

AMERICAN ASSOCIATION OF NEUROLOGICAL SURGEONS

BULLETIN

The Socioeconomic and Professional Magazine for AANS Members • Volume 16 Number 2 • Summer 2007

**BUILDING
A NEW
KIND OF
PRACTICE**

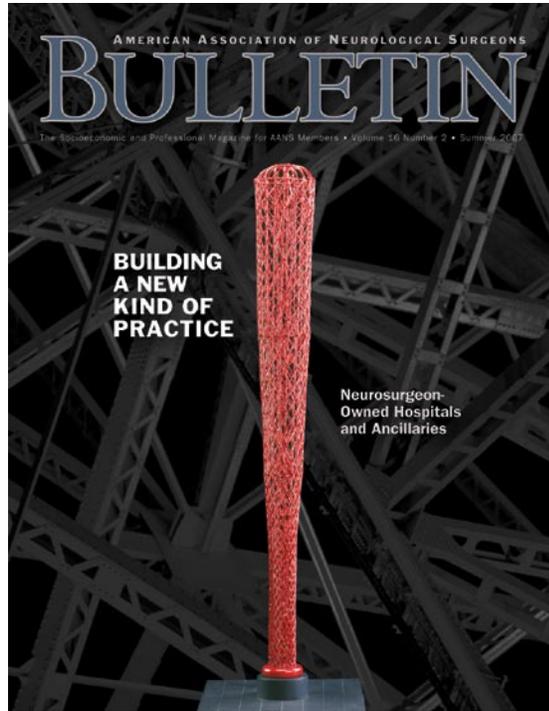
**Neurosurgeon-
Owned Hospitals
and Ancillaries**



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Claes Oldenburg and Coosje van Bruggen, "Study for Batcolumn," 1975, steel painted with enamel, 39 1/2 x 12 x 12 in. See page 6 for complete information.



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AANS MISSION

The American Association of Neurological Surgeons (AANS) is the organization that speaks for all of neurosurgery. The AANS is dedicated to advancing the specialty of neurological surgery in order to promote the highest quality of patient care.

AANS BULLETIN

The official publication of the American Association of Neurological Surgeons, the *Bulletin* features news about the AANS and the field of neurosurgery, with a special emphasis on socioeconomic topics.

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Articles or article ideas concerning socioeconomic topics related to neurosurgery can be submitted to the *Bulletin*, bulletin@AANS.org. Objective, nonpromotional articles that are in accordance with the writing guidelines, are original, and have not been published previously may be considered for publication.

The AANS reserves the right to edit articles for compliance with publication standards and available space and to publish them in the vehicle it deems most appropriate. Articles accepted for publication become the property of the AANS unless another written arrangement has been agreed upon between the author(s) and the AANS.

PEER-REVIEWED RESEARCH

The *Bulletin* seeks submissions of rigorously researched, hypothesis-driven articles concerning socioeconomic topics related to neurosurgery. Selected articles are reviewed by peer-review panelists. Papers must comport with the writing guidelines at www.aans.org/bulletin.

Peer-Review Panel led by Deborah L. Benzil, MD
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LETTERS

Send your comments on articles you’ve read in these pages or on a topic related to the practice of neurosurgery to bulletin@AANS.org. Correspondence may be published in a future issue edited for length, clarity and style. Correspondence is assumed to be for publication unless otherwise specified.

BULLETIN ONLINE

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American
Association of
Neurological
Surgeons

Reason for Optimism

Annual Meeting Epitomizes the AANS Core Mission

With the historic and record-breaking 75th AANS Annual Meeting still fresh in my mind, I find it easy to feel optimistic about the intertwined futures of neurosurgery and the AANS. While our profession currently is facing many ills, and the AANS is addressing them diligently at every level, the diamond jubilee celebration in April served as welcome reminder of the many facets of which our profession justifiably can be proud.

Almost all aspects of the meeting centered on neurosurgical education, an area in which the AANS excels. Among the new and successful aspects of this meeting were the new plenary session lecture named for the first woman AANS president, Louise Eisenhardt, and the expansion of the socioeconomic sessions from one to four days.

