IN THE SPOTLIGHT
Neurosurgery and the Media

6
STRADDLING THE FENCE: LIFE IN NEUROSURGERY AND THE MEDIA
SANJAY GUPTA, MD

10
MEDIA EYE ON TRAUMATIC BRAIN INJURY
JAMSHID GHAJAR, MD, PHD
Let Your Voice Be Heard at the 2009 CNS Annual Meeting.

Consensus Sessions offer attendees a chance to contribute to the advancement of organized neurosurgery by weighing in on critical socioeconomic issues and public policy topics. Available Tuesday and Wednesday, you can participate in one or all!

**Consensus Session I:**
*The Role of Mid-level Health Care Providers in Modern Neurosurgery Practice.*
*Moderator: Edward C. Benzel*

**Consensus Session II:**
*Individual Practice Options for Insurance Plan Participation.*
*Moderators: Joshua M. Rosenow, Richard W. Byrne*

**Consensus Session III:**
*Regionalizing Emergency Cerebrovascular Care.*
*Moderators: Jamie Sue Ullman, Henry H. Woo*

**Consensus Session IV:**
*Defining Quality Measures in Neurosurgery.*
*Moderator: Robert Weil*

These unique workshops allow attendees the opportunity to truly be a part of the CNS Annual Meeting and the future of neurosurgery!

**Registration Now Open at www.cns.org!**
Join us in New Orleans, Louisiana for the 2009 CNS Annual Meeting, as we explore our theme A Culture of Excellence.

This ever-popular Wednesday afternoon session brings neurosurgical masters together as they demonstrate six microsurgical principles live on the GSS stage. Join us for this innovative session which features cadaveric demonstrations using state-of-the-art 3D imaging technology, followed by cutting edge videos.

**Wednesday, October 28**
**2:30 – 5:30 PM**

**Live 3-D Cadaveric Demonstration**
Operative Techniques with the Masters.

Cranio-orbital-zygomatic Approach for a Parasellar Meningioma
Ossama Al-Mefty

Transsylvian and Pretemporal Approach for a Wide Neck Basilar Apex Aneurysm
Daniel L. Barrow

Far Lateral Approach for a Complex Vertebral Artery-PICA Aneurysm
H. Hunt Batjer

Percutaneous Rhizotomy for Trigeminal Neuralgia
Kim J. Burchiel

Endoscopic Extended Transsphenoidal Approach for a Pituitary Adenoma
William T. Couldwell

Petrosal Approach for a Brainstem Cavernous Malformation
Laligam N. Sekhar

The Congress of Neurological Surgeons is Pleased to Announce a Joint Meeting with the Neurological Society of India (NSI) and the American Association of South Asian Neurosurgeons (AASAN)!

For More Information
info@1cns.org
www.cns.org
Toll Free: 877 517 1CNS
Phone: 847 240 2500
EDITORS’ NOTE

“This instrument can teach; it can illuminate; yes, and it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends.” These words, spoken by the renowned journalist, Edward R. Murrow, can easily be applied to the media as a whole. Somehow, the media, driven by human beings, almost takes on its own singular identity keeping a watchful eye on all that happens around it. The media seems poised and ready to pounce at a moment’s notice, exerting its influence on public perception and driving the behavior of its victims in such ways as to escape or embrace further scrutiny.

It is difficult to measure the impact of the media’s eye on public opinion and certainly, Neurosurgery is one small facet of life to which the majority of the public is not fully attuned. Recently, some issues have come to public attention such as industry relationships and conflicts of interest, medical liability reform, medicare cuts, celebrity head injuries, and neurosurgeon candidates for Surgeon General. But Mr. Morrow had it right: the media is only as powerful as its human operators, and can be used to educate and inspire if we choose. As neurosurgeons, we can inform the public about break-through treatments for brain cancer, instruct them on the virtues of preventative measures such as helmet use during at-risk recreational activities, apprise them of innovative technologies to treat spinal disorders, and inspire young people to great achievement.

This “CNSQ” issue highlights the various aspect of Neurosurgery’s involvement with the media. Dr. Sanjay Gupta is well known as a medical correspondent for the Cable News Network and is in a unique position to educate. In his article, he tells of how he got started with this seemingly divergent career. Dr. Jamshed Ghajar became well versed in media relations and provides pointers on using the media to bring important issues, such as head injury, to greater public awareness. There is a special feature on Dr. Benjamin S. Carson, Sr., who has used the media to help motivate and assist disadvantaged youths with achieving their dreams. On the lighter side, Dr. Katrina Firlik recounts of how she put her experiences in Neurosurgery into a best-selling book. Dr. J. Nozipo Maraire tells of her journey into the world of literature after publishing an inspirational novel (written during her residency) for which she won significant acclaim. We even explore fictional neurosurgery, which can serve to educate and inspire if done properly. Finally, two insightful opinion pieces discuss the SPORT trial and other negative media attention that serve to mislead the public and exert undue influence on what we, as physicians, do.

If there are negative media influences, it is important to actively counter them with positive messages from our end. Certainly the subjects of our featured articles, though certainly not all-inclusive, are well-illustrated examples. As neurosurgeons, we can use the media to “teach, illuminate and inspire” as long as we maintain our resolve to advance patient care with the highest standards, innovations and research. We invite all readers to make comments or write about their own experiences related to this or any “CNSQ” issue by contacting the editors at info@1cns.org.
CONTENTS

02 Editors’ Note
Jamie S. Ullman and James S. Harrop

04 President’s Message
P. David Adelson

NEUROSURGERY AND THE MEDIA

06 Straddling the Fence: Life in Neurosurgery and the Media
Sanjay Gupta

10 Media Eye on Traumatic Brain Injury
Jamshid Ghajar

12 Contributions Through the Media: A Conversation with Benjamin S. Carson, Sr., MD
Soriaya Motivala

14 Another Day in Neurosurgery: Telling Stories About What We Do
Katrina S. Firlik

16 Writing Zenzele: One Neurosurgeon’s Journey Into the Literary World
J. Nozipo Maraire

18 Neurosurgery and Fiction: A Fantastic Voyage into the World of Brain Surgeons
Jamie S. Ullman

PERSPECTIVES

22 Media and Neurosurgery: The SPORT Study Experience
Daniel K. Resnick

26 How to Counter the Inaccurate Media and Government Stories About Medicine: What One Doctor Can Do
James I. Ausman

WASHINGTON UPDATE AND THE MEDIA

30 Evidence, Appraisal and Advocacy: Chairman’s Address
Daniel K. Resnick

33 CNS Nominating Committee
Douglas Kondziolka

34 Conflict of Interest Disclosures: Report from the CNS Ad-hoc Committee on Best Practices and Ethical Standards
Alan M. Scarrow

36 Washington Update and the AANS/CNS 2009 Legislative Agenda
Katie O. Orrico

41 CNS Committee for Long-Range Planning and Development of NEUROSURGERY®
P. David Adelson and Anthony L. Asher

PAST PRESIDENTS’ SECTION

42 Teleducation: New Paradigms For Procedural Learning in Neurosurgery
Marc R. Mayberg

THE CNSQ BACK PAGE

Images in Neurosurgery
This issue of the CNSQ focuses on the relationship between different aspects of medicine/neurosurgery and the media. It is clear that the media can have a significant impact on our profession and specialty, providing the public with both positive and negative perspectives on any given issue. Whether the coverage involves the reporting of scientific results, medical liability issues, or a day in a life of a neurosurgeon, the understanding and viewpoints presented can clearly shift public opinion for or against any particular issue, and at times put our profession in a light that we may not see ourselves. This can be due to reports of negative incidents involving physicians and healthcare or, unfortunately, to misinformation. There are now so many media outlets — print journalism, network and cable news, and the internet — that we have seen an amazing explosion of information and content from reliable as well as unreliable sources, all of which impact our everyday lives.

In the most recent presidential election, the impact of media coverage had a major role in the outcomes of national and statewide elections that has put our society on the path of further government oversight and regulation in many previously “private” industries, including healthcare, banking and automotive. Healthcare and medicine have always been a focus of media attention, often, unfortunately, to highlight the negative aspects of practice and oversight. Neurosurgery, as a small subspecialty of medicine, has often been at a disadvantage in getting out its message about the principles we believe, those by which we practice, and the perspective that we have on diverse issues which impact patient care, such as patient access, medical liability and scientific discovery.

Neurosurgeons take pride in our history and the beauty of our specialty. We hold in high esteem elements including dedication, scientific discovery, creativity and innovation, hallmarks dating back to our founders and historical giants like Cushing, Horsley and Dandy amongst others. These individuals benefited from a time when there was a clear positive relationship between the media and those dedicated to the health and welfare of their patients, even during pioneering times when mortality and complications were high. Contrast that to today’s interaction when it is much more common to find negative articles and exposés of unindicated surgery, Medicare fraud, surgery mills, the practice of medicine contrary to evidence-based proto-
cols, large kickbacks under the guise of “consulting contracts” and the “killing fields” in today’s hospitals. Often the facts are obscured behind journalistic license so that it is difficult for the public to make a reasoned decision or have an understanding of the complexity of the problem. The public is left with the impression that today’s practicing doctor only cares about a lifestyle of the rich and famous, including excessive reimbursement, freedom from liability, freedom from emergency coverage and having a license to do whatever he or she wants whether it is evidence-based or not.

This is not to say that we as physicians do not carry some of the blame for this perception, due to some who may have crossed the line. More often than not, the physician or the neurosurgeon is not only tainted by the incidents of these individuals, but when we look in the mirror, can we indeed see ourselves as blameless? Do we truly provide the optimal care that is evidence-based and available? Do we follow meticulously, as did our predecessors, our outcomes and detail for others’ optimal approach? Do we make ourselves available at all times for emergencies for adults and children? These are some of the hard questions we need to ask before expecting that we will gain any sympathy from insurers, legislators, the public and, for that matter, the media.

Because of the size of our specialty, some would assume that we have a potentially limited impact at a national level, whether in the legislative process, national policy or access to the media. While this may be true, some have likened us to the “canary in the coal mine.” The problems we face today will further impact the future of healthcare as a whole. Despite the problems of the recent past, because of our history, our pride, the uniqueness of our specialty, and our special relationship with our patients, we have an important understanding and, therefore, an important message about the problems we face as practitioners. We need to strive to get this message out so we can continue to optimize patient access, deliver the best care, and be a part of the process for improvements. The media is an effective resource for educating the public and other health care providers, and we are committed to better understanding the needs of our journalism colleagues and how to work effectively with them.
A few years ago, I would never have imagined my life as it is now. As a physician/reporter for an international news network and a neurosurgeon for a busy trauma hospital, I am probably busier now than most mid-level residents. And, with three children under the age of 4 in the house, including a newborn, I am on-call every night! There are two questions I am asked more than any other: how did I get tossed into this crazy lifestyle and which of these two professions do I like better?

Well, the second question is somewhat like being asked which of your children you prefer — impossible to answer. Truth is, I like both of my chosen professions, but what may surprise you, as it surprised me, is that having two somewhat distinct roles has made me appreciate my first love of neurosurgery that much more. Straddling the fence between medicine and media has made me look at medicine with a renewed sense of appreciation.

I was never formally trained as a journalist and I had not appeared in one frame of a broadcast until the first time I appeared on television. Like many of you, during training I busied myself spending time in the operating room, learning about the latest protocol for brain tumor therapy, engaging in the coiling vs. clipping debate and being schooled in the ramifications of degenerative spine disease through a fully scheduled clinic. Almost simultaneously, though, side discussions included topics such as the future of medicine broken down into the preservation of federal entitlements, tort reform and subspecialty reimbursements. There was no question that doctors were concerned about their ability to take the very best care of patients, and how that intention was becoming increasingly compromised.

I spent a lot of time reading (voraciously) and writing (not very well) on these topics. At first I wrote for small newspapers, always beg-
I am more convinced than ever, that doctors and other healthcare professionals need to be more engaged as our system begins the largest reform it has seen in over 40 years.

During my fifth year of residency, I decided to apply for a White House fellowship. This was, typically, a mid-career fellowship providing a chance for exposure to the government’s Executive branch. I still remember my conversation with Dr. Julian Hoff, my chairman at the University of Michigan, regarding this fellowship. This remarkable man took a chance on me, and allowed me to apply. I was accepted and spent a year working in the office of First Lady Hillary Clinton from 1997-1998.

For many, the White House Fellow experience is a transformative one, and I was no exception. Working at that level of government and getting an inside look at how policy is debated, crafted and then proposed was meaningful, not just because of its applications to healthcare, but to the entire arena of communications. Helping write speeches for the First Lady allowed me to understand how messages are interpreted and what possible
action and change can be expected as a result of those messages. I recognized that I was learning a brand new skill set that would always stay with me. It was also during my White House Fellow year that I met a former fellow named Tom Johnson. He was the Chief Executive Officer of the Cable News Network (CNN), and he happened to be looking to build a medical unit.

At first I wasn’t sold on the idea of a career in media. I returned from Washington to Michigan, completed my residency and started a practice. In the summer of 2001, however, Dr. Daniel Barrow, Chairman of Neurosurgery at Emory, offered me a position as a staff neurosurgeon and CNN offered me a job as a reporter. With the reckless abandon of a 31-year-old, I decided to do it. To be sure, I didn’t know if the job(s) would last 8 weeks or 8 years, and it was a somewhat risky move for me, leaving my family and the security of a job and place I knew and loved.

