delay in implementation will provide the opportunity for us to respond to the work done by the AMA and the CPT Editorial Panel, as well as other stakeholders. We will consider any changes that are made to CPT coding for E/M services, and recommendations regarding appropriate valuation of new or revised codes.”

The Chairs of the CPT Editorial Panel and American Medical Association (AMA)/ Specialty Society RVS Update Committee (RUC) created the CPT/RUC Workgroup on E/M Coding in order to solicit feedback on the best coding structure to decrease the burden of documentation while ensuring appropriate valuation. A code change application was submitted through the appropriate channels for consideration by the CPT Editorial Panel at the February 2019 meeting and passed.

In the new proposed CPT E/M code structure, it was determined that code level selection might be based either solely on medical decision making or total time on the date of the encounter. The extent of history and physical examination will no longer be an element in the code level selection of office visits. The new scenario deletes code

99201, as that code was not commonly used by physicians, but preserves codes 99202-99295 and 99211-99215 and creates a new prolonged visit add-on code 99XXX. The most important aspect of these new codes is that it represented the work product of a representative body from the AMA and national specialty societies. Fifty-two specialty societies have participated in the RUC surveys, among them were 1,000 randomly selected neurosurgeons. The survey asked questions about physician work and practice expense. At this writing, the surveys are completed, and data from those surveys were presented at the April 2019 RUC Meeting.

How will the new E/M coding scheme affect my practice?

The logical question we should ask is how these changes will affect our practice. The ultimate impact of the changes to E/M coding is difficult to assess. In the proposed 2019 Medicare Physician Fee Schedule (MPFS), CMS stated that the E/M changes would be minimal or possibly slightly positive for neurosurgery. However, in the 2019 Medicare Physician Fee Schedule (MPFS) final rule, CMS estimated that if they had implemented their E/M coding and reimbursement changes in 2019 rather than putting them off until 2021, the impact on neurosurgery would have been -1 percent in CY 2019. Further modeling by outside consultants estimates that the impact of these changes could result in an overall cut in overall Medicare payments to neurosurgeons by as much as 4 to 6 percent.

The impact of the CPT-approved/RUC-valued new codes will not be knowable until after the RUC meeting in April 2019 and will not be public until CMS publishes the information. It is important to recognize that even though a neurosurgical practice generates most of its revenue from surgical volume, E/M coding may represent upwards of 25 percent of the revenue.

Timeline: When will the new E/M coding scheme take effect?

There is little doubt that the new E/M office visit codes will be implemented by Jan. 1, 2021, in one form or another. Following the RUC action, CMS may provide some indication of the agency's views when it releases the 2020 MPFS proposed rule sometime this summer. If the CMS states that

it is inclined to accept the AMA CPT-passed/RUC-valued codes and scuttle their original plan to collapse the codes, organized medicine would have another opportunity to provide public comments on a new plan.

The CNS and the AANS have been adamant in our insistence that should the E/M office visit values be increased, the E/M work built into the 10- and 90-day global surgical periods should be increased accordingly. Ideally, CMS would finalize the AMA CPT/RUC passed plan in the 2020 MPFS final rule released in November 2019. An implementation of Jan.1, 2021, will provide specialties a year to prepare and educate their members for the changes. Once CMS publishes comments about the RUC submission, it will be public information. The hope is that the new coding scheme will be the product of a representative body of physicians not a mandate from a government agency outside of the valuation process that has been established by organized medicine.

What should I do to prepare my practice?

It is important that neurosurgeons be aware of the impending changes for E/M coding. The coding software in the electronic medical record will need to be updated to include the new coding scheme, and ancillary coding staff and neurosurgeons will need to be trained on the new codes. When the new E/M office visit coding scheme is finalized, the Washington Office will provide educational information. Also, the AANS coding courses and CNS coding webinars will cover that material in great depth. <

PLEASE NOTE, THIS IS PART ONE OF A PLANNED TWO ARTICLE SERIES ON THE SUBJECT OF THE NEW E/M OFFICE VISIT CODES. A SECOND ARTICLE IS PLANNED TO PROVIDE ADDITIONAL GUIDANCE AND EDUCATION TO MEMBERS WHEN MORE INFORMATION IS MADE AVAILABLE BY CMS.