Reflecting on this gathering of colleagues—superlative individuals focused on obtaining the latest information and techniques that will help their patients—I am reminded of a AANS founder's account, located in Fulton's Cushing biography, of the first meeting in 1932: "[Cushing] then operated in the large amphitheater before the entire group, exposing a third-ventricle tumor through a transcortical incision and removing a large part of it." Fulton noted that the patient was married a short time after her surgery and was "living and well with a family of two children" in 1945.

While the drama of the surgery at that first meeting is only echoed in today's hands-on practical clinics, some things haven't changed in 75 years: We still have the privilege of doing important, intellectually stimulating work that matters greatly to our patients and their families.

To enable the best of the best to continue performing at the highest level, the AANS today offers its members top-notch learning opportunities, including meetings, courses, and now four scientific journals. Two of the newer educational offer-

ings are the Neurosurgical Online Learning Sessions and the Medical Student Summer Research Fellowships.

The Neurosurgical Online Learning Sessions, developed by the AANS and the Society of Neurological Surgeons, offer AANS

Jon H. Robertson, MD, is the 2007–2008 AANS president. He is a practicing member of the Semmes-Murphey Neurologic and Spine Institute in Memphis, Tenn.



and SNS members free and convenient courses in the cognitive core curriculum of neurosurgery. Designed principally for resident education, the 30-to-60-minute courses also can be a valuable learning tool for physician assistants, nurses, or neurosurgeons who wish to review areas they might not see regularly in their practice. Introduced as a pilot program, the early success of the online sessions bodes well for the future development of additional modules.

The AANS Medical Student Summer Research Fellowships seek to interest top medical students in neurosurgery careers. Students in the United States or Canada who have completed one or two years of medical school can spend a summer working in a neurosurgical laboratory mentored by a neurosurgical investigator who is a member of the AANS. In this, the program's inaugural year, the AANS received an overwhelming amount of applications and awarded 10 fellowships, a number expected to expand to 15 next year.

As in neurosurgery's early days, mentors play an integral role in attracting and retaining highly qualified physicians. Those who doubt this truth need only spend a few moments remembering their own training or reading colleagues' reminiscences

I am proud to say that in its 76th year the AANS is focused on and dedicated to its core mission of education.

recorded in the AANS *Bulletin's* "Inspirations and Epiphanies" features during the AANS 75th anniversary year. The AANS formalized mentoring in 2005 through its Resident Mentoring Program, which pairs residents with seasoned neurosurgeons who offer fresh perspectives on the practice of neurosurgery.

AANS neurosurgical education thus is concentrated on the core of members and now is broadened to medical students. To attract the greatest number of qualified candidates and to enhance the climate for practicing neurosurgery, educating the general public about the many ways neurosurgeons are helping patients also is necessary.

The 75th AANS Annual Meeting and the concurrent National Neurosurgery Awareness Week generated media attention that brought neurosurgery to a record audience of nearly 900 million people. Keeping positive messages about neurosurgery alive is important all year long, and individual neurosurgeons can further this cause by contributing patient success stories to the AANS public Web site, www.NeurosurgeryToday.org and by taking part in local media opportunities. The AANS offers members media assistance in the Resources area of www.MyAANS.org and is planning more tools as well.

I am proud to say that in its 76th year the AANS is focused on and dedicated to its core mission of education. I hope you will plan now to join me for the premier educational event in 2008: the 76th AANS Annual Meeting in Chicago, April 26–May 1. The meeting will cap a year in which the AANS will work diligently to give neurosurgery reason for optimism. ■

NEWSLINE

News Members Trends Legislation

Neurosurgeon

Appointments Increase

Scope of AANS Influence

Jeffrey W. Cozzens, MD, was appointed by the AMA's Board of Trustees to the CPT Editorial Panel. Paul C. McCormick, MD, was appointed to the FDA Orthopaedic and Rehabilitation Devices Panel. Philip W. Tally, MD, was appointed to the AMA Health Information Technology Group. John K. Ratliff, MD, was elected as a member-at-large to the Governing Council of the AMA Young Physician's Section.