When I arrived at CNN with one suit and two ties, I thought I would mainly be doing health policy reporting, given it was a presidential transition year. Then 9/11 happened, and the world changed. I found myself in New York City as a reporter and a doctor, telling stories of people who neither lived nor died, but were somehow caught in between. Reporting from hospitals and burn units, I found it to be more familiar than I expected — a mixing of my worlds. And there were other examples where the distinctions between medicine and media seemed to vanish, such as when I was in Central Africa reporting on the global health calamity following the genocide in Darfur or the medical consequences of a tsunami.

While in Iraq as an embedded reporter, I was asked on several occasions by the Marines to remove my reporter’s cap and exchange it for a surgeon’s cap. I was honored to do so and was very poignantly reminded of my love for our profession and my respect for what we neurosurgeons are allowed to do and are able to accomplish. As I said, sometimes it takes stepping outside your primary field to remind you of what made it so attractive in the first place.

I learned a few things along the way. Both of these jobs require endless homework. I read all the time, so that I can be not just a reciter of facts but a thoughtful transmitter of knowledge. Neither job is particularly glamorous. On the road, we sleep in refugee camps and can go days without a hot meal. I live in a house similar to the one I had as a resident, and we still have the same car from so many years ago. Most importantly, I learned it is worth reminding yourself every day why you get up and go to work. You might just like the answer.

Sanjay Gupta, MD is Associate Chief of Neurosurgery at Grady Memorial Hospital and Assistant Professor of Neurosurgery at Emory University Hospital. He is the Chief Medical Correspondent for CNN and a reporter for the CBS Evening News and 60 Minutes. He writes a column in TIME magazine and has written a New York Times best selling book, called Chasing Life. His next book, Cheating Death, is expected out this fall. See more of Dr. Gupta’s work by visiting www.cnnhealth.com.
E
ducating the public about Traumatic Brain Injury (TBI) requires an attentive audience, a respected and professional media organization and a spokesperson who can make medical science understandable to the public. There are few windows in time when these opportunities arise; so when they do, one must be poised and informed. The following two cases, a recent one that started as a concussion and ended in death and another ten years ago involving the Central Park coma victim, are both examples of these “perfect storms.”

Natasha Richardson – Concussion
The Natasha Richardson case captured national attention and was headline news for a week, pushing the financial bailout to second place. Several factors that attract public attention were involved: a famous person, an unusual occurrence and death. How could someone bump her head, without any signs of impact, be normal for a period of time, and then suddenly die after a common recreational activity?

The Public Needs to Question, to be Attentive.
TBI and traumatic injury in general are very difficult areas about which to educate the public. Most people think that an accident or any trauma is ill-fated and there is little you can do to change the outcome after an injury. A common question I am asked is “Do cell phones cause brain tumors?” and I reply, “No, they cause car crashes” at which the person shrugs and shows no concern. The Richardson case called that belief into question in several ways and allowed experts to educate a receptive public. Neurosurgeons were called in across the country to explain secondary brain injury and state that early intervention in TBI can make a difference between survival and death.

A TV Interview in Itself is Not Sufficient.
I went on Good Morning America with Diane Sawyer three times and was interviewed by other news organizations, as were many of my neurosurgical colleagues. While television interviews are high profile opportunities and offer immediate gratification for the public (and one’s friends and family), they rarely are truly educational. The public attention span is short and the message has to be fairly simple. A couple of minutes on national television need to be honed to a one or two point message. Today, we have web links with in-depth Question and Answer formats that extend the television interview into a truly educational piece. I followed up a Q and A web format with ABC and CNN for a week. Neurosurgical colleagues delivered a consistent message thorough the press to the public, reinforcing the ideas.

The Central Park Victim – Coma
Ten years ago, a young woman walking in New York City’s Central Park in the afternoon was savagely assaulted, sustaining a severe TBI with frontal and temporal lobe hemorrhagic contusions. She was brought to Cornell-New York Hospital immediately and I evacuated a frontal hemorrhagic contusion, placed a ventriculostomy and left the bone plate out. Her intracranial pressure was controlled; however, she required another craniotomy a few days later for an enlarging temporal lobe hemorrhagic contusion. She made an excellent recovery and is now married with children.

Link the Message to Other Organizations and Web Sites.
The Brain Trauma Foundation web site (www.braintrauma.org) evolved to meet the demands of the public during the Richardson case. A trauma center directory was put on the web site to indicate centers that treat severe TBI. Also timely were the recent Centers for Disease Control concussion guidelines for emergency physicians that indicate which patients are at risk for intracranial pathology and subsequent neurosurgical intervention. These symptoms—loss of consciousness, seizures, severe headache, lethargy or vomiting—became the danger signs that the public was instructed to look for in someone sustaining a TBI.
High-profile Cases are Usually Not Celebrities.
This might have proven to be just another severe TBI case, except for the fact that the victim was unknown and no one came forward in the first five days to identify her. This circumstance captured the public attention; how could someone be assaulted in the middle of the day in Central Park and why hadn’t anyone noticed she was missing? Then New York City mayor, Rudolph Guiliani came to see the patient every day and there was a huge deluge of media coverage. I was on national and local television every day giving updates on her condition. On the way to work, I would stop by Fox news to give the morning update. It was a great opportunity to educate the public about coma and the impact of the TBI evidence-based guidelines.

Pick a Weekly Magazine Over a Daily Newspaper.
Shortly after this patient became responsive in the hospital, I was asked by both the New York Times and The New Yorker to do an exclusive story. The family gave their consent and left the choice up to me (they had been on vacation at the time of the assault and realized through the media attention that the patient was their daughter). It was a key decision that led to many other opportunities to educate the public about coma and the impact of the TBI evidence-based guidelines.

A Great Writer and a Great Philanthropist Enhance Awareness.
The New Yorker article was an investigative, scientific inquiry about coma and the inequality of care. It was in a style that Malcolm Gladwell repeated in his subsequent books, such as Tipping Point, that are now bestsellers and also part of the public lexicon. We did several appearances together including The Charlie Rose Show. George Soros invited me to his house to discuss the article, which led to a five year TBI Guidelines implementation program in Eastern Europe. He gave enormous support to the Brain Trauma Foundation’s mission and joined the Board of Directors.

A Well-produced Film Documentary Lives Long.
NOVA, the Public Broadcasting System television science documentary, called after The New Yorker article was published and asked to do a full-length, real time documentary on a TBI patient from the emergency room all the way to final outcome — a film that could never be done today given patient confidentiality issues. The crew was stationed at Jamaica and New York hospitals waiting for a TBI patient in coma. An eight-year-old boy hit by a car came into Jamaica hospital in a coma and the family agreed to the filming. I placed a ventriculostomy and the child was then transferred to New York hospital for ICU care. It was a nerve-racking experience to be constantly under the camera and even more so when the boy was not following commands after two weeks of ICP treatment (he eventually made an excellent recovery). The film called Coma received several documentary awards and was a case example of NOVA’s motto, “making science understandable to the public.” Last year I did another documentary with NOVA Science Now on an ultra-fast eye tracking diagnostic device for concussion.

In summary, the above pointers will, I hope, provide some guidance for interacting with the media. Integrity and intelligence in media reporting and sustaining the message are key factors in educating the public.
There are few in the world of American Neurosurgery that have not come to know of Dr. Benjamin Carson in recent years. A gifted pediatric neurosurgeon, he became the chair of Pediatric Neurosurgery at Johns Hopkins at thirty-three years old. In 1997, he was widely covered in the media for leading a large team of surgeons in the first successful craniophagus twins separation in South Africa. His ability to see the world in three-dimensions, and solve complex problems without breaking a sweat has become legendary amongst his residents and all those who have had the privilege of operating with him. Lately, however, he has been defining himself more and more as a gifted public speaker, author, mentor, philanthropist and beacon for change in these turbulent times. Earlier this year Dr. Carson became a household name when Academy Award-winning actor Cuba Gooding, Jr. portrayed him in television adaptation of his best-selling autobiography *Gifted Hands.*

I recently had the opportunity to speak with Dr. Carson regarding his career and multiple distinguished accomplishments, along with obtaining advice for the next generation of neurosurgeons. He is a soft-spoken, eloquent man with razor-sharp intellect and it did not take me very long to start seeing the world from his perspective.

Dr. Carson’s story certainly started out like many others in this country. The son of an under-educated, impoverished, single mother, he had every obstacle to success in his way. However, through his own hard work and his mother’s unwavering support, his love of learning was allowed to flourish to such an extent that he was able to graduate from Yale and go on to medical school at the University of Michigan.

As a medical student Dr. Carson planned to be a psychiatrist; however, he found himself fascinated by neurosurgery lectures. After a long hard look at his skills, he knew that neurosurgery was the career for him. “I had good hand-eye coordination, the ability to think in three-dimensions, and was very detail oriented.” As far as his decision to sub-specialize in pediatric neurosurgery, that came from the children themselves. “With kids, what you see is what you get, there is no second agenda. Furthermore with just a few hours of surgery you can impact the next twenty, thirty, forty years of their lives.”

Dr. Carson’s advocacy for youth does not stop at the operating room door. Through his public speaking and his Carson Scholars Fund,
he has been motivating young people all across America to realize their academic potential. This theme of mentorship is pervasive throughout his books and now in the movie about his life. When asked how important having a mentor is for a young neurosurgeon he quipped, “...more important than having a mentor is being a mentor.” Achieving a neurosurgery residency puts one in a very small class of the educated/academic elite, “it would be a crime to keep all that education within our small group.” Furthermore, “as you mentor others, it becomes easy to see who might fit the qualities needed in your mentor... Being a positive influence in your sphere as well as outside of it also allows you to maintain perspective.” He is always reminded that it is a privilege to treat the people who come to your clinic. It is a sacred trust in which someone “puts their life in your hands and trusts you to improve on that life.”

The idea of giving of one’s self is something Dr. Carson speaks passionately about and in fact, when asked if he had any advice for those aspiring to or newly embarking upon a career in neurosurgery, he quickly stated without a moment’s hesitation, “Get involved! Get involved in things outside of your laboratory, operating room or clinic.... You have a lot to contribute.”

Indeed Dr. Carson doesn’t just vehemently espouse this idea of making a contribution, he actively lives it. In addition to being heavily involved with his Carson Scholars Fund which is dedicated to “cultivating future leaders who are not only intellectually talented but socially conscious” by providing scholarships to young people, he sits on the boards of many public and private institutions. His work has not only been to strengthen the education of America’s youth, but to also improve public policy concerning the health care system. His latest endeavor is as a part of the Physician’s Capital Group. This small group of dedicated doctors is looking at insurance company reimbursements for physicians. On the surface, this may not seem as altruistic as some of his past endeavors, however as he notes, “when the quality of life becomes bad for us [physicians], it becomes bad for our patients.”

It is easy to see why Dr. Carson has been the recipient of so many accolades, including the Presidential Medal of Freedom. It is not surprising that Hollywood came calling to bring his story to the screen. Though most people would jump at the chance to see their name in lights, as a practicing neurosurgeon, he was definitely reticent about the possible “over the top” tone that can be often seen in movies today. Initially, he just couldn’t see how a dynamic and exuberant guy like Cuba Gooding Jr. was going to play a mild-mannered person like himself. After meeting with the actor and the producers, he felt confident that they would stay true to his story. Gifted Hands: The Ben Carson Story aired earlier this year to rave reviews. As one critic so succinctly put it, “it’s the perfect movie for a country challenged by its new president to do better”.

The story of his life has been in the making by Hollywood for 20 years after the publication of his ground-breaking autobiography, and hardly does all of his accomplishments justice. However, a whole new generation has been inspired by his story and that is Dr. Carson’s ultimate goal. When asked what he will do when he retires from surgery, it is clear that he has no plans to slow down. Right now his Carson Scholars Fund is in 34 states and has given out over 3000 scholarships nationwide. This may seem like a vast achievement to many, but for Dr. Carson, he is not going to rest until the foundation is in every state and school board nationwide. It is his goal that every child with a curiosity and a commitment to knowledge be able to have the education they so richly deserve.

Dr. Carson’s hopes for his legacy are simple and direct, he wishes not to be seen as a “Master Healer” or as an unwavering philanthropist, but, simply, as “someone who encouraged people to use the incredible God-given gift of their brain.”
Like many neurosurgery residents, I made a habit of carrying 3x5 cards in the top pocket of my white coat. On occasion, I’d jot down a few notes to myself about an interesting patient, a peculiar comment overheard in the ICU, or a clever joke circulating among the residents. Every few weeks, I would collect the cards and enter the notes into a journal on my laptop. Although the entries were usually brief, I found that it didn’t take much — “former engineer”...“head injury”...“tombstone sandblaster” — to bring back an entire patient and his story.

At the end of seven years I had compiled enough to form the basis of a book, without even knowing it. I started by writing an essay, which ended up in the hands of a literary agent in New York, who actually liked it. She convinced me to write an entire book.

At first I wondered: what interest will the general public have in a bunch of neurosurgery stories from an unknown author? This question was answered during two back-to-back days in New York, where my agent, Alice, and I literally walked from publishing house to publishing house in Midtown, pitching the book proposal to curious editors. Luckily, a short time after that, five of those publishers were interested enough to place bids, resulting in a lively bidding war that punctuated an otherwise routine day in the office with updates from Alice.

I had three motivations in writing my book: to educate, to entertain and to broaden my audience beyond friends and family at the dinner table. On top of that, how could I waste seven years’ worth of valuable stories? During residency, I often realized that as neurosurgeons we are privy to experiences that 99% or more of the population will never share. I felt there was value in bringing this inside world to the outside.

The best books, I think, are the ones that teach and inspire on the sly, through stories. I first discovered Oliver Sacks’ writing in college. His stories about patients and the brain were, in part, what inspired me to take my first course in neuroscience. Although I’m no Oliver Sacks, I did hope to use my stories to a similar end.