INSIDE THE CNS



Washington Committee Report



Katie O. Orrico

Washington Committee Sets 2019 Legislative and Regulatory Agenda

Based on a survey of the CNS and AANS members, the Washington Committee has developed the following legislative and regulatory agenda for 2019:

- **Protect patients' timely access to care** by reforming utilization review practices, such as prior authorization, step-therapy and Medicare's appropriate use criteria program for advanced diagnostic imaging.
- **Fix the broken medical liability system** by adopting proven reforms that are in place in California and Texas.
- **Improve the health care delivery system**, including maintaining existing insurance market reforms and advancing solutions that will lower costs and expand choice, including out-of-network options, with appropriate patient protections for unanticipated medical bills.
- **Support quality resident training and education** by increasing the number of Medicare-funded residency positions and preserving the ability of surgeons to maximize education and training opportunities within the profession's current regulatory structures.
- **Alleviate the burdens of electronic health records**, including promoting interoperability, reducing unnecessary data entry and improving the functionality of EHR systems to enhance, not hinder, the delivery of medical care.
- **Continue progress with medical innovation** by repealing the medical device tax and implementing the [21st Century Cures Act](#).
- **End the opioid epidemic** by implementing the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act ([SUPPORT Act](#)).
- **Champion fair reimbursement** by maintaining a viable fee-for-service option in Medicare and by empowering patients and physicians to privately contract fee arrangements. Additionally, Medicare must maintain the 10- and 90-day global surgery payment package and minimize the burdens associated with the global surgery code data collection initiative.

CNS and AANS Urge Congress to Adopt Principles in Surprise Medical Bills Legislation

On Feb. 7, the CNS and AANS joined more than 100 state and national medical societies in sending Congress a [letter](#) outlining organized medicine's core principles on so-called "surprise medical bills." Given growing concern over the practice of unanticipated medical bills — largely driven by narrow insurance networks,

which leaves some patients on the hook with the bill if they receive care from an out-of-network provider — Congress and the Trump Administration are considering legislation and/or regulations to address this problem. The principles include:

- Insurer accountability to ensure network adequacy;
- Limits on patient responsibility to in-network cost-sharing for unanticipated care;
- Transparency about out-of-network providers and costs for scheduled care;
- Payments based on charge data from an independent claims database (e.g., [FAIR Health](#));
- Alternative dispute resolution, such as baseball-style arbitration; and
- Keep patients out of the middle.

Recently, there has been a flurry of activity on this topic, including:

- **Senator Cassidy Legislation Introduced.** On May 15, a bipartisan group of senators, led by Sen. Bill Cassidy (R-LA), [introduced S. 1531](#), the [Stopping the Outrageous Practice \(STOP\) Surprise Medical Bills Act](#). The goal of this legislation to protect patients from surprise medical bills and establish a process for physicians and

health plans to resolve billing disputes. In response to the draft legislation, the CNS and AANS sent the sponsors a [letter](#) pointing out that which we like and dislike about the bill and pledging to continue to work collaboratively with Congress as legislation on this topic is debated.

- **Physician-Sponsored Congressional Briefing.** On May 16, the CNS and AANS joined the American College of Surgeons (ACS) and several other physician organizations in cohosting a Congressional briefing titled, “How to Protect Patients from Surprise Medical Bills: The Physicians’ Perspective.” Nearly 100 Congressional staff members and others attended the briefing. Panelists highlighted the physician community’s major concerns with recently proposed legislative solutions, as well as potential ideas for a path forward.
- **Ways and Means Committee Hearing.** On May 21, the House Ways and Means Committee held a [hearing](#) titled, “Protecting Patients from Surprise Medical Bills.” [Click here](#) to watch the hearing.
- **Reps. Ruiz and Roe Release Framework.** On May 23, Reps. **Raul Ruiz**, MD, (D-Calif.) and **Phil Roe**, MD, (R-Tenn.),

among others, [released a detailed outline](#) of legislation to address surprise medical bills. Based on a preview of the summary, the CNS and AANS issued a [press release](#) supporting this legislation.

- **Senate HELP Committee Releases Proposal.** On May 23, leaders of the Senate Health, Education, Labor and Pensions (HELP) Committee [released draft legislation](#) titled the “Lower Health Care Costs Act.” The bill includes provisions to address surprise medical bills, improve transparency and ensure that provider network directories are accurate.
- **Doc Caucus Sends Letter to Administration.** On May 23, the House Doc Caucus sent a [letter](#) to the Administration regarding surprise billing. This letter promotes legislation based on the New York law, and takes issue with complicated, unproven and unworkable proposals related to a single bundled payment to hospitals for all out-of-network care and network matching.