- **New Brain Trauma Guidelines Published** The third edition of the Guidelines for the Management of Severe Traumatic Brain Injury was published in the May 2007 supplement to the Journal of Neurotrauma. Six new topics were added for a total of 15 chapters, making the third edition substantially different from the previous editions. The guidelines incorporate the latest published research findings relevant to the diagnosis and treatment of severe traumatic brain injury, and they are nationally recognized and referenced by many of the leading trauma centers in treatment of patients with traumatic brain injury. Developed by the Brain Trauma Foundation in association with the AANS, the Congress of Neurological Surgeons, and the AANS/CNS Section on Neurotrauma and Critical Care, the guidelines are available at www.braintrauma.org.
- **Legislation for Alternative Medical Liability Systems Introduced in U.S. Congress** On May 24 legislation that would provide states with federal grants for establishment of demonstration programs to analyze whether alternative medical liability reforms such as health courts could improve the current litigation climate was introduced in the U.S. Congress. In the Senate the Fair and Reliable Medical Justice Act, S. 1481, was introduced by Finance Committee Chair Max Baucus, D-Mont., and Health, Education, Labor and Pensions Committee Ranking Member, Michael Enzi, R-Wyo., and in the House, H.R. 2497 was introduced by Jim Cooper, D-Tenn, and Mac Thornberry, R-Texas. The AANS and the CNS submitted a letter to the four original sponsors thanking them for providing "states with critical financial support to examine and test alternatives to the current tort system efforts to encourage innovative solutions to the broken medical liability system." The letter noted that the AANS and CNS "favor comprehensive federal legislation, patterned after the laws in California or Texas, which includes, among other things, reasonable limits on noneconomic damages."
- **CMS Proposes Noncoverage for Lumbar Artificial Disc Replacement in Patients Over Age 60** On May 16 the Centers for Medicare and Medicaid Services issued a proposed decision memorandum that found lumbar artificial disc replacement to be unreasonable and unnecessary for the Medicare population over 60 years of age. For Medicare beneficiaries 60 years of age and under, there is no national coverage determination, leaving such determinations to be made on a local basis. After considering public comments and any additional evidence, the CMS will make a final determination and issue a final decision memorandum. A decision is expected in late August. For additional information, go to <http://www1.cms.hhs.gov/mcd/viewtrackingsheet.asp?id=197>.
- **New Quality Program to Recognize Providers of Low Back Pain Care** In April the nonprofit National Committee for Quality Assurance launched the Back Pain Recognition Program, which recognizes physicians and chiropractors who provide high-value, patient-centered care to those with low back pain. Neurosurgeons worked with the NCQA to develop standards for the program and to make the program less onerous. To apply for recognition under the Back Pain Recognition Program, participants submit data related to 13 clinical measures and three structural standards for a sample of patients: 35 patients for one provider seeking recognition, or 25 patients per provider for those in group practices of two to eight at a single site. Participants pay a \$530 fee, which covers the application and the data collection tool used to assess performance. Those who achieve recognition will be listed in the NCQA's online directory and cited in consumer Web sites and provider directories offered by health plans and employers. Recognition also may be used to establish eligibility for pay-for-performance bonuses. Some health plans additionally intend to assist participants with data collection and offer financial incentives. There currently are more than 115 "early adopters" in the program. Additional information is available on the NCQA Web site, <http://web.ncqa.org/tabid/137/Default.aspx>.

Send news briefs for
Newsline to bulletin@AANS.org.

Emigration Experience

Teaching Hospital Suffers When Specialties Ship Out

Clearly the impetus for physicians to invest in ancillary facilities, be they imaging facilities, ambulatory surgery centers, or full-blown specialty hospitals, is waning professional reimbursement and lack of physician control over what they feel is mismanagement by an increasingly bureaucratic and bloated administrative structure. These are common motivations in both private practice and academic settings.

In my own academic medical center, a series of developments that have occurred illustrate nicely both sides of the debate over whether or not physician-owned facilities and services are a good thing. Being an academic medical center with a rich history of entrepreneurial spirit (including pharmaceutical and biotech spin-offs), there has been a tradition of business-minded specialties gaining independence.

The first was ophthalmology, which with the help of philanthropy and good business sense developed a freestanding facility 12 years ago. Since that time, the ophthalmology department (in partnership with the medical school) controlled charges and revenues as well as the professional revenues of this clinic and operating facility. Since this was a very lucrative business (especially the surgery portion, considering the facility revenues), the department has since expanded and opened up a building that is some three times the size of the original facility.