I receive emails from readers on a regular basis, and their feedback convinces me that the book was worth the effort:

“This is not the kind of book I would normally read ... I’m a musician ... I haven’t moved a muscle but I feel like I’ve already been through med school & residency ... I learned so many different facts about the brain that I never would have known ..."
... with all the additional questions I had to the contents of your book, it has inspired me to go back to school ...

“I wrote to you once before about how much your book meant to me as I made my decision to have a right amygdalohippocampectomy ... that sure was a lot to say in order to show how much of a difference your book continues to make in my life. I’m not afraid of my brain. That’s a strange sentence, but in the end it’s true.”

“I’m a mechanical engineer from Denver, I found myself entertained while my curiosity was being fed like an IV drip ...”

Although I wrote the book for the general public, I was concerned as to how it would be received by fellow neurosurgeons. To that end, I placed two requests with my editor: I didn’t want the term “brain surgeon” in the subtitle, and I didn’t want a picture of myself on the cover. She gently informed me that I would stick to writing and that Random House would handle marketing.

The title of my book, Another Day in the Frontal Lobe, resulted from a prolonged brainstorming effort, a group effort. In the process, many of my ideas were politely rejected, like my original suggestion, “Brain Matters,” which actually didn’t go to waste as my British publisher used it for their version of the book. I then proposed Another Day in the Hippocampus, to which the CEO of Random House quipped, “too egghead.”

When the New York Times published a review of my book, I was thrilled, save for one minor detail. Although it was a very positive review, in an effort to attract eyes the headline ran: “Maybe brain surgeons aren’t as smart as you thought.” The next day, I noticed that the review had been torn out of the paper and tacked onto the bulletin board in the physician’s lounge of the hospital where I worked. Someone had scrawled next to the headline: “We already knew that.”

I also received a little flack for one addition to my author web site. My editor thought that my book could benefit from some simple line drawings, which I offered to do myself. However, reminiscent of my “hippocampus” title, my drawings of neuroanatomy and surgical instruments were deemed too “strange” and were not included in the book. Rather than isolate them in a drawer, I added them to my web site, and partnered with a service that prints them on things like t-shirts and book bags. Silly, yes, but I thought there might be an egghead or two out there who might want to display the venous sinuses on their person. I am proud to report that, among others, there is now a woman in Texas who owns a Circle of Willis barbecue apron. There is also at least one neurosurgeon who owns a pair of craniotome boxer shorts (you know who you are).

The flack came from a general surgeon reader who said I had gone too far in offering these items. He later sent me a second e-mail, retracting the first. He admitted to jealousy as he had wanted to write a book of his own but was worried that “Another Day in the Colon” wouldn’t sell.

Although I can’t claim any greater expertise than any other neurosurgeon, the simple fact that I wrote a book — rational or not — has led to radio and television interviews including, on occasion, as commentator on CNN and Fox when a brain-related story breaks. And, a television documentary producer is interested in having me host a series about the brain, which may or may not come to fruition, largely depending on the economy. Although this all amounts to more of a hobby than a career, it does represent a fresh and fun challenge.

Unrelated to my book, but in seeking another new challenge, I’ve recently shifted away from my practice in order to focus on medical device innovation, in pulling good ideas out of universities and out of the brains of creative clinicians and scientists. Although seemingly less relevant at first, I’m finding that an ability to communicate well is critical here too, particularly in rallying support around a new device idea.

Neurosurgeons are a rare breed with remarkable insight and experience. I see great potential in broadening our unique influence through the media. And we should tell stories along the way. Stories are what people want to hear.

“The best books, I think, are the ones that teach and inspire on the sly, through stories.”

Katrina S. Firlik, MD, is a neurosurgeon who trained at the University of Pittsburgh and practiced most recently at Greenwich Hospital in Greenwich, Connecticut. She is the author of Another Day in the Frontal Lobe: A Brain Surgeon Exposes Life on the Inside. Her author web site is www.katrinafirlik.com.
Writing Zenzele: One Neurosurgeon’s Journey into the Literary World

Kafka himself would have been proud. In the fall of 1996 my life became as surreal as a page shorn from one of his novels. By day I was a lowly neurosurgical resident at Yale New Haven Hospital, scurrying about the wards in splattered surgical clogs and sagging and faded grey scrubs. I spent endless days on call where some of the finer tenets of hygiene and basic nutrition were discarded, sleep was elusive and its want as intense as any lover’s desire. The endless stream of traumas, the seemingly interminable epilepsy cases, and the nail-biting tension of aneurysm surgeries were my sustenance. On rounds we residents banded together as a fortress against none other than fate itself, we would bring errant labs back to normal, still the seizure, drain the ventriculostomy and when necessary, drill, evacuate, suture, clip and fuse our patients back to life. We were the final sentry. Nobody was to die on our watch — the Gods be damned! We often emerged from the dark underbelly of the operating room days later, dazed, unsure of the time, day or even the season, blinking at the sunlight in disbelief, amazed that life went on beyond the drama of our clinical confines. I was just another comrade-in-arms until my book was published. Suddenly my fellow residents in the trenches regarded me with deep suspicion. They knew, they could just sense, that I was leading a double life.

My novel Zenzele was published by Random House in 1996. It received favorable reviews, and to my astonishment, was reviewed by the New York Times. They even voted it one of the Notable Books of 1996. I was beyond thrilled. I was incredulous. I could not then, and still cannot believe now a decade later, that someone paid me to share my stories.

Zenzele is the gift of wisdom passed from mother to daughter told through a series of vignettes. It tells of Zimbabwe’s struggle for independence, of love, loss and identity. The mother, through her stories, is trying to prepare her daughter for the world she will encounter as she prepares to leave her native country to attend Harvard University. Birthing Zenzele was born of a primal need for wholeness, a sense of self. While I loved the adrenaline of being a neurosurgical resident, I always felt a part of me was missing. Residency demands a slavish commitment. All other interests, commitments, feelings and loves were subservient to “the program”. But I missed the part of me that had started the Walker Percy Society as a medical student, that had lived in Geneva, danced in Zimbabwe, read books, enjoyed debate and traveled the world. That part of me lay hibernating within, awaiting its spring of rebirth.

Zenzele was my spring, each word writ with a joyous surge of delirious freedom of expression. It completed me. So in the sixth hour of assisting Joe Piepmeier on a tough acoustic neuroma, a phrase, a word perhaps a twist to the plot, would come to me like a whisper and I would savor it, cherish it and store it alongside the complex anatomy of the cerebello-pontine angle. The words were alive — they had found their voice and their presence, like the beating of the heart, or the breath as it flows in and out, was a constant reminder that I was alive, I was whole.

With my novel as my key, I entered a different enchanted world. The book was subsequently sold and published in 14 different countries and languages from Portuguese to Mandarin. I was treated to a 14 city US book tour by my publisher, Random House, as well as a New York cocktail party to celebrate its launch. In Minneapolis (or was it Portland?) a man who had heard my interview had driven 200 miles to come and hear me speak. (When I barely got a word in edgewise on morning rounds, this was something new indeed!) At each stop on my tour I had a designated guide. My designated chaperon arranged for me to be picked up from the airport, booked my hotel room and coordinated my interviews with the newspapers, radio and TV. They would fuss with my hair and makeup before appearances and make sure that I was comfortable. I met distinguished college professors, Nobel Laureates, ordinary men and women, librarians, students, mothers, daughters, fathers and sons. I was awed by their interest in Zenzele, Zimbabwe and my own life story.

Soon after my US tour, I was invited to Rome by my Italian publisher, Mondadori owned by Silvio Burlasconi. You can imagine my expression, as a resident fresh off-call and a red eye from New York, as they checked me into a five-star hotel, an ornate room on the Via Veneto with a marvelous view of Rome. My guide, the aptly named Joy, was stylish and attentive. The food was sumptuous and the conversations...
I am amazed at the contrasts in my two ostensibly antithetical loves, neurosurgery and literature. In my private practice I wrangle with Medicare for meager remuneration for saving someone’s life. In my life as an author I am paid over and over for something I did 13 years ago. Early I was astounded to discover that I received a check in the mail each time the book was sold to another country. Yet I had done no additional work! Meanwhile, I could visit a critically ill neurological patient in the ICU over and over, fret over their tenuous survival, pore over their labs, wring my hands at their prognosis, spend hours at the bedside and not receive a single cent for this work. As an author my opinion mattered. As a junior resident, I was once paid $10,000 to talk to a group of students for 45 minutes! That was half of my entire salary as a neurological resident! I was baffled by our value system as a society. In neurosurgery we are often beset by external complex forces (tort reform, malpractice insurance, Medicare legislation) that are beyond our control such that as individuals we are often silent and powerless. In writing fiction, the characters are completely outside the media’s glare. I remember my chief resident screamed at me the day the New York Times reviewed my book, “You have to decide if you are a neurosurgeon or an author,” seemingly forgetting the long proud heritage of physician authors that have gone before us like John Keats, Anton Chekhov, Wilder Penfield, and Walker Percy. Realizing our full potential as artists, musicians, authors need not and should not be regarded as threatening or subversive. I was grateful and fortunate to have a chairman who was immensely supportive.

J. Nozipo Maraire is a full-time practicing neurosurgeon, author and mother. She was born in Zimbabwe and has lived in the United States, Canada, Switzerland, Wales and Jamaica. Her first novel, Zenzele: A Letter for My Daughter, was translated into over 14 languages, was a Boston Globe Best Seller and a New York Times notable book of 1996. She lives with her husband, Allen Chiura, a Urologist and her three children in Oregon.

I was amazed at the contrasts in my two ostensibly antithetical loves, neurosurgery and literature. In my private practice I wrangle with Medicare for meager remuneration for saving someone’s life. In my life as an author I am paid over and over for something I did 13 years ago. Early I was astounded to discover that I received a check in the mail each time the book was sold to another country. Yet I had done no additional work! Meanwhile, I could visit a critically ill neurological patient in the ICU over and over, fret over their tenuous survival, pore over their labs, wring my hands at their prognosis, spend hours at the bedside and not receive a single cent for this work. As an author my opinion mattered. As a junior resident, I was once paid $10,000 to talk to a group of students for 45 minutes! That was half of my entire salary as a neurological resident! I was baffled by our value system as a society. In neurosurgery we are often beset by external complex forces (tort reform, malpractice insurance, Medicare legislation) that are beyond our control such that as individuals we are often silent and powerless. In writing fiction, the characters are completely outside the media’s glare. I feel blessed and humbled to be able to walk two such disparate paths and touch people’s minds literally and figuratively.

J. Nozipo Maraire is a full-time practicing neurosurgeon, author and mother. She was born in Zimbabwe and has lived in the United States, Canada, Switzerland, Wales and Jamaica. Her first novel, Zenzele: A Letter for My Daughter, was translated into over 14 languages, was a Boston Globe Best Seller and a New York Times notable book of 1996. She lives with her husband, Allen Chiura, a Urologist and her three children in Oregon.
NEUROSURGERY AND FICTION: A FANTASTIC VOYAGE INTO THE WORLD OF BRAIN SURGEONS

“Man, Woman, Birth, Death, Infinity,” is the famous opening line from Ben Casey. This television series was launched in 1961 and, for five years, chronicled the daily life of neurosurgery Chief Resident, Ben Casey (Vincent Edwards) at County General Hospital. The series put neurosurgery in the spotlight. In the early sixties, this portrayal helped to shape the neurosurgical image in the public’s mind, romanticizing the profession comprised of righteous, well-meaning and dedicated individuals in a high-risk medical discipline.

Much of what the public perceives of medicine is a result of fiction. Fast-paced, exciting and tragic moments are displayed with aplomb in shows like ER, Grey’s Anatomy and House, running in parallel with the complex and tragic lives of their physician characters. Neurosurgery, unlike many medical specialties, harbors an aura of complexity and danger which has fed the public imagination for many years. The average person on the street is unlikely to know a real neurosurgeon, but they may certainly know of “Dr. McDreamy” and his many strengths and weaknesses as he charters unknown territories and achieves miraculous results. Whether accurate or not, such characters likely represent our profession in the public’s eye better than the real McCoy.

There have been touches of neurosurgery depictions in general-medicine oriented shows. For example, the young intern Dr. Kildare (Lew Ayres) helps a brain surgeon depressed about a number of recent patient deaths in the 1940 film Dr. Kildare’s Strange Case. The beloved 1970’s general practitioner, Marcus Welby (Robert Young), dealt with a troubled neurosurgeon colleague, among other neurologically related topics. And, no doubt, some troubled neurosurgeons have popped up on Medical Center with Chad Everett. Dr. House (Hugh Laurie) seems to routinely get his internal medicine fellows to perform daring brain biopsies and cerebral angiograms to secure the mystery diagnoses, a tendency which often provokes this author to jeer and shout at the television screen — a rather unproductive effort since no one responds. In ER, one of the general surgeons performs an endoscopic lumbar discectomy, gets a dural tear, and the patient becomes paraplegic postoperatively, resulting in the inevitable lawsuit (another shout at the television moment).

There have been a few notable examples of neurosurgeons in fiction. In Milan Kundera’s The Unbearable Lightness of Being, the protagonist, Tomas, is a respected Czechoslovakian neurosurgeon who, after the 1966 Soviet invasion, loses his privilege to practice medicine when he refuses to retract statements made in a politically-charged Letter to the Editor. He ends his career, and ultimately his life, as a window washer and, finally, a collective farm truck driver, never failing to sacrifice his principles. In the darkness of an oppressive regime, intellectual suppression results in the removal of society’s most talented benefic individuals.