Congress Introduces Bills to Fund Additional Residency Training Slots

Legislation expanding Medicare funding for additional residency training slots has been

introduced in Congress. Sponsored by Sens. Robert Menendez (D-N.J.), John Boozman (R-Ark.) and Charles Schumer (D-N.Y.) in the Senate, as well as Reps. Terri Sewell (D-Ala.) and John Katko (R-N.Y.) in the House, the “Resident Physician Shortage Reduction Act” (S. 348 / H.R. 1763) would:

- Increase the number of Medicare-supported GME residency slots by 15,000 over the next five years;
- Direct one-half of the newly available positions to training in shortage specialties;
- Specify priorities for distributing the new slots (e.g., states with new medical schools); and
- Study strategies to increase the diversity of the health professional workforce.

The CNS and AANS endorsed the bills, sending letters to both [House](#) and [Senate](#) sponsors.

Neurosurgery Sends Letters of Support for H.R. 594/S. 864, Ellie’s Law

On Jan. 16, Rep. **Yvette Clarke** (D-N.Y.) introduced [H.R. 594](#), Ellie’s Law. On March 25, **Sen. Richard Blumenthal** (D-Conn.) also introduced a senate companion bill, [S. 864](#). Both bills would provide \$25 million over five years for the National Institute of Neurological Disorders and Stroke ([NINDS](#)) to support brain aneurysm research. Following the introduction of both bills, the CNS and AANS sent letters of support for both the [House](#) and [Senate](#) legislation.

Neurosurgery Objects to Washington State Plan not to Cover SI Joint Fusion

On Jan. 18, the [Washington State HTA Health Technology Clinical Committee](#) (HTCC) voted not to cover SI Joint Fusion procedures. **David W. Polly, Jr., MD**, made a presentation at the meeting on behalf of the American Academy of Orthopaedic Surgeons (AAOS), AANS, CNS, International

Society for the Advancement of Spine Surgery (ISASS) and the Washington State Association of Neurological Surgeons (WSANS), supporting coverage for SI Joint Fusion for appropriately selected patients. On Nov. 9, the AANS, CNS, Section on Disorders of the Spine and Peripheral Nerves (DSPN), AAOS, North American Spine Society (NASS) and the WSANS had sent a [letter](#) to the Washington State Health Care Authority (HCA) Health Technology Assessment (HTA) program regarding a draft evidence [report](#) for Sacroiliac (SI) Joint Fusion. ISASS sent their own more detailed letter, but was generally in agreement with the multispecialty letter. The negative coverage decision is a disappointment, as the evidence report prepared for the meeting was considered reasonable. On Feb. 20, organized neurosurgery sent a [letter](#) to object and request a reconsideration. More information on the Washington State HCA HTA program consideration of SI Joint Fusion is available [here](#).

Anthem Reverses Course on Minimally Invasive Ablative Procedures for Epilepsy

Based on comments provided by the CNS and AANS, Anthem reversed course, finding that the treatment of medically refractory epilepsy using stereotactic laser techniques (MRI-guided laser interstitial thermal ablation [MRIGLITT]), including stereotactic laser amygdalohippocampotomy (SLAH) is considered medically necessary when the following criteria are met:

- Documented disabling seizures, despite the use of two or more tolerated antiepileptic drug regimens; and
- Documented presence of two or fewer well-delineated epileptogenic foci accessible by laser.

The use of stereotactic radiofrequency thermocoagulation (RF-TC) in the treatment of hypothalamic hamartomas is considered medically necessary.

Neurosurgery Joins Gun Violence Research and Prevention Efforts

On Feb. 21 the CNS and AANS joined 164 national, state and local medical, public health and research organizations in sending letters to [House](#) and [Senate](#) appropriation leaders urging them to provide \$50 million in funding for the Centers for Disease Control and Prevention ([CDC](#)) to conduct public health research into firearm morbidity and mortality prevention.

Additionally, issued by the [American College of Surgeons](#) (ACS) on Feb. 21, the CNS and AANS, along with 43 medical and injury prevention organizations and the American Bar Association, supported a [press release](#) about the first-ever Medical Summit on Firearm Injury Prevention. Hosted by the ACS Committee on Trauma (COT), the Summit brought together national health care and legal leaders who have a compelling interest in reducing deaths, injuries and disabilities from firearms. Shelly D. Timmons, MD, PhD, FAANS, participated on behalf of neurosurgery. ■

For more information on these or other health policy issues, please contact Katie O. Orrico, director of the Washington Office at korrico@neurosurgery.org.