The next service line to gain independence was cancer care, thanks to a wealthy benefactor who donated a significant amount of money to build a combined research institute and cancer hospital. This hospital effectively has peeled away the well-insured portion of the surgical and medical oncology business from the main university hospital (because there is no emergency room at the cancer hospital, the underinsured patients are preferentially admitted to the university hospital). In addition, radiation oncology, classically

a primary source of revenue for hospitals, has moved its base of operations to the cancer hospital. The most recent emigration was, as one might predict, orthopedics. Approximately one-half of orthopedics' total surgical volume (all outpatient procedures, including simple spine) and all orthopedic clinic business was decanted into the orthopedic facility, which has the capability to provide care for overnight admission.

All of these entities, with the original blessing of the medical school and CEO of the hospital, have become or are in the process of becoming financially independent

William T. Couldwell, MD, PhD, is editor of the AANS Bulletin. He is professor and Joseph J. Yager Chair of the Department of Neurosurgery at the University of Utah School of Medicine.



and successful. They have reaped the benefits of an improved payer mix, the efficiencies of running specialty operating rooms, and the growth in their respective academic faculty. However, the university hospital, as an independent financial enterprise, is now struggling for capital to facilitate much-needed expansion. All of the loss leaders in a medical school—poorly reimbursing medical specialties such as endocrinology, neurology, trauma services, and others—that require subsidization for solvency but are necessary for student education and comprehensive training programs are now being supported by resources that are generated by vanishingly fewer specialties in the university hospital.

Neurosurgery and some other surgical subspecialties (heart surgery, for example) are now shouldering much of the facility cross-subsidization necessary to provide

Ironically, I now find myself—entrepreneurial, an advocate of hard work, free enterprise and competition—helping to lead the charge within the medical school for a social consciousness that will support those medical services which fulfill vital educational and tertiary healthcare needs.

comprehensive programs in a full-service academic institution. While most spine practices may thrive in a specialty hospital, cranial neurosurgery is heavily invested in the general full-service hospital. Cranial surgery requires access to the neuro-interventional subspecialists, intensive care units, critical care specialists, emergency room, and tertiary imaging modalities, and thus will not in the near future be amenable to an ambulatory surgery center approach.

It has become very apparent to the medical school leadership that the community as a whole must support and nourish the Mother Ship. Ironically, I now find myself—entrepreneurial, an advocate of hard work, free enterprise and competition—helping to lead the charge within the medical school for a social consciousness that will support those medical services which fulfill vital educational and tertiary healthcare needs. Such a consciousness and support are necessary for neurosurgery to thrive, to help care for the underinsured, and to train our next generation of surgeons. ■

BUILDING A NEW



Claes Oldenburg and Coosje van Bruggen, "Study for Batcolumn," 1975, steel painted with enamel, 39 1/2 x 12 x 12 in., Smithsonian American Art Museum, transfer from General Services Administration. Copyright Claes Oldenburg and Coosje van Bruggen, 2007. Photo credit: Smithsonian American Art Museum, Washington, D.C./Art Resource, N.Y. Readers can view the 100-foot-tall "Batcolumn" (1977) during the 2008 AANS Annual Meeting in Chicago, April 26–May 1. Installed in the plaza of the Harold Washington Social Security Administration Building, 600 W. Madison St., this sculpture of gray-painted Cor-Ten steel is one of more than 30 major outdoor artworks in Chicago's downtown "Loop" area alone.