The Adventures of Buckaroo Banzai across the Eighth Dimension is a science fiction farce featuring a brilliant neurosurgeon that happens to also work as a secret agent, battling alien forces in the universe. He is also an accomplished musician and band-leader. Born of a scientific family whose main work was to test the ability to penetrate solid matter without physical (or psychological) harm, Buckaroo finds himself in combat with the deranged Dr. Lizardo who helped pioneer the technology and is conspiring with aliens from the Eighth Dimension to capture Banzai’s successful Oscillation Overthruster. In the 1984 film, Banzai (Peter Weller) helps a colleague successfully resect a pineal region tumor. Once the adventure proceeds in full force, there is very little further reference to neurosurgery.

Arguably, the greatest neurosurgical motion picture ever made was Fantastic Voyage, directed by Richard Fleisher. By the time of its 1966 release, Fantastic Voyage was the most expensive science fiction film made. Fantastic Voyage takes the audience on a tour of the human body, the so-called “inner space.” The “inner space” concept was relatively novel at the time. The 1968 film, A Rough Sketch for a Proposed Film Dealing with the Powers of Ten and the Relative Size of...
Things, explored distances from a point on earth (a human being) as we retract into space to the far known reaches of the universe. In contrast, the film then advances into the human under many powers of magnification right down to his molecular and anatomic structure. Antedating Powers of Ten, Fantastic Voyage uses this microscopic concept to cure bodily trauma from within.

Fantastic Voyage reportedly takes place in 1995. Dr. Jan Benes (Jean Del Val), a foreign scientist, possesses the secret for allowing miniaturization technology to last more than the current 60-minute limitation, allowing for entire armies to be placed behind enemy lines (a microscopic Trojan horse). Unfortunately, the “other side,” stages a motor vehicle collision while Benes is being escorted by car to the CMDF (Combined Miniature Deterrent Forces) for the purpose of discussing the technology. This accident causes Benes to hit the right side of his head on the inside of the car door. He lapses into coma after he is moved to another vehicle and taken to the CMDF headquarters for treatment. Angiography reveals a hematoma deep within the left hemisphere, the surgery of which would render him incapable of revealing his secret. The CMDF assembles a team to be miniaturized in a nuclear-powered submarine (the Proteus), which is robotically injected into the carotid artery while the patient is rendered hypothermic so that they may navigate to the injury site and dissolve the clot internally without disrupting the surrounding tissues. Renowned neurosurgeon Dr. Peter Duvall (Arthur Kennedy), a “difficult” but pious and introspective individual, has been experimenting with laser technology and will use his device (resembling a space weapon) to achieve the desired result.

Unfortunately, after injection, the team gets diverted through an occult arteriovenous fistula into the jugular vein and proceeds to explore the heart, pleural cavity, inner ear, and, ultimately, the subarachnoid space to reach the target area. All the while, a saboteur is trying to thwart the mission from within the ranks. Sophisticated models were used as well as large sets depicting the lung, the labyrinth, and, ultimately, the brain complete with electrical impulses sparkling along a web of neurons that surround the Proteus, its team, and the offending hemorrhage. Unforgettable are the attack of the antibodies on Raquel Welch (Duval’s assistant, Cora) and the large white blood cell which consumes the saboteur (Donald Pleasence) near the end of the film. The rest of the team escapes in the nick of time through the optic sheath and tear duct before they enlarge to a size where they would either be consumed by the body’s defense system or kill the patient.

In 1966, Fantastic Voyage tickled the curiosity of movie goers with its depiction of the inner workings of the human body. The film boasted many technical advisors and claimed that it was intended to appeal to health professionals in addition to the general public, though significant flaws of logic exist within the story and script. In 2009, this movie represented the ultimate in minimally invasive surgery. While we are still unable to shrink the neurosurgeon (and his/her skills) to the size of a microbe, we are able to manage many vascular disorders almost exclusively with endovascular approaches. Fantastic Voyage utilized laser and robotic technology in advance of its more popular usages in medicine and surgery some twenty to forty years later. Nanoparticles are revolutionizing drug delivery to tumors. Stereotactic placement of catheters into intracerebral hematomas for thrombolysis is the current Dr. Duval derivation. Nowadays, small is certainly “in.” This prophetic film’s retrospective message is, “Do the most with the least,” but even such surgery still requires thoughtful planning and execution.

The lay public remains influenced by what they see on screen, and television reaches many more people than cinema. Recent television neurosurgery portrayals include those in Grey’s Anatomy and the ill-fated 3 lbs. The latter was cancelled due to poor ratings after only three episodes. This program followed the renowned, dour, sarcastic, but brilliant New York neurosurgeon, Dr. Douglas Hanson, (Stanley Tucci) who separates the patient from the technical challenges. In contrast, his younger, more caring and sensitive partner, Dr. Jonathan Seger (Marc Feuerstein), is more oriented to the “whole patient.” In Grey’s Anatomy, neurosurgery becomes blended into the ensemble cast of surgical residents at Seattle Grace Hospital. Dr. Derek “McDreamy” Shepherd (Patrick Dempsey) is a caring, dedicated attending neurosurgeon recruited from New York City, who is also in love with the title character. Recently, he went through a professional crisis involving a case gone bad and the resultant law suit. Through the encouragement of his girlfriend, he overcomes his newfound trepidations and successfully removes a temporal metastasis from a stricken surgical resident. Unfortunately, the post-op scan
appeared to be without evidence of craniotomy and he points to the cerebellum as the mark of an excellent radiographic outcome (another shout-at-the-television moment). Perhaps, unlike Fantastic Voyage, the producers of such shows are not really looking to appeal to the health professional audience.

The small screen neurosurgeon to beat all was none other than the aforementioned Dr. Ben Casey. He, too, was dour and sarcastic, but also a dedicated and righteous resident, whose stalwart spirit often got him into trouble. In an episode entitled, “Echo of a Silent Cheer,” Dr. Casey operates on a severely brain-injured, quadriplegic athlete (Beau Bridges) without informed consent because he, unlike the patient’s fatalistic father, believes in his patient’s ultimate recovery. The father initiates a malpractice suit, which Dr. Casey wins in court after the patient begins to emerge from coma at exactly the right time — in front of all present. The usual dramatic licenses aside, the show attempted to inform its audience about various disease states and the benefits of social programs and specialties such as rehabilitation medicine. Ben Casey was created by James Moser who had earlier been involved in a show entitled, Medic, about a caring general practitioner, broaching subjects such as adolescent acne among others. Ben Casey boasted American Medical Association endorsement, and legendary neurosurgeon, Joseph Ransohoff, reportedly served as a technical advisor. Dr. Ransohoff was also, allegedly, the inspiration for the title character.

In retrospect, Ben Casey is a literate drama, with each episode delivering thoughtful dialogue and interesting subject matter. For latter-day neurosurgeons, this show represents a glimpse into neurosurgical practice in the pre-microscope and pre-Medicare era, when residents truly resided in the hospital and earned a mere $22 per month stipend. The diagnoses were not readily apparent through existing imaging techniques (plain radiographs, myelography, angiography, electroencephalography) and patients stayed in the hospital for long periods of time. The show, however, was not afraid to tackle tough issues such as child abuse recognition, with a rather shocking episode of a child continually returned to an abusive household after multiple trips to the hospital only to end up dead at County General’s doorstep. An impassioned speech by Casey at the end reveal the flaws of the social system for failing to protect children, which rings true even today when horrific mis-steps and negligence have failed to prevent such deaths.

Ben Casey also took surprising steps towards diversifying the medical staff with women and minorities. One episode brought the whole team of neurosurgery residents (usually they depicted just two) into a situation where a man suffers a penetrating spinal injury after an explosion involving radioactive material. The hospital physicist (a woman) informs the neurosurgery staff that there is limited time before reaching maximal radiation exposure during surgery until the foreign body is safely removed, necessitating a relay of surgeons to perform certain elements of the laminectomy operation. One resident, a woman who happens to have recently found out she was pregnant, nervously asks to be relieved from participation. Ben Casey, who had a reputation of being judgmental and without regard for his colleagues’ personal feelings, smiles and wisely refuses to let her operate. It is not certain how many shows of the time would have depicted such a situation.

By and large, most important fictional neurosurgical depictions have favorably represented our profession, whether accurate or not. Perhaps our daily lives are not as camera ready. Reality shows, such as Trauma: Life in the ER, may show what health professionals really do, but the power of editing cuts away the mundane to concentrate on the exciting. However, we must live with the perceptions fostered by the media, and, in our own way, represent ourselves truthfully. And if we must watch fictional neurosurgeons or neurosurgical situations, it may not be helpful to shout at the television, correcting all the inaccuracies for the benefit of our non-medical family members. After all, it is only fiction.
Any surgeon performing spinal surgery in the United States should, at this point, be paranoid. Spinal surgeons have been portrayed in the medical and lay press as being unethical hired guns, accepting bribes from industry in order to promote and perform unindicated and dangerous surgery on patients with benign disease in order to maximize personal financial gain. Even worse, according to the popular press, the vast majority of patients treated surgically could actually be cured using non-invasive therapies such as massage and acupuncture (Newsweek, April 2004).

Professional criticism has focused on the growth of spinal surgery, particularly spinal fusion throughout the 1990s and the large variation seen in rates of utilization based on location. The authors of the utilization study pointed to a lack of scientific evidence regarding the use of fusion techniques as the prime reason for the degree of regional variation. Indeed, the Cochrane review, as recently as 2005, has stated that there is no evidence to support the performance of any surgical procedure for degenerative conditions of the spine. Since health outcomes were presumably not worse in areas with lower utilization rates, an implicit accusation of systematic over-utilization was made. A more explicit accusation was made by one of the authors in a subsequent press release. These criticisms, whether or not they are valid, have led to significant scrutiny of spinal surgery and spinal surgeons in the United States, as evidenced by Senator Grassley’s “Sunshine Act” and numerous adverse coverage decisions issued by insurers with regard to spinal procedures.

Several of the authors of the utilization study referred to earlier organized a multicenter randomized controlled trial in order to prove, once and for all, that spinal surgery is not effective for the management of common spinal disorders. Borrowing from large medical epidemiological studies, they employed a very high quality study design, a randomized trial with an “intent-to-treat” analysis in order to assess the efficacy of surgical intervention for lumbar disc herniation, lumbar spinal stenosis and lumbar spondylolisthesis. The stated goal of the study was to determine the efficacy and cost-effectiveness of surgical intervention compared to contemporary non-operative management.

Immediately upon publication of the proposed methodology the surgical community found areas to criticize. Paul McCormick, among others (personal communication) pointed out the inappropriateness of using an intent-to-treat analysis in trials comparing surgical intervention to conservative measures. An intent-to-treat analysis is perfect for placebo controlled drug studies. In these types of studies, the intent-to-treat design reduces potential bias resulting from non-compliance with the treatment regimen and more closely reproduces the real world effects of a drug prescribed in a doctor’s office. However, in surgical trials, compliance in the surgical arm is ensured as soon as the patient is operated upon. Patients who fail non-surgical therapy can, however, cross over to the surgical...
group. Since these patients enjoy the potential benefit of surgical intervention, but are analyzed within the non-surgical group, the overall results are biased against a potential beneficial effect of surgery. Further criticisms related to the exclusion of patients with significant neurological deficits, failure of the studies to account for significant components of the costs of non-operative care, and failure to account for the significant costs associated with lost productivity due to unrelieved pain and dysfunction. These criticisms went unanswered and the trial, the Spine Patient Outcomes Research Trial or SPORT studies, was eventually completed. The results were published in the Journal of the American Medical Association (JAMA) and the New England Journal of Medicine (NEJM) beginning in November 2006\(^5\). Recently, the first cost-effectiveness information has been presented. Follow-up papers dealing with longer term results are anticipated in the next several years as well.

The first SPORT study published dealt with patients with symptomatic lumbar disc herniation (HNP)\(^6\). The authors screened 2,720 patients and excluded 729 due to a prior exclusion criteria (previous surgery, cauda equina syndrome, not surgical candidates, etc.). Nineteen hundred and ninety one patients were asked to enroll in the randomized study, 501 agreed to randomization, 747 refused to enroll in any study and 743 refused randomization but agreed to participate in a concurrent observational study. Two hundred and fifty six patients were randomized to non-operative care; 107 actually had surgery; 69 either were lost to follow-up, died or withdrew from the study; and 80 completed the two-year period of non-operative care. These 80 patients were treated with a wide variety of injection, physical therapy, medication and other methodologies. Therefore, more patients in the “non-operative” group were treated with surgery than were treated with all other non-operative methods combined. In the “surgery” group, 245 patients were assigned to receive surgery. Surprisingly, there was significant crossover in this group as well and only 140 were treated with surgery. Fifty-nine patients were lost to follow-up or withdrew (no one died). Forty-six patients were treated non-operatively and completed the two-year study. All told, 57% of the original “surgery” group and 42% of the original “non-operative” group were treated surgically while 31% percent of the non-operative group and 19% of the surgical group were treated “non-operatively.”

At the 2008 meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Fred Geisler among others pointed out that the degree of crossover noted in the SPORT study made the two treatment groups essentially identical (personal communication). An intent-to-treat analysis would be unable to detect even a substantial benefit of surgery. He provided the following thought experiment to illustrate the point (I have repeated his analysis to make sure the numbers are correct): Let us assume that being tossed off the top of the Empire State Building in a group of 100 epidemiologists (50 allocated to each group), and we allowed the same degree of crossover as occurred in the SPORT study, then we would be forced to conclude that taking the elevator has no demonstrable benefit in terms of survival compared to being tossed off the top without a parachute. The actual conclusion from the SPORT randomized trial is as follows: “Because of the high numbers of patients who crossed in both groups, conclusions about the superiority or equivalence of the treatments are not warranted based on the intent to treat analysis alone.”