IMAGES IN NEUROSURGERY

17-Year-Old Female with Congenital Scoliosis and Type I Diastematomyelia

The patient is a 17-year-old female with congenital deformity who underwent at T8-T12 anterior fusion elsewhere at the age of six. The patient presents now with mild back pain and a predominantly cosmetic concern. Her neurological exam was positive only for positive sagittal imbalance and left-sided coronal offset, with the left leg longer than the right. Imaging revealed multiple congenital abnormalities including C6-7 Klippel-Feil anomaly, butterfly vertebrae of T12, L1, L2, L3 and S1 with fused left hemivertebrae of L1 and L2. The patient had type 1 diastematomyelia with a bony septum at L2-4, tethering the cord. The operative plan devised was to first detether the cord, resect the osseous septum and reconstruct the two hemisacs, reserving the correction of the kyphoscoliotic deformity for a second stage. Surgery was conducted successfully and the patient returned to her home country to re-evaluate her cosmetic concerns after recovery. ■

Submitted by:

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Figure 1

Scoliosis x-rays lateral (A) and AP (B) projections. (C) Coronal CT with axial sections (D-F) showing patients previous thoracic fusion at T8-12 and lumbar butterfly and hemivertebrae. (C-F) highlighting the bony septum present from L2-4 as well as the abnormal anatomy above and below this level.

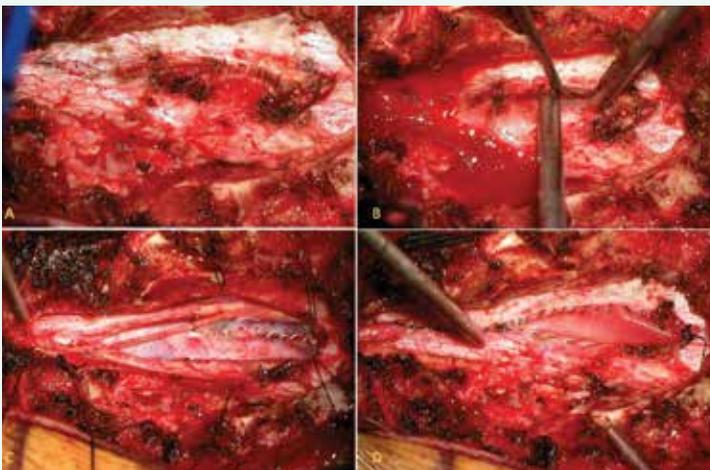


Figure 2

Intraoperative photos (rostral on the left in all photos) showing (A) initial extradural exposure and bony septum, (B) dissection of dura away from bony septum, (C) intradural exposure after repair of ventral dural defect showing two separate spinal cords and cauda equina roots, (D) final dorsal dural repair with patch graft.

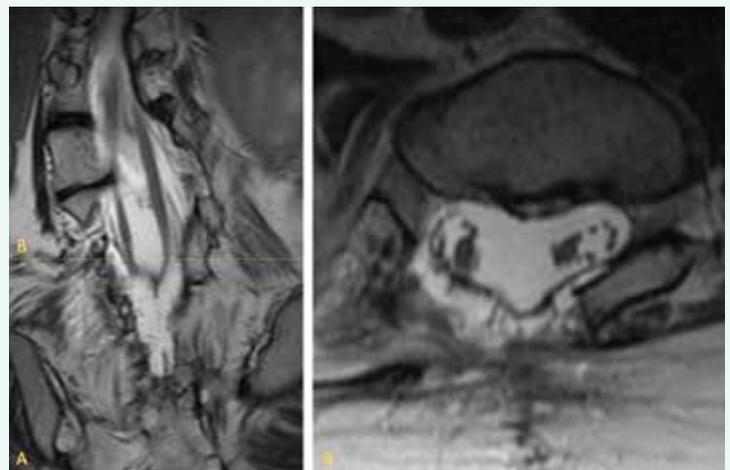


Figure 3

Post-operative T2 MRI coronal (A) and axial (B) section showing removal of the bony septum and joining of the two cords in a single dural sac.

WHAT'S **NEW** IN 2019

There's so much fresh content coming to the 2019 CNS Annual Meeting,
and we think you'll like what we have to offer!