KIND OF PRACTICE

Neurosurgeon-Owned Hospitals and Ancillaries

HOSPITALS and ancillary services such as X-ray, MRI and other imaging services have long been integral to neurosurgical practice. Neurosurgeon ownership of these facilities, however, is a relatively new development. To further discussion and understanding of the complex issues involved, the *Bulletin's* cover section explores many of the issues related to physician-owned hospitals and ancillary services. • Two former AANS presidents, Stan Pelofsky and Robert Ratcheson, face off with compelling arguments for and against further development of physician-owned specialty hospitals. As one among the approximately 25 percent of neurosurgeons who own in-office ancillary services, Tom Kopitnik shares his practice's experience of launching an imaging center and provides a financial framework for those considering a similar venture. The legal issues that currently impact physician ownership of ancillary service facilities are explored by Dave Atteberry and colleagues. • Whether one views such neurosurgeon ownership as a welcome innovation, as a departure from professionalism, or simply with a healthy curiosity, it seems certain that the disincentives of government regulation in this area are being counteracted by powerful incentives to bolster shrinking reimbursement by adding revenue streams while gaining greater quality control over areas of patient care. Given the recent trend toward aligning reimbursement with quality patient care, neurosurgeon-owned hospitals and ancillaries may be an idea that's here to stay.



Physician-Owned Specialty Hospitals: A Great Idea

Neurosurgeons Should Create and Own Spine Hospitals

STAN PELOFSKY, MD

Physician-owned specialty hospitals raise the bar, encourage competition, pay significant taxes, employ significant numbers of people, and create new businesses. More important, however, is that patients, staff and physicians embrace these hospitals because they are wonderful environments in which to give and receive care.

Physician-owned specialty hospitals have been the subject of intense scrutiny in the last few years. In 2003, the U.S. Congress passed the Medicare Prescription Drug Improvement and Modernization Act. The MMA imposed an 18-month moratorium on referrals of Medicare and Medicaid patients by physician-investors in specialty hospitals. Congress required the Medicare Payment Advisory Commission, MedPAC, in consultation with the General Accounting Office and the Department of Health and Human Services, to conduct an in-depth study concerning specialty hospitals and report the findings to Congress.

Specialty hospitals were shown to provide:

- improved and cost-effective care;
- lower infection rates;
- lower complication and mortality rates;
- shorter hospital stays; and a
- marked increase in patient satisfaction.

Further study results have led MedPAC to conclude that there is not evidence that physician ownership and referral to specialty hospitals lead to inappropriate utilization.

Other studies on specialty hospitals have shown that they encourage the competition—namely, community hospitals and medical centers—to deliver higher quality, more efficient, and innovative healthcare. A study for the Centers for Medicare and Medicaid Services performed by RTI International Affairs revealed that specialty hospitals contribute substantial tax revenue to the community. In fact, the RTI study reported that the total proportion of net revenue that specialty hospitals devoted to both uncompensated care and taxes exceeded the proportion of net revenue that community hospitals devoted to uncompensated care.

In addition, specialty hospitals are supported

by the American Medical Association and the American College of Surgeons and by economist Regina Herzlinger, author of *Market-Driven Healthcare: Who Wins, Who Loses in the Transformation of America's Largest Service Industry*.

After the congressional studies were reviewed and analyzed, the moratorium on specialty hospitals was allowed to expire earlier this year. In other words, the window of opportunity is now open for neurosurgeons to develop and own neurosurgical specialty spine hospitals.

Why Neurosurgeons Should Create and Own Spine Hospitals

While owning a specialty hospital such as a spine facility has many benefits, the two main advantages involve control and reimbursement.

Control When neurosurgeons own a specialty facility such as a spine hospital, they literally control every aspect of the quality of care each patient receives. The neurosurgeon-owners choose the technology they want in the operating room, and they select the personnel who will assist with that technology and care for patients preoperatively and postoperatively.

The neurosurgeon-owners control the policies of the hospital, which allows for more control over their own professional lives.

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Physician-owned specialty hospitals raise the bar, encourage competition, pay significant taxes, employ significant numbers of people, and create new businesses.



Physician-Owned Specialty Hospitals: Not Such a Good Idea

With Specialty Hospitals, Society Suffers

ROBERT A. RATCHESON, MD

Physician ownership of specialty hospitals is complex, breeds contentiousness and is ethically challenging. While I do not believe that physician-owned hospitals serve the best interests of society or of neurosurgeons, the impetus for their development is not hard to understand. The leaders of large academic and community hospitals frequently have been unresponsive to physicians and their concerns, unfair in their dealings and resistant to change. They often dislike our new ideas and have different concepts of efficiency. They resist aligning incentives and increasingly appear obsessed with profit. They will not hesitate to compete with physicians if they believe that doing so is in their interest.