This statement was allowed to stand as the defining result of the study even though when the data were analyzed in an “as-treated” fashion, surgical intervention appeared to hold significant benefits compared to non-operative management. This was true in both the “randomized” as well as the observational cohort. Patients who were treated with surgery had more severe symptoms, were of lower socioeconomic class and felt that they were worsening compared to those treated non-operatively. Despite these potentially negative predictive factors, patients treated surgically had clinically and statistically significant improvement in outcome compared to those treated without surgery in EVERY outcome measure and at EVERY measured time-point. Complications were very rare and overall patient satisfaction was high, regardless of the treatment received. Presumably, the rationale for providing such a misleading concluding statement was that reverting to an as-treated analysis essentially
eliminated the benefits of randomization, as patients in reality chose their treatment. The authors and editors wanted to publish a randomized trial.

The concluding statement was appropriated by the professional and lay press as a testament to the futility and ineffectiveness of an expensive and dangerous surgical procedure. ABC News (Nov 22, 2006) reported “Beating Lower Back Pain – Without Surgery:
• Study Shows That Patients Get Same Benefits Regardless of Whether or Not They Choose the Knife
• “Physicians treating patients with back pain may be able to offer a no-surgery option, as non-surgical long-term outcomes might be similar,” (ABCNEWS.com)

Dr. Weinstein, the lead author of the SPORT study was interviewed by Katie Couric on the CBS Evening News. Thomas Schwenk, in Journal Watch General Medicine reported that “surgical and non-surgical options have the same long-term outcomes” (November 28, 2006). Worse yet, the message was promoted by those who should have known better, such as the funding agency National Institute for Arthritis and Musculoskeletal and Skin Diseases (NIAMS) in their December 2006 press release titled “Study Shows that Patients with Herniated Discs Improve over Time even without Surgery.”

Organized neurosurgery, through the AANS/CNS Washington Committee and the Spine Section, wrote letters to the editor of JAMA and the New York Times protesting what we felt was a distortion of the true results of the studies. These letters, not surprisingly, were never published.

Shortly following the publication of the SPORT HNP study, the results of the stenosis and spondylolisthesis arms of the study were published in the New England Journal of Medicine™. The results were essentially identical in all three studies. A small percentage of eligible patients consented to randomization, those who were randomized crossed over with great frequency, patients treated surgically did substantially better than those treated non-operatively, and the intent-to-treat analysis failed to disclose a significant benefit to surgery because of the high crossover rates. The results were presented differently this time, and the concluding statement reflected what actually happened as opposed to what might have happened if crossovers were not allowed: “In nonrandomized as-treated comparisons with careful control for potentially confounding baseline factors, patients with degenerative spondylolisthesis and spinal stenosis treated surgically showed substantially greater improvement in pain and function during a period of two years than patients treated non-surgically”.

The reaction from the press was more muted — there was no interview with Katie Couric this time. MSNBC did interview Dr. Deyo, who stated that “while it is clear that people with major motor problems require back surgery, the new studies suggest that patients with herniated disks, degenerative spondylolisthesis or spinal stenosis do not need surgery, but the appropriate surgical procedure may provide valuable pain relief” (MSNBC, May 31, 2007). I, for one, have difficulty understanding why Dr. Deyo says that while patients enjoy substantial pain relief and functional improvement following surgery, they really don’t need surgery. Apparently Dr. Deyo has never encountered a patient disabled by pain who actually needs to function in order to provide for his/her family. Our friends from the Medical News Service reported that “Study shows that surgery is more effective than other treatments for common back problem (Medical News Service.com, 6/28/07).” NIAMS issued a press release stating the same thing, an exact reversal of their previous press release based upon the exact same data (June 25, 2007).

What have we learned from these episodes? First of all, that we cannot expect fair treatment from the general medical or lay press. Those in the business of selling information are much more interested in scandal and salacious behavior than mere confirmation of what many consider common sense. The statement that dangerous and expensive surgery is ineffective is much sexier than the statement that patients, when properly informed of their treatment options by their physicians, make rational choices that lead to good outcomes. It’s tough to pitch an article to an editor titled “Appropriate Patients do Well When Treated with Appropriate Procedures.”

Second, we learned that patients are very good at choosing what is right for them if they are properly informed of their treatment options by their physicians, make rational choices that lead to good outcomes. It’s tough to pitch an article to an editor titled “Appropriate Patients do Well When Treated with Appropriate Procedures.”

Third, we learned that we cannot trust that “experts” at the NIH, at the major medical journals, in the mainstream media or on insurance review panels have a realistic understanding of the nature of surgical trials and the significance of the reported results. Too often, these
"experts" rely on the authors’ conclusions without critically appraising the evidence as it is presented.

What can we do to try and prevent these same types of episodes from happening again and again? First of all, we need a cadre of neurosurgeons who are well-versed in the interpretation of medical literature and the jargon of evidence review to interpret important studies from the standpoint of the clinician. Fortunately, the development of the guidelines effort within organized neurosurgery has resulted in the existence of a very active group of true subject experts who also understand the issues associated with evidence assessment and evaluation. Second, we need a mechanism to coordinate responses to messages that are not consistent with common sense and clinical experience. The Washington Committee, funded by both the CNS and AANS has worked very hard to develop position statements, assign volunteers to testify in front of insurer panels, provide expert testimony for governmental agencies and to provide resources for practicing neurosurgeons to use in establishing the validity of effective procedures. Third, we need a mechanism to promote the established value of neurosurgical procedures to the professional and lay press. The CNS and AANS have responded to requests from the Section on Disorders of the Spine and Peripheral Nerves and the CSNS and have agreed to fund a “public relations” position within the Washington Office. While the exact job description remains to be established, the mission of the public relations office will be to create proactive press releases and sound bites regarding important contemporary issues and to get these messages into the general medical and lay press.

An important caveat to consider is the fact that we simply cannot afford to lose the public relations war. Neurosurgeons are expensive and government funded health care is nearing bankruptcy. Private insurers are eager to “improve quality” by cutting reimbursement for procedures not proven to be effective. Neurosurgeons, particularly spine surgeons, are a high-profile target. We must pick our battles carefully and win every single one of them. We, as organized neurosurgery, cannot fight to support procedures which do not have a solid evidence base to support their application. We cannot be used by industry to promote the use of devices unless there is clear benefit to the use of such technology. If we are perceived as industry spokespersons or anything less than patient advocates, we are lost. We need to contribute to the development of new knowledge, assist in the interpretation of its importance, and fight for the ability to offer effective treatments to patients with disabling conditions.

Doctors spend their lives studying medicine, and probably do more continuing education than those in any other profession to bring the most advanced knowledge to their patients. We physicians have studied for years and are grounded in the scientific method which we use daily to analyze our patients’ health problems and help them live longer lives. We meet and talk in detail with thousands of people during our careers. We ask questions and our patients tell us the intimate details of their lives. They confide in us and trust us with their personal information so we can help them make life and death decisions. How many other professionals have this privilege and responsibility for others’ lives?

Yet, when confronted by business people, administrators, politicians and others who criticize our field, doctors generally feel unprepared to deal with their criticisms. The huge amount of good the medical profession does for the public is being compromised by criticisms of the healthcare system for which we are held responsible. Yet this system, which began with a personal doctor/patient relationship, has been corrupted by government regulations, by others who have come between the doctor and the patient, by the reluctance of physicians to become involved in the defense of the medical profession and their patients, and by advances in science and technology that have changed the pattern of medical practice. This erosion of the leadership of physicians to a defensive position began slowly some 40 years ago.

In medicine we have never learned to promote ourselves. Public Relations was not a course we took in medical school. We were not brought up to “deal for the last dollar” because we give away our services daily to those who cannot afford them. We did not pay much attention to billing because we were making a reasonable living, and money was not the principal reason we went into medicine anyway. How many of us ever refused to take care of a patient who had no money? We have just done our job, taking care of patients, every day. But that is not enough for today or tomorrow’s developments in the world of power, business and politics. We need to become more involved, but how?

The worlds of business and politics are different in every way. In business the motives are basically to make a profit and to benefit shareholders. Some businesspeople who read this editorial will object to this characterization. But show me a businessperson who will routinely discount his products by 80% and give away merchandise to those who cannot afford the price of what is being sold. Doctors are the most charitable people I know, and yet they are never noticed for this charity. The businessperson makes the money and then gives it away with a fanfare. Doctors, and, yes, teachers, clergy, and other such beneficent groups give daily with very little notice.

In politics, politicians decide that the doctor’s products are ones that everyone needs, and claim their right to those products “for the good
of the people.” Your education, knowledge and expertise are taken from you and given to others without your consent. Healthcare is being advocated as a “right.” This act is outright theft of your freedoms and personal property by the government. That is what Socialism does for the “good of the people.” Are doctors against what is for the “good of the people?” Imagine that principle applied to the business world!

We are not against helping people who cannot help themselves — we have done this for decades and centuries. We stand for what is best for our patients. Others, like politicians, say they do this, but have other agendas that are depriving our patients of the rights they have to make their own life decisions.

Also, we must understand that others know our weaknesses and are smart enough to take advantage of them for their own interests. They know that doctors are not unified and that they will feel guilty if accused of working for money and not following the Hippocratic Oath. We were raised to be independent thinkers, so working in groups is not easy for most physicians, particularly neurosurgeons. So, we do not use our power as effectively as others do. They know that if doctors were organized, opposing agencies or people would have no chance against their unity. No one else in the world can deliver the services we do. There would be no healthcare system without physicians. The last thing the government wants is for doctors to de-participate from Medicare. Why?

Others survive in their worlds by discrediting their competitors, but this is not a common practice among physicians. So, those who want to gain an advantage in the $2 trillion healthcare business will do whatever they can to gain power. Doctors are told that their errors kill

> DOCTORS ARE THE MOST CHARITABLE PEOPLE I KNOW, AND YET THEY ARE NEVER NOTICED FOR THIS CHARITY. <
98,000 patients each year, that 47 million are uninsured and denied medical care, and that even though the United States spends more money than any other country on healthcare, the care here is worse than in other countries. We are responsible for the failing auto industry and for high infant mortality rates, and so on. As I indicated in my CNSJ article in the Winter 2009 issue, these statements are not correct. And as I mentioned, doctors do not respond to these criticisms — a silence that suggests our acceptance.

So, why am I mentioning these points? According to Regina Herzlinger, PhD, author of Who Killed Healthcare? (a book I recommend to all doctors), she states that there is huge “war” going on among academics, business people, politicians, hospitals and insurers for control of the $2 trillion pool of healthcare dollars. Doctors are not noticeably at the table. However, the AMA and the neurosurgical societies and others are silently working to influence the government legislation. Still physicians feel alone, defending themselves without visible advocacy.

A recent study of the media at the Harvard School of Government indicated that most outlets are oriented to the Democrat party, and their coverage of the candidates was almost 2:1 in favor of the Democrat candidate. This situation has been occurring for decades. (IBD; “Uncommon Knowledge”-Part 1, November 12, 2007) The media has not reported the facts about healthcare accurately, so the public is fed information that is lopsided about our profession and what doctors do.

Yet, another study on December 10, 2007 by the Gallup Organization (“Lobbyists Debut at Bottom of Honesty and Ethics List”) indicated that the public has the highest confidence in nurses (81%) and doctors (66%) while politicians, the news media and business people fall far behind in credibility.

Now, last year there were 1.1 billion patient visits to doctors in the United States (Nanci Hellmich; “Aging Population Making More Visits to the Doctor’s.” USA Today August 7, 2008); that is right, more than a billion! That means that the people who trust you are in your offices, clinics and hospitals as your patients many times a year. This “people power” represents a huge opportunity for physicians if they take advantage of it. It is the largest and most powerful lobby in the United States and, for that matter, in any country.

Most doctors do not have time to study all the politics and the media comments about medicine, but they know that this information is not correct from their own experience. What can one doctor do to affect the healthcare debate?

We need to become involved in our local, state and national medical organizations to urge them to vocally advocate what is best for our patients and our profession. There is POWER in numbers. Let’s get our message out.

I have written a letter that you can distribute to your patients, which explains the facts about healthcare. You can give it to your patients in the office or wherever you see them. You can put the letter on your own stationery and sign your own name or change it to suit your position. I want nothing for it. It is a beginning to tell your side of the story. Let’s get the facts out to our patients about health care. Yes, you can make a difference!

If you want a copy of the letter, e-mail me at jamesausman@mac.com.
Congress of Neurological Surgeons
2009 ANNUAL MEETING
New Orleans, Louisiana
October 24-29, 2009

Join us in New Orleans, Louisiana for the 2009 CNS Annual Meeting, as we explore our theme A Culture of Excellence.

Have a Complex Case?
Receive Real-Time Advice from Neurosurgical Masters.

Cases and Coffee with the Masters allows you to share your most interesting cases with colleagues. Experts from each neurosurgical subspecialty review the cases to discuss management strategies, identify risk factors and offer techniques for complication avoidance. For consideration, upload your case prior to the Annual Meeting to www.cns.org/meetings/2009/attendees/scienceCase.asp.

- **Vascular/Endovascular Discussants:** Cameron G. McDougall, Saleem I. Abdulrauf, Laligam N. Sekhar
- **Spine/Peripheral Nerve Discussants:** Christopher I. Shaffrey, Eric L. Zager, Praveen V. Mummaneni
- **Tumor Discussants:** Edward H. Oldfield, Joerg-Christian Tonn, Amin B. Kassam
- **Functional/Epilepsy and Pain Discussants:** Kim J. Burchiel, Aviva Abosch, James T. Rutka
- **Trauma Discussants:** Randall M. Chesnut, Roland A. Torres, Jamie Sue Ullman
- **Pediatric Discussants:** Alan Cohen, Hugh Garton, Douglas L. Brockmeyer

Don’t miss these unique interactive sessions, Thursday, October 29 at 9:00 AM.

Upload your cases today to http://www.cns.org!

Registration Now Open at www.cns.org!

The Congress of Neurological Surgeons is Pleased to Announce a Joint Meeting with the Neurological Society of India (NSI) and the American Association of South Asian Neurosurgeons (AASAN)!

For More Information
info@1cns.org
www.cns.org
Toll Free: 877 517 1CNS
Phone: 847 240 2500
Colleagues,

As the outgoing Chairman of the Section, I am grateful for the opportunity to address you. The “Spine Section” is the world’s largest surgical organization dedicated to treatment of patients with spinal disease and, as such, plays an important role in the development, interpretation and use of medical evidence to foster improvement in the quality of our patients’ lives. The Section has been blessed with outstanding leadership in the past and we look forward to a future secure in the knowledge that the foundation for inspired leadership is solidly built within the current Executive Committee and subcommittees.

I have spent the last decade on the Section’s Executive Committee, and have also had the unique opportunity to preview videotaped interviews with 21 of the 23 previous Chairmen (we are working on getting those last two). As I watched and listened to the voices of the founders and shepherds of the Section, I noticed several common themes.

The first theme involves the essential role that spine surgery plays in neurosurgical training and practice, and further, that separating spinal surgery from neurosurgery is impossible. The second theme is that despite this essential role, spinal surgery and spinal surgeons have traditionally been considered “second class citizens.” Many prominent surgeons pointed to the relative lack of representation of spinal surgeons on the boards of our national organizations and as chairmen of our training programs as evidence. A third theme relates to the development of close ties to orthopedic spine surgeons, after an admittedly rocky beginning. The importance of cooperation with our orthopedic colleagues with regard to training, research and advocacy issues was repeatedly stressed. Conflict of interest and management of such conflicts was often cited as a present and future challenge for medical societies in general and the Section in particular, given the intense focus of our specialty on the development of novel technologies.

The most consistent theme, however, is the importance of the Section’s support of and participation in the development, evaluation and publication of scientific evidence that can be used to guide practice and policy decisions. The Section has drastically increased its support for basic science research, traditional clinical research and especially outcomes-based research over the last several years. When I first became involved with the Section, the only research awards sponsored were the Mayfield awards, which amounted to a total expenditure of $10,000 per year. This year, and for the foreseeable future, the Section is awarding nearly $250,000 in research grants and awards with a particular focus on outcomes-based research. Outcomes-based research is our most effective tool to develop important new knowledge that we can use to improve the care that we deliver to our patients.

This increased support is in addition to the $500,000 donation made by the Section to the neurosurgical research and education fund, which is used largely to support basic science efforts. The Section also administers a vigorous fellowship program that facilitates resident and post-residency training. Many
individuals have contributed to this growth in research support, and any attempt to list them would certainly leave out important contributors. I do feel obligated to mention the vital contributions of Curtis Dickman, who formally established a research fund during his chairmanship, and also Zohar Ghogawala, who as Chair of our Current Outcomes committee has brought new energy, substantial expertise and demonstrated productivity to a nascent process. I would also like to personally thank the Wallace Foundation for their generosity in allowing us to grow this important program.

In terms of the appraisal of medical evidence, the Section was the “early adopter” of evidence-based medicine within neurosurgery and in spinal surgery. Edward C. Benzel, Paul C. McCormick, Mark N. Hadley and Beverly C. Walters, among others, provided the insight and initiative to bring structured interpretation of the medical literature to spinal surgery. The development of an intensive training program, sequestration of the work group from outside political and economic interests and demand for academic rigor separated the Section’s efforts from contemporary reviews or consensus statements. The Section has self-funded each and every guidelines effort thus far in order to manage potential conflicts of interest and will continue to do so. We have also collaborated extensively with our parent organizations, the North American Spine Society and other groups such as the American Pain Society to promote the continued development of practice guidelines based on medical evidence, not political or economic expediency. These efforts have not been universally welcomed, and it is a testament to the Section’s leadership over the last decade that they have continued to be advanced despite sometimes strenuous opposition from within the section and from the larger neurosurgical community.

In May, the latest set of clinical practice guidelines, this time dealing with cervical myelopathy, will be published in the JNS Spine. Paul Matz and his committee have done a wonderful job and Mike Kaiser is taking over as Guidelines Chair with an already full plate of projects.

Spine surgery is expensive, high profile and currently under the gun. Spine surgeons are not universally revered as knights in shining armor and the activities of a few have tarnished the reputation of many. We are being portrayed as agents of the medical device industry, offering dangerous and ineffective services for financial gain. Congress, the Office of Inspector General (OIG), the Centers for Medicare and Medicaid Services (CMS) and other third party payers have not been deaf to such accusations, and efforts to curtail the performance of certain spinal procedures are a constant concern.

We are completely dependent upon the development and interpretation of the medical literature to defend our practices. It is critically important that we as clinicians stay intimately involved with policy development regarding the management of our patients. Ignorance about or inappropriate interpretation of the medical literature will lead to the loss of our ability to offer effective treatments to our patients. Many of you have heard me speak about the SPORT studies from this podium (see related article on page 38), and many of you will recall Jon Lurie, the SPORT epidemiologist, being vigorously challenged following his presentation regarding the SPORT lumbar discectomy trial. Despite the fact that Paul McCormick and other spinal surgeons initially raised a red flag that the trial was fatally biased against surgery, it was completed. And as expected, despite spectacular noted improvements in the surgically treated patients compared to non-surgically treated patients, no statistically significant effect was reported in the intent-to-treat analysis. The purported lack of effect of surgery was trumped throughout the lay and professional press. Spinal surgeons were called to task in front of the CMS and by other insurance carriers eager to “improve care” by not paying for procedures not proven to work. It required and still requires substantial investment in time and resources to deal with these “tech assessments” and “coverage decisions” made by non-surgeons.

Recently your representatives have been called upon to justify the performance of many new as well as established procedures. In the last two months we have been asked to comment specifically on issues related to lumbar fusion, the use of bone morphogenic protein (BMP), cervical and lumbar disc arthroplasty, inter-spinous spacer devices, trans-sacral interbody fusion, lumbar and cervical discography, and Intradiscal Electrothermal Annuloplasty (IDET). Joe Cheng, John Wilson, Greg Przybyski and the Current Procedural Terminology (CPT) Committee along with representatives from the Guidelines Committee are constantly called upon in the eleventh hour to develop and deliver balanced and effective...
arguments for or against the utilization of whatever technology is being investigated. It is important that I stress to you that not all of our reviews are positive. I have personally witnessed the public discrediting of the Section based on a position we took regarding the superiority of kyphoplasty over vertebroplasty a few years ago. I promised myself that such an event would not happen on my watch, and we have repeatedly resisted commenting in support of techniques or technologies which do not have a clear role in improving patient outcomes. Not all of our members have been pleased with some of these decisions. To the disgruntled I challenge — show us the data.

Tied up in some of these activities is the conflict of interest issue. The “Sunshine Act” sponsored by Senators Chuck Grassley and Herb Kohl as well as the Office of the Inspector General investigation into surgeon payments by device companies have brought needed exposure to relationships between surgeons and industry. As you may have noted, I have pretty much divested myself from industry relationships for the last several years. The reasons I chose to do this are personal and related to my employer, my role in advocacy and, to be completely honest, to the fact that I wasn’t making enough to justify the hassles associated with repeated disclosure and “management plans.” My decision was based on personal circumstances and I firmly believe that physician involvement in technology development is absolutely imperative for the advancement of our field and for further improvement in patient care. I firmly believe that a physician has a great idea and becomes a device manufacturer, then appropriate remuneration is ethically, legally and politically correct.

The North American Spine Society, perhaps prompted by a directed attack by a disgruntled former board member, has established a policy that requires almost complete divestiture by those who are asked to serve in significant leadership positions. While this decision achieved great press coverage in the Wall Street Journal, I wonder if it is the right thing to do. Such a policy demonizes relationships that most of us agree are essential to medical progress. The AANS, the CNS and hence the Section adhere to a rigorous disclosure policy. This standard is similar in concept to that used by the ACCME in the education realm, but is a bit more muscular in terms of reporting degrees of conflict. While absolutely state-of-the-art and legitimate, many such policies are doing little to truly mitigate the influence of conflicts. I have been to talks where the disclosure of the conflict actually seems to give the presenter a “license to promote,” as it were. I have not personally figured out the best strategy for dealing with this particular issue, however, it is one that Christopher Shaffrey and the other incoming leaders of the Section will have to continue to wrestle with for the foreseeable future.

In conclusion, I would like to thank you for the trust that you and your representatives on the Executive Committee, placed in me by allowing me to serve as Chair for the past year. It has been an exhilarating and somewhat exhausting ride. Our successes thus far are a testament to the continued strength of our membership and the wisdom of our past leaders. I firmly believe that the Section is well-positioned to lead spinal surgeons into the future, and I look forward to watching the Section continue to flourish from a somewhat different vantage point.
CNS International Vista Membership.

The Congress of Neurological Surgeons exists to enhance health and improve lives worldwide through the advancement of education and scientific exchange. Gain access to outstanding CNS publications and other world-class educational resources through the convenience of the internet with the CNS International Vista Membership.

Benefits Include:

• Internet access to NEUROSURGERY®, the official CNS journal, and all other CNS Publications.
• Access to the CNS University of Neurosurgery and other educational products!
• Discounted rate on SANS Lifelong Learning.
• Reduced registration fees at the CNS Annual Meeting.
• Opportunity to contribute to the CNS through volunteer service on various committees – including the International Committee.

The CNS is a world-leader in neurosurgical education and innovation. Join the CNS today to enhance your leadership skills, advance your education and further your neurosurgical career.

Applications for CNS International Vista Membership are available online at www.cns.org.

Become a member today and reap the benefits of membership with the Congress of Neurological Surgeons!

Applications and eligibility requirements are online at www.cns.org.
CONFLICT OF INTEREST DISCLOSURES:

REPORT FROM THE CNS AD-HOC COMMITTEE ON BEST PRACTICES AND ETHICAL STANDARDS

I n January 2008, then CNS President Anthony Asher formed an ad-hoc committee of the CNS to re-evaluate the ethical issues and conflicts of interest arising from relationships between the medical industry and the CNS, the CNS members and the CNS publications. With concern regarding those relationships generated internally by the CNS members, as well as heightened external scrutiny on conflict of interest between pharmaceutical and medical device companies from people such as US Senators Chuck Grassley and Herb Kohl, the CNS Ad-hoc Committee on Best Practices and Ethical Standards began a detailed review of the CNS policies affecting those relationships. In particular, the committee set out to answer questions including: Is the CNS doing enough with respect to disclosure of potential conflicts of interest in its CME products? Are the CNS policies regarding interaction with industry specific enough? What standards regarding these relationships are developing outside of neurosurgery? How do the CNS policies compare with similarly situated professional medical organizations or industry-sponsored advocacy groups?

Starting in February 2008, 11 committee members from both academic and community practice began a comprehensive review and comparison of the CNS, AANS, North American Spine Society (NASS) and Advanced Medical Technology Association (AdvaMed) ethics and conflict of interest statements. In addition, committee members compared the existing CNS policies regarding disclosure in its publications (NEUROSURGERY, CNSQ, Clinical Neurosurgery) with those of the Journal of Neurosurgery, Journal of the American Medical Association (JAMA), and the New England Journal of Medicine (NEJM). The committee conducted five conference calls over a seven-month period and after each call created a revision of the existing CNS policies leading to a final document. This final 16-page document entitled “Guidelines for Interaction with Commercial Enterprises and Medical Industry for the Congress of Neurological Surgeons (CNS), CNS Members and CNS Publications” embodies the work of the committee and guidance from the CNS Executive Committee and Officers. It was adopted by the CNS Executive Committee in September 2008 and can be viewed on the CNS web site: www.cns.org.

There are three key portions of this document that are relevant to the CNS members, CME providers at the CNS-sponsored events and those seeking publication of their work in the CNS-sponsored publications. First, the CNS now provides a very clear definition regarding a conflict of interest. A conflict of interest is defined as a circumstance “when an individual has an opportunity to affect patient care, research activities or data interpretation about products or services of a commercial interest with which he/she has a relevant financial relationship.” Further, a relevant financial relationship is defined as “a financial relationship in any amount occurring within the past 12 months that creates a conflict of interest. A financial relationship is one which the neurosurgeon benefits by receiving a salary, royalty, intellectual property rights (i.e., patent rights), consulting fee, honoraria, ownership interest (i.e., stocks, stock options or other ownership interest excluding diversified mutual funds), gifts or other financial benefits. It is further defined by the CNS according to the amount or “type” of financial benefit conveyed to the neurosurgeon within the past 12 months:
$0 - $1,000 = minimal; $1,000 - $25,000 = minor; $25,000 - $500,000 or 5-50% ownership of a company = major; >$500,000 or >50% ownership of a company = primary."

A conflict of interest may also occur when a neurosurgeon or an immediate family member has, directly or indirectly, a financial interest or positional interest or other relationship with industry that could be perceived as influencing the neurosurgeon's obligation to act in an objective manner. A positional interest occurs when a neurosurgeon or family member is an officer, director, trustee, editorial board member, consultant or employee of a company with which the neurosurgeon has or is considering a transaction or financial arrangement.