Nevertheless, one can reasonably question whether the unfavorable actions of some hospital administrators toward physicians are sufficient justification for physicians to compete with and in some cases bring down large general hospitals. Motivation alone is not an acceptable rationale for action, and it is unlikely that physicians are justified in believing that what is good for them is good for society.

A fair number of articles and editorials have been published about physician-owned specialty hospitals. The authors primarily are lawyers, academic and governmental healthcare experts and agents of hospitals; they are physicians less frequently. The literature lacks compelling data and it is dull, redundant, and politically correct. Most conclusions are unsurprising and intuitive. Reports from the Medicare Payment Advisory Commission and the Centers for Medicare and Medicaid Services, generated at the request of Congress, have been constrained by lack of time and data and employ an unclear methodology. They gloss over some really important aspects—for example, the effect of specialty hospitals' upon critical problems such as emergency services and on-call issues. There are some agreed upon facts; however, like politics, most hospital situations are local and what is true for some physician-owned specialty hospitals may not be true for all.

Three factors primarily influence physicians to create specialty hospitals: (1) the desire of physicians to control management decisions that affect their productivity and the quality of care delivered

to patients; (2) the high reimbursement for certain procedures; and (3) the desire of physicians to increase their income in the face of declining reimbursement and increasing financial attack.

Proponents of physician-owned specialty hospitals have their points: Patients are offered a highly trained staff and greater efficiency. There is most likely decreased waiting time and convenient parking. For physicians, there is greater control over the workplace including the operating room schedule, and support staff is trained for individual needs resulting in increased productivity. Patients have better insurance and physicians have more input into decision-making. Clearly, another attraction is the generous return on physicians' capital.



Physician ownership of specialty hospitals is complex, breeds contentiousness and is ethically challenging.

Granting that there are benefits for physicians and their selected patients, an important question is why can't these benefits be made available to all without physician ownership of a hospital and the attendant problems?

What's Wrong With Physician-Owned Specialty Hospitals? Some Facts

Physician-owned specialty hospitals do not provide lower cost care. Overall they handle less severe, healthier, and more profitable cases, cases which they siphon off from community hospitals. Specialty hospitals cherry pick patients. Most of their revenue is from private payers, and in areas where specialty hospitals have emerged there has been a trend toward an increased per capita surgical rate for specific profitable diagnosis related groups and an increased use of ancillary services. Physician investors do very well and some have made millions from their investments.

Continued on page 11

Pelofsky, continued from page 8

Streamlined policies can eliminate unnecessary, time-consuming meetings; allow for rapid intraoperative turnover times and ping-ponging; and lead to a much more productive work environment. Neurosurgeon-owners hire their own CEOs and decide how much to pay administrators. This reduces the number of “suits” who run around with clipboards and dictate policies, but who never admit a patient or take calls in the middle of the night.

Neurosurgeon-owners control the outsourcing of all support devices utilized by the hospital, so that money is not thrown down a deep dark hole for such things as unnecessary advertising or marketing campaigns. At the Oklahoma Spine Hospital in Oklahoma City, advertising is accomplished when satisfied patients are discharged from the hospital with their own OSH T-shirt, and

expenses. The sky really is falling! Professional liability insurance premiums increase even as neurosurgeons work harder, pedal faster, and lose ground in their attempts to make a living for themselves and their families.

In addition, Medicare reimbursement since 1997 has significantly decreased. For example, reimbursement for anterior cervical fusion, code 22554, fell from \$1,662 in 1997 to \$1,282 in 2006. How could this happen, even as the costs associated with this procedure increased? Reimbursement for lumbar discectomy, code 63030, dropped from \$1,205 in 1997 to \$847 in 2006. Reimbursement for a posterior lumbar interbody fusion, code 22630, was \$1,705 in 1997 and only \$1,417 in 2006.

Medicare reimbursement is the benchmark for other insurance products, so declining Medicare reimbursement spills over into all reimbursement, making it difficult for neurosurgeons to maintain income. But unlike Medicare physician reimbursement, hospital or diagnosis-related group reimbursements have increased 5 percent to 6 percent virtually every year since 1997. The hospitals are getting more; the neurosurgeons are getting less. A hospital receives \$12,341 for an anterior cervical fusion; \$6,730 for a lumbar discectomy; and about \$19,253 for a posterior lumbar interbody fusion. These reimbursement rates reflect increases since 1997. Therefore, by owning a neurosurgical spine hospital neurosurgeons not only can provide superb patient care but also can share in any profits that the hospital receives for all procedures performed at the hospital.