Thus a conflict of interest under these CNS guidelines would be reported with three identifying criteria: (1) the name of the company with which the neurosurgeon has a relevant financial relationship; (2) the type of relationship (i.e., minimal, minor, major, primary); and (3) any type of positional interest the neurosurgeon has with the company (e.g., officer, trustee, consultant, etc.). For purposes of disclosing conflicts of interest to patients, this document encourages the CNS members to do so and states that a CNS member should have a mechanism to identify and resolve conflicts of interest within their hospital or business when they arise. In the future, a proposed web site provision will allow the CNS members to make their conflict of interest disclosures available to the public. Patients of the CNS members can be directed to this web site to view the disclosures or the disclosures may be printed out and given to the patient.

The second key portion of the document pertains to neurosurgeons providing CME content at the CNS-sponsored events. It is essential for the CNS to be able to objectively demonstrate that CME content is free of commercial interest or control in identifying CME needs, determining educational objectives, selecting CME content, selecting persons that control CME content, selecting educational methods and evaluating CME activity. The CNS officers and CNS-sponsored CME organizers must go through a thorough annual disclosure process to affirm these important tenets. Similarly, CME providers at the CNS-sponsored events must provide the same three conflict of interest disclosures described above (name of the company, type of relationship, any positional interest) for the CNS members to provide to patients. In addition to those three disclosures, the CME provider must also describe the specific type of relationship he or she has with a company (i.e., salary, royalty, intellectual property rights, consulting fee, honoraria, ownership interest, gifts, or other financial benefits).

The final key portion of the document covers conflict of interest disclosures by authors, editorial board members, editor-in-chief, associate editor(s) and ad-hoc reviewers of the CNS publications. In addition to the relevant financial relationships of a conflict of interest that have been previously described in this article, authors may also have personal relationships or affiliations that could influence or bias the author's decisions, work or manuscript. All of these financial and personal conflicts must be disclosed by authors at the end of the manuscript. Of note for authors, all relevant financial relationships within the past 24 months must be reported as opposed to the past 12 months for the other CNS disclosures. Support for research must still be disclosed in the Acknowledgments portion at the end of the manuscript. The Editor-in-Chief, Associate Editor(s) and editorial board members must provide the same conflict of interest disclosures as authors. Ad-hoc reviewers must discuss their conflicts of interest with editors but do not have to provide written conflict of interest disclosures.

As is apparent from the descriptions above, it is the goal of the CNS to not only comply with the disclosure expectations of our patients, communities and public leaders, but to provide transparency in all that we do. At the same time we must be mindful of the potential burden that transparency may impose on some of our members. Neurosurgery is very fortunate to have some very bright, motivated and innovative individuals. Without question there is opportunity for both physicians and industry to benefit from a relationship, as industry can provide resources for research and product development that no other entity can and physicians can provide knowledge, skill and application that no other entity can. While it is true that there is potential for abuse in an unregulated environment, it is equally true that those relationships are essential to produce the new devices and drugs that benefit us all. Guidelines regarding conflict of interest disclosure are never created to impede those relationships or discourage innovators from taking risks or trying new things. Rather, it is through the transparency of disclosure that we earn the trust of our patients and the respect of our communities. We hope that the CNS membership, CME providers, authors and editors will embrace these guidelines and reinforce the foundation of that trust and respect.
A new president and a new Congress, but the same old problems face the health care system, generally, and neurosurgeons in particular. With the stars seemingly aligned for the passage of major health care reform legislation this year, organized medicine faces perhaps its best opportunity in years to address a number of critical problems facing physicians. The AANS and the CNS have an ambitious legislative agenda (see “AANS/CNS 2009 Legislative Agenda” on page 39), and priorities include improving trauma and access to neurosurgical emergency care; fixing the Medicare physician payment system; enhancing Medicare and other physician quality improvement programs; increasing funds for medical research; protecting the right of physicians to own and operate health care facilities such as specialty hospitals and in-office ancillary services, such as imaging; preserving quality residency training and education; and last, but certainly not least, working on finding creative solutions to address the medical liability problem. Working with our partners from the Alliance of Specialty Medicine, the American College of Surgeons and the American Medical Association, the AANS and CNS hope to achieve positive results on many of these fronts by the close of 2009.

**FIXING THE MEDICARE PHYSICIAN PAYMENT SYSTEM**

While large-scale health system reform is clearly a priority for President Obama and the Congress, the most immediate problem facing medicine is the looming 22 percent payment cut that will go into effect on January 1, 2010 unless Congress intervenes. This cut is a result of Medicare’s flawed sustainable growth rate (SGR) formula. In addition to the pending 22...
percent cut, the SGR formula also requires annual Medicare payment reductions through 2016, for cumulative cuts of over 40 percent over the next six years (Figure 1). Over the past several years, Congress has repeatedly passed stop-gap measures to prevent the annual cuts, but it has yet to pass legislation overhauling the entire payment system.

Challenges for Reforming the System
The principle obstacle to reform is cost. The Congressional Budget Office (CBO) estimates that the cost to reform the SGR system may be as high as $556 billion. Even in Washington, DC, where it appears that the federal government is on an unsustainable spending spree, this is “real” money! Fortunately, virtually all members of Congress, the President and other policymakers agree that the SGR formula should be eliminated. It is understood that if the 22 percent payment cut is implemented, it will pose particular challenges for patient access to surgical care. Policymakers also generally appreciate that the SGR reimbursement problem is further complicated by rising practice costs, including medical liability premiums and health information technology systems, the burdens of emergency care coverage, and a workforce growth rate that is not keeping pace with an aging population.

Another challenge facing neurosurgery is the movement to make significant improvements in primary care services — including paying primary care physicians more money. The American College of Physicians is seeking legislation that will raise primary care physicians’ reimbursement to a minimum of 80 percent of the average of all other physicians. This could translate into a 10-20 percent payment increase. Unfortunately, this too will cost the system additional money. Both the Medicare Payment Advisory Commission (MedPAC) and Senator Max Baucus (D-MT), Chairman of the Senate Finance Committee, have agreed that primary care physicians’ reimbursement should be increased and that this increase should be done in a budget neutral manner from other physicians! The AANS and CNS are actively opposing increasing primary care reimbursement at the expense of surgical reimbursement. In addition, the American Medical Association has become our powerful ally in this, and the AMA Board Chair, Joseph Heyman, MD, has publicly stated that the AMA “absolutely opposes applying budget-neutrality rules that confine off-sets to the physician payment pool. Congress should not rob Dr. Peter, the surgeon, to pay Dr. Paul, the primary care physician.”

Implementing a New Payment System
Because the current SGR mechanism applies a one-size-fits-all approach to Medicare physician payment, and because surgery is not responsible for growth in Medicare physician expenditures, the AANS and CNS are seeking a new payment system that separates surgical services from others. This proposal is called the Service Category Growth Rate (SCGR) system. Under this proposal, four categories of physician services would be established: (1) preventive services and primary care evaluation and management; (2) other evaluation and management (all neurosurgical E&M services would fall under this category); (3) major procedures (those with 10-day or 90-day global service periods), including add-on surgical procedures (so-called ZZZ codes) and related anesthesia services; and (4) all other services including minor procedures, radiology services and diagnostic tests, and anesthesia services not paid under the physician fee schedule. If Congress adopts organized surgery’s proposal, neurosurgical reimbursement would increase by approximately 1.3-2.8 percent each year, with a cumulative 5-year increase of 6.5 to 14 percent. This compares with a 22 percent cut in 2010 and a 5-year cumulative cut under current law of 40 percent.

In addition to SGR reform, Congress is also exploring additional innovative Medicare payment models, such as bundling hospital and physician payments, gainsharing arrangements and accountable care organizations. The AANS and CNS support exploring innovative Medicare payment models that break down the current Medicare payment “silos,” which should help align incentives in a way that improves quality and saves money to the overall Medicare system. While many of these models are not yet fully tested and proven and therefore cannot be implemented in the near future, the AANS and CNS are supportive of legislation that supports pilot studies and demonstration projects to evaluate modifications to current payment systems that encourage — rather than discourage — collaboration and accountability among health care providers across treatment settings and sites of care.

Getting the Public Behind Surgery
To help promote our agenda, on March 24, 2009, organized surgery launched a new communications campaign. Spearheaded by the American College of Surgeons and involving a number of surgical specialty societies (including
the AANS and CNS), rural health organizations and other groups, the web-based campaign addresses a range of issues including surgical workforce shortages, emergency and trauma care and Medicare payment system reform. For more information about Operation Patient Access go to: http://operationpatientaccess.facs.org/

MEDICARE PHYSICIAN QUALITY REPORTING

Physician Quality Reporting Initiative
Since 2007, physicians who successfully report on quality measures have been eligible to receive Medicare bonus payments. While the AANS and CNS are committed to programs that truly improve quality surgical care, we have been skeptical that the current Medicare Physician Quality Reporting Initiative (PQRI) achieves this goal. Because Medicare is offering bonus payments for quality reporting, however, the AANS and CNS recommend that neurosurgeons evaluate whether the benefits outweigh the costs of participation. For 2009 and 2010, the PQRI bonus payment is 2 percent of all Medicare allowed charges.

There are now 153 quality measures, including four new measure groups, which simplify reporting by aggregating several measures that address similar clinical conditions. The new measure groups include encounters pertaining to Perioperative Care and Back Pain. While the measures that comprise each group can be reported as a group or individually, the four Back Pain measures are only reportable as a group due to their simplicity. Physicians need only to report a single G-code to indicate he/she met all the individual process measures included in a group. Detailed specifications for both individual and group measures, and additional details about the PQRI program are available on the Center for Medicare and Medicaid Services (CMS) web site at: http://www.cms.hhs.gov/pqri/

Quality Reporting is Here to Stay
There is no doubt that quality reporting is here to stay. Health care reform legislation will certainly include improving and expanding Medicare and other quality improvement initiatives, and Medicare providers’ (hospitals, physicians and others) reimbursement will increasingly be tied to quality. The AANS and the CNS believe, however, that the current PQRI program needs to be drastically reworked before it is expanded. Since its inception, we have voiced our concerns to Congress and CMS about the PQRI, including its burden on physicians, and its failure to improve quality of care. In particular, we have registered the following detailed concerns about (1) the proliferation of the number of quality and efficiency measures imposed on physicians without evidence of improved health outcomes and reduced system costs; (2) the lack of interim feedback reports during the course of the PQRI, which prevents participants from knowing whether they are successfully complying with program requirements; and (3) CMS’s proposal to move forward with public reporting before conducting a formal evaluation of the PQRI, before correcting the program’s many technical flaws, before having a mechanism in place to risk-adjust or otherwise validate data, and before testing which public reporting formats are most accurate and user-friendly.

Going Forward
To be successful, the AANS and CNS believe that performance measurement should be non-punitive and transparent. Furthermore, meaningful and accurate clinical outcomes and processes of care data must be generated by physicians. Finally, any performance measurement system must provide data to providers on how they compare with their peers, and this should be done in a confidential and non-punitive manner. To demonstrate our commitment to provide the highest quality surgical care to patients, our organizations are actively engaged in developing evidence-based and clinically relevant quality measures and the AANS and CNS recently established a clinical data registry – the NeuroPoint Alliance. We will be working with Congress and CMS to ensure that future quality programs are appropriately structured.

Improving the Emergency Medical System
The AANS and the CNS are working with the American College of Surgeons, American College of Emergency Physicians, Coalition of American Trauma Care, American Association of Orthopaedic Surgeons and the Orthopaedic Trauma Association on an emergency surgical legislative agenda that includes EMTALA-related liability protections, regionalization of emergency and trauma care, reimbursement for emergency department services, workforce and training issues and funding for trauma care systems. The following outlines the specific details of this agenda:

• Regionalization of Emergency Care by: (1) authorizing multi-year grants to support demonstration programs aimed at designing, implementing and evaluating regionalized emergency care systems; and (2) providing funding for the Trauma-EMS Systems Program.

• Improved Reimbursement for Emergency Services by: (1) providing physicians a tax deduction equal to the amount of the Medicare fee schedule payment; (2) providing a 10% added bonus payment through Medicare to all physicians, including on-call specialists, who provide EMTALA-related care to Medicare beneficiaries; (3) allowing all Medicare participating hospitals to include stipends paid to physicians providing emergency on-call services on their cost reports; (4) providing necessary funding to trauma centers that are at serious risk of closing due to the continual increase of uncompensated and charity care costs; and (5) establishing a dedicated federal funding source for payments to providers for uncompensated emergency healthcare services.

• Medical Liability Protections by: (1) requiring any lawsuits against physicians who provide EMTALA-mandated care be brought under the Federal Tort Claims Act; and (2) providing immunity or limited liability for certain medical personnel involved in the evacuation or treatment of patients during a declared state of emergency.

So far in the 111th Congress a number of bills have been introduced to advance this agenda. These bills, and other legislation important to neurosurgeons, can be accessed at the AANS/CNS Legislative Action Center http://capwiz.com/noc/issues/

More Information
The AANS/CNS Washington Office staff are always available to answer your questions and provide you with additional information about organized neurosurgery’s advocacy activities. To this end, please contact Katie O. Orrico, Director of the AANS/CNS Washington Office at korrico@neurosurgery.org or 202-446-2024.
IMPROVE TRAUMA SYSTEMS AND ACCESS TO NEUROSURGICAL EMERGENCY CARE

There are significant gaps in our trauma and emergency health care delivery systems, and trauma is the leading killer of Americans under the age of 44. The AANS and CNS are committed to working with Congress to develop and implement creative approaches to improve the emergency care system, including implementing a system to regionalize emergency care. As recommended by the IOM in its ground-breaking 2006 report, “the objective of regionalization is to improve patient outcomes by directing patients to facilities with optimal capabilities of any given type of illness or injury.” In addition, the AANS and CNS actively support increased funding for the HRSA Trauma-EMS Program, which provides grants to states to improve critically needed state-wide trauma care systems.

CHAMPION AN IMPROVED MEDICARE PHYSICIAN REIMBURSEMENT SYSTEM

Physicians face a 22 percent cut in Medicare reimbursement on January 1, 2010. Congress needs to avoid band-aid solutions for fixing the physician payment system and once-and-for-all replace Medicare’s Sustainable Growth Rate (SGR) formula with a stable mechanism for updating and reimbursing physicians. The new system must be fundamentally fair for all physicians, and any additional payments that are made to primary care physicians must not be budget neutral within the physician payment pool. The AANS and CNS are committed to working with Congress to pass a long-term solution to avert this significant cut and identify innovative approaches for reforming the Medicare payment system.

ENHANCE MEDICARE AND OTHER QUALITY IMPROVEMENT PROGRAMS

While Congress has taken the first steps towards implementing informed quality improvement programs, the current Physician Quality Improvement Program (PQRI) is not working and needs to be drastically reworked to better incorporate a system for clinical data collection and reporting. A “one-size-fits-all” approach will not accomplish the lofty goals that we all hope will be the end result of these quality-based initiatives — better patient outcomes. The AANS and CNS support a pay-for-participation system under which data regarding physician quality is collected in a non-punitive environment and analyzed using accurate risk-adjustment mechanisms; public reporting of data only occurs at the aggregate level and not at the individual level; and physicians receive performance feedback continually and in a timely manner.

INCREASE FUNDING FOR HEALTH CARE RESEARCH

Neurosurgeons are committed to advancing the public health by fighting diseases, developing treatments, and finding cures through continued medical research. Institutions such as the National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC) and the Agency for Healthcare Research and Quality (AHRQ) are leading the way to help improve our nation’s health and save lives. Organized neurosurgery also embraces the need for well-designed clinical comparative effectiveness research (CER), which can be a valuable tool to “learn what works in health care” and support
good clinical decision making. CER must focus on communicating research results to patients and physicians, and must not be used for determining medical necessity or making centralized coverage and payment decisions. The AANS and CNS urge Congress to provide adequate funding for these vital public health research programs.

PRESERVE QUALITY RESIDENT TRAINING AND SAFE PATIENT CARE
Concerns about resident fatigue must be balanced with the need to adequately train neurosurgical residents and ensure quality patient care. The AANS and CNS believe that further reductions in resident work hours will have a negative impact on resident training and education and will produce a generation of neurosurgeons who will not be as skilled or committed as their predecessors and will fall short of public expectations. In addition, adherence to strict work hours can lead to medical errors attributable to more frequent patient handoffs, fragmentation and loss of continuity of care. The Accreditation Council for Graduate Medical Education (ACGME) is effectively addressing these issues and legislation on this matter is therefore unnecessary.

ALLEVIATE THE MEDICAL LIABILITY CRISIS
The AANS and CNS support legislation to provide common sense, proven, comprehensive medical liability reform. Federal legislation modeled after the laws in California or Texas, which includes reasonable limits on non-economic damages, represents the “gold standard,” but other solutions should also be explored. A first step would be to apply the Federal Tort Claims Act to EMTALA-mandated services. EMTALA, the Emergency Medical Treatment and Labor Act, is a federal mandate to provide emergency care and puts neurosurgeons at an increased liability risk. Congress should also study alternatives to civil litigation, including: early disclosure and compensation offer; the administrative determination of compensation model; and health courts.

ADVANCE MEASURES TO IMPROVE NEUROSURGICAL WORKFORCE
While neurosurgery continues to fill its residency slots across the nation, the federally funded positions have not kept pace with the growth in U.S. population, particularly the Medicare population. The future supply of all surgical specialists is woefully inadequate to provide the care that our Nation will require. Training a health care workforce to successfully serve the needs of the nation requires stable, long-term predictable funding given the length of time required to educate and train physicians - 6-8 years for neurosurgical training. The AANS and CNS support preserving Medicare funding for Graduate Medical Education (GME) and eliminating the residency funding caps that were established by the Balanced Budget Act of 1997. In addition, Medicare should fully fund residency programs through at least the initial board eligibility — in neurosurgery’s case 6 years.

SAFEGUARD PATIENT ACCESS TO SPECIALTY CARE IN HEALTH CARE REFORM
Health care reform must ensure that every patient has access to appropriate quality care, by the appropriate doctor, at the appropriate time. The AANS and CNS believe it is imperative that all health care reform proposals ensure that patients have timely access to the doctor of their choice.

PROTECT PATIENT-CENTERED HEALTHCARE
Diagnostic imaging is an integral component of neurosurgical care, and the ability of neurosurgeons to provide in-office diagnostic imaging services to their patients ensures they get the best possible and timely care available. Ambulatory Surgery Centers (ASCs) and physician-owned specialty hospitals provide cost-effective care; have low infection, complication and mortality rates; and produce a marked increase in patient satisfaction. The AANS and CNS urge Congress to protect patient access to these services. ☑

For More Information Contact:
Adrienne A. Roberts, Senior Manager for Legislative Affairs
AANS/CNS Washington Office
725 15th Street, N.W., Suite 500
Washington, DC 20005
Office: 202-628-2072
Email: aroberts@neurosurgery.org
The American Association of Neurological Surgeons was founded in 1931 and is dedicated to advancing the specialty of neurological surgery in order to promote the highest quality of patient care. The Congress of Neurological Surgeons was founded in 1951 and exists to enhance health and improve lives worldwide through the advancement of education and scientific exchange. The AANS and CNS are the two largest scientific and educational associations for neurosurgical professionals in the world and represent approximately 4,000 neurosurgeons in the United States. Neurosurgery is the surgical specialty concerned with the prevention, diagnosis, treatment and rehabilitation of disorders that affect the spinal column, spinal cord, brain and peripheral nerves.
The Congress of Neurological Surgeons (CNS) recently concluded a comprehensive international search process for the next Editor of our official journal, *NEUROSURGERY*. We are proud to announce that Dr. Nelson Oyesiku has been selected as the Editor of *NEUROSURGERY*, effective July 1, 2009.

Eleven extraordinarily well-qualified candidates submitted applications to the CNS. Each application was thoroughly considered over an extended period. This included careful analyses of each candidate’s submitted data, including written and verbal vision statements, letters of recommendation, curriculum vitae, and responses to detailed written inquiries. Additionally, numerous neurosurgical leaders in the domestic and international communities were consulted throughout the process.

The CNS would like to thank publicly the other candidates, along with the several hundred individuals who assisted the CNS in this six month process, for their unwavering assistance and support to the journal and the CNS.

Please join us in congratulating Dr. Oyesiku on his selection.

P. David Adelson, MD, FACS
President
Congress of Neurological Surgeons

Anthony L. Asher, MD, FACS
Past-President
Congress of Neurological Surgeons and Committee Chair
The neurosurgical community must adapt to ongoing trends that are affecting communication and the use of broadband technology for educational purposes. Several factors are impacting these aspects of education, especially for neurosurgery (See table).

First, the rapid advent of technology is creating new devices and fostering the development of new procedures. In my own practice, I learned less than half of my current surgical procedures and techniques during my residency; most of what I do in the operating room pertains to procedural knowledge and techniques that have been acquired since then. In addition, the pace of technology and device development is increasing, and it is likely that an even greater percentage of neurosurgical practice will involve new technologies in coming years. These new technologies are also emanating from other specialties, such as endovascular, radiosurgery, orthopedics and minimally invasive surgery.

On the other hand, the current process for training neurosurgeons on new procedures is unregulated and highly variable, ranging from single-day courses to non-certified fellowships. There is a growing international market for procedural education, and a great opportunity for the application and dissemination of technical expertise and knowledge from developed countries to new and developing markets. In short, there remains a tremendous unmet need and opportunity for the wide-scale edu-

Table: Factors Impacting Neurosurgical Education

- New technology and new devices are creating new surgical procedures.
- Pace of technology development is increasing.
- Technologies and procedures from other specialties are being applied in neurosurgery.
- Current process for neurosurgical training in new procedures is unregulated and variable.
- International market for procedural learning is growing.
- Travel and time away from work are resource- and cost-inefficient.
cation of practicing neurosurgeons in the art and science of neurosurgical techniques utilizing novel technologies.

A second trend in neurosurgical procedures relates to the integration of information occurring at the procedure site. Operating rooms are no longer simply lights, a table and instruments, but rather have become technologically advanced suites where imaging, teaching and communication are highly integrated. The surgeon remains at the center of this electronic data and image transfer network, which integrates electronic medical records, intra- and preoperative images, real-time neurophysiology and a vast database of outside information. Increasingly, this information can be telecommunicated from the procedure suite to external sites for education, consultation and direct interaction by other members of the healthcare team. In this sense, the neurosurgical operating room has become a neuroscience intervention suite, which can exist in the operating room setting, the interventional radiology suite, the ambulatory surgery setting or possibly the surgeon’s office. High bandwidth communication among such procedure suites and the rest of the world is integral to future neurosurgical procedural teaching.

To accomplish these goals at Swedish
Neuroscience Institute, we have developed a series of fully integrated procedural suites linked to an advanced teaching center, which is ultimately linked to the entire world through a high bandwidth network of fiber optic cable. The procedure rooms include interoperative imaging (MRI, cranial CT and spine CT), high resolution ambient and microscope/endoscope cameras, biplane angiography, embedded navigation systems, electronic access to electronic medical records and pre-existing images and a fully-integrated system which enables compilation of the various information sources by touch screen accessible to the surgeon. These integrated procedure suites are interconnected and directly linked to a state-of-the-art, hands-on bioskills training center and telecommunication site.

The Seattle Science Foundation was created as a not-for-profit educational center to facilitate global education of physicians and surgeons in the newest technologies and procedures. It consists of a learning center, a business center and a hands-on cadaver and live animal procedural bioskills facility, all of which are constructed within a high definition broadcast studio (Figure 1).

The Seattle Science Foundation also extends the concept of hands-on training by leveraging current capabilities in electronic telecommunication. This telecommunications and teaching center/broadcast studio is directly linked to the Global Lambda network, which is an academic-based series of high bandwidth fiber connections which stretch around the world (Figure 2C). Within Seattle, these connections link the Seattle Science Foundation to data centers at the University of Washington and Microsoft (Figure 2A). Importantly, the facility is also linked to extensive computer server farms located in Eastern Washington at the site of abundant hydroelectric power (Figure 2B). These computer server farms have the capability to store and catalog immense amounts of audiovisual information, so that all education interactions occurring at Seattle Science Foundation are recorded, cataloged and stored for subsequent search and distribution. Finally, this broadband network extends throughout the world via major academic hubs. It is likely that within the coming decade such high bandwidth connections will extend to the residential setting and be readily accessible through portable wireless devices.

Full utilization of the integrated procedural suite and the procedure-oriented telecommunications teaching center will significantly change the current paradigms for neurosurgical education. For example, the expense and carbon footprint for a Pacific Rim neurosurgeon to travel to the United States for procedural education is not sustainable in the future. In utilizing the new technology opportunities, long-distance procedural education can occur through initial high resolution haptic simulators, direct observation of high bandwidth video for live or recorded procedures, expert proctoring of the student during initial procedures or simulated procedures and ongoing consultation with the expert regarding case selection and approaches. Such long distance learning is likely to replace the current model and facilitate the development of social networking sites that enable the sharing of procedural skills among surgeons. In this sense, the larger neurosurgical community will become interactive wiki-partners in an electronic virtual classroom, with unlimited storage of cataloged audiovisual data, and Google-like capacity to instantly search and review procedural education material from multiple sources. This information will be instantly accessible through wireless devices, and can be brought directly to the procedural suite for real time intraoperative review.

In summary, the pace of technology is driving a revolution in procedural education for all surgeons, particularly neurosurgeons. As a greater percentage of procedural skill will be derived after residency training, it is imperative to develop facilities and processes to facilitate procedural learning by neurosurgeons. These facilities must capitalize upon opportunities for electronic communication which will enable a high resolution, real time transmission and storage of images instantly around the world. This capability to telecommunicate will lead to a broadband community in which teleeducation and group participation become the norm. It is important for neurosurgeons and neurosurgical organizations to recognize these trends and to design and utilize the systems which will ensure quality and consistency in educational endeavors.

Figure 2: The Global Lambda Network is a system of high-bandwidth fiber optic connections, linking Seattle Science Foundation (James Tower) to (A) local institutions; (B) unlimited data storage facilities in Eastern Washington; and (C) academic centers around the world.
An otherwise healthy 42-year-old man was operating a forklift when a cable attached to an industrial hook snapped, causing the hook to recoil 50-feet toward him, impaling his left orbit. The patient’s Glasgow Coma Score was 15, but he was amnestic to details of the accident. He had a large (12 cm x 8 cm x 2 cm) steel hook firmly lodged in his left medial orbit between the globe and nose in the region of the ethmoid sinus, causing left eye proptosis (Figure 1). His right pupil was unreactive to light and his left could not be assessed. He had no additional neurologic deficits. Non-contrast head CT revealed that the hook extended from the left frontal sinus to the level of the hard palate and posteriorly into the sphenoid sinus (Figure 2). There were multiple displaced cranial fractures resulting in compromise of the right optic canal, as well as bony fragments lodged in the left frontal lobe.

Following surgery for removal of the hook and facial reconstruction, the patient had absent vision in the right eye and impaired vision in the left eye, which improved to 20/25 on his last follow up. The final cosmetic result is shown in Figure 3.