Unlike Medicare physician reimbursement, hospital or diagnosis-related group reimbursements have increased 5 percent to 6 percent virtually every year since 1997. Therefore, by owning a neurosurgical spine hospital neurosurgeons...can share in any profits that the hospital receives for all procedures performed at the hospital.

then spread the word to friends and family members about their wonderful experience at our hospital. This kind of advertising is virtually free, but it is most effective.

Control is power, and this control allows neurosurgeon-owners of spine specialty hospitals to perform at the highest possible professional standard, provide the best quality of care for patients, and enjoy a high quality personal life.

Reimbursement In the current medical climate, there is seemingly no floor to reimbursement and no ceiling to neurosurgical

The Oklahoma Spine Hospital is a great example of a spine specialty hospital that is doing things right. We have assembled 25 fine, highly skilled neurosurgeons, orthopedic spine surgeons, and pain specialists, and we have hired a dedicated and professional staff that offers the quality of care that patients expect and deserve. Our hospital has paid millions of dollars in federal taxes, state income taxes, property taxes, and payroll taxes, and it has employed approximately 145 people. More than 7,000 complex spinal operations, peripheral nerve surgeries, dorsal column stimulator placements, and pain management procedures have been performed. Our hospital patient satisfaction rating is 97 percent, the infection rate is 0.139 percent, and the staff turnover rate is only 2 percent.

In summary, at Oklahoma Spine Hospital, we did it; so can you. Specialty hospitals represent the future and America at its best! ■

Stan Pelofsky, MD, a physician-owner of Oklahoma Spine Hospital, established practice with Neuroscience Specialists in 1973. He is the 2001–2002 AANS president.

Ratcheson, continued from page 9

Specialty hospitals provide far less charity care than community hospitals and deliver less care to Medicaid patients, in fact, 94 percent less; clearly, they are not contributing their fair share to society in this respect.

Physician-owned specialty hospitals do not provide appropriate emergency services and in many areas they exacerbate problems of emergency care delivery. Many specialty hospitals do not have emergency rooms; some states mandate that they must, but even those emergency facilities are not full service. In fact, when calling the emergency line of some specialty hospitals, the recorded response is to inform the patient that the call should be directed to a full-service hospital. Many specialty hospitals are unable to manage all complications. As pointed out in the April 2 New York Times, some specialty hospitals have managed postoperative, in-house complications—in some cases with fatal consequences—by calling 911 and transferring patients to community hospitals. However, the ability of some of these community hospitals to respond to neurosurgical and other emergencies may have been adversely affected by proximity of a specialty hospital. This is because when physicians such as neurosurgeons shift their practices to specialty hospitals, they may opt out of taking emergency call, a trend which threatens the American public and the specialty of neurosurgery.

Neurosurgery's critics claim that our specialty has abdicated its responsibility to deliver trauma care. The specialty faces significant challenges from so-called trauma surgeons who would like not only to step into a perceived trauma vacuum, but also to replace us in the delivery of more traditional neurosurgical care. The decreased pool of emergency providers, exacerbated by the emergence of specialty hospitals, may adversely affect a hospital's ability to provide level 2 trauma coverage. This has been demonstrated to have the potential to overwhelm level 1 trauma centers.

The lack of neurosurgeons and other surgical specialists taking call at level 2 facilities led to a crisis at the University of Oklahoma's level 1 trauma center. At one point, the university hospital was left to care for more than 80 percent of all trauma cases in the Oklahoma City metropolitan area. This crisis only abated after a \$5.7 million state bailout and a successful appeal to the neurosurgeons in the community to rotate level 2 emergency call among some community hospitals. Although this call rotation somewhat alleviated the problem, some elements of this taxpayer-funded bailout represent a cost shift from the taxpayer's pocket to profits of specialty hospitals. This taxpayer subsidy certainly is not in society's best interest.

As healthier, better-insured elective surgical patients are shifted



Factors that primarily influence physicians to create specialty hospitals: Physicians' desire to control management decisions that affect their productivity and the quality of care delivered to patients • The high reimbursement for certain procedures • The desire of physicians to increase their income in the face of declining reimbursement and increasing financial attack.

away from community hospitals, there is an impact on the community hospitals' financial health. The way these affected hospitals will stay afloat and make money is by providing less care to indigent patients as well as fewer services that lose money, such as burn units, neonatal intensive care units, mental health clinics, and disaster response facilities. I suspect that some welcome the excuse to discontinue these services. The community is ill-served when this happens as well as when a specialty hospital duplicates services offered at a community hospital, leading to overcapacity in the community for some services and subsequent competition for volume. When too many facilities with a limited number of personnel who have experience in complex surgical procedures are trying to deliver specialized care, the potential for quality care actually decreases.

Many proponents of specialty hospitals cite increased competition as a benefit. However, I am not sure that increased competition is of great benefit to neurosurgeons and their patients. I have seen competition in my community. It leads to patient dumping and sensational, cheesy advertising. It also leads to competition for staff and cannibalization of community resources. As specialists leave community hospitals for their specialty hospitals, the community

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hospitals recruit more specialists and reimbursement wars ensue. Competition leads to physicians acting poorly toward each other. At best, it's unbecoming.

One of the increased risks for our profession that may result from the financial success of the specialty hospital is the government response that can be expected. Congress has asked the CMS to look at restructuring reimbursement by diagnosis-related group to minimize the profits of specialty hospitals. We know that the CMS is incentivized to shift reimbursement from those it considers historically overpriced to those it perceives as underpaid. If costs rise and are shifted to the taxpayers while the profits for specialty hospitals continue, the incentive for the CMS to push for changes in reimbursement by diagnosis-related group will increase.

More problematic is that ownership of specialty hospitals can excite the profit incentive for surgeons, leading to a change in practice patterns. In fact, a study of utilization at specialty cardiac hospitals by Barro and colleagues has shown a lower threshold for cardiac bypass surgery in these facilities.

Some of the critical points I have made fall to the eye of the beholder, and I expect that not everyone would agree that the effect upon community hospitals, the substantial increase in per capita surgical rate, increased competition, windfall profits, favored investors, the opportunity for physicians to triple dip by collecting fees for their own professional services, sharing in the profit generated by the facility and then growth in investment, and the greater margins seen in specialty hospitals compared to community hospitals, are bad things. Since specialty hospitals, however, are not rushing to enter into unprofitable areas, there is simply no evidence that society is particularly well-served by these factors.

The Bottom Line: Professionalism vs. Commercialism

What does all this boil down to? I believe that the core issue is that of conflict of interest. Physician ownership, self-referral and triple dipping are just that. Most of society—federal, state and local government, scientific and educational institutions, businesses and neurosurgical societies—believes that conflict of interest is not a good thing. Most people are well aware of the overt and subtle changes of behavior that are occasioned by such conflicts. Small clouds over judgment can have serious consequences.

Another important issue, however, involves a basic fairness and lack of vindictiveness. Taking the most profitable services down the block and away from Our Lady of Perpetual Misery Hospital might be good for me, but it is not good for Our Lady of Perpetual Misery.

Even if specialty hospitals are better able than general hospitals to focus on providing the most profitable treatments, this is contrary to society's interests overall as they do not care for patients with all types of illnesses. Patients with increased severity of illness are more costly to treat. Seeking out healthier patients to treat may be a good business strategy, but how well does this serve society? There is evidence that specialty hospitals choose to enter markets

with healthier patients and provide additional intensive treatment of questionable cost effectiveness; a reasonable person can assume that both of these activities would reduce social welfare.

Physicians are justly concerned that their income is under attack. Clearly, an appropriate policy would be to address physicians' income concerns directly and ensure that fees reflect the fair cost and value of the services provided. Hospitals and Congress must do more to align financial success and quality of care and operational incentives for physicians. However, I do not believe that sanctioning of a business model that perpetuates conflict of interest, increases utilization, and is reliant upon legal loopholes with subsequent weakening of community hospitals will not harm community healthcare.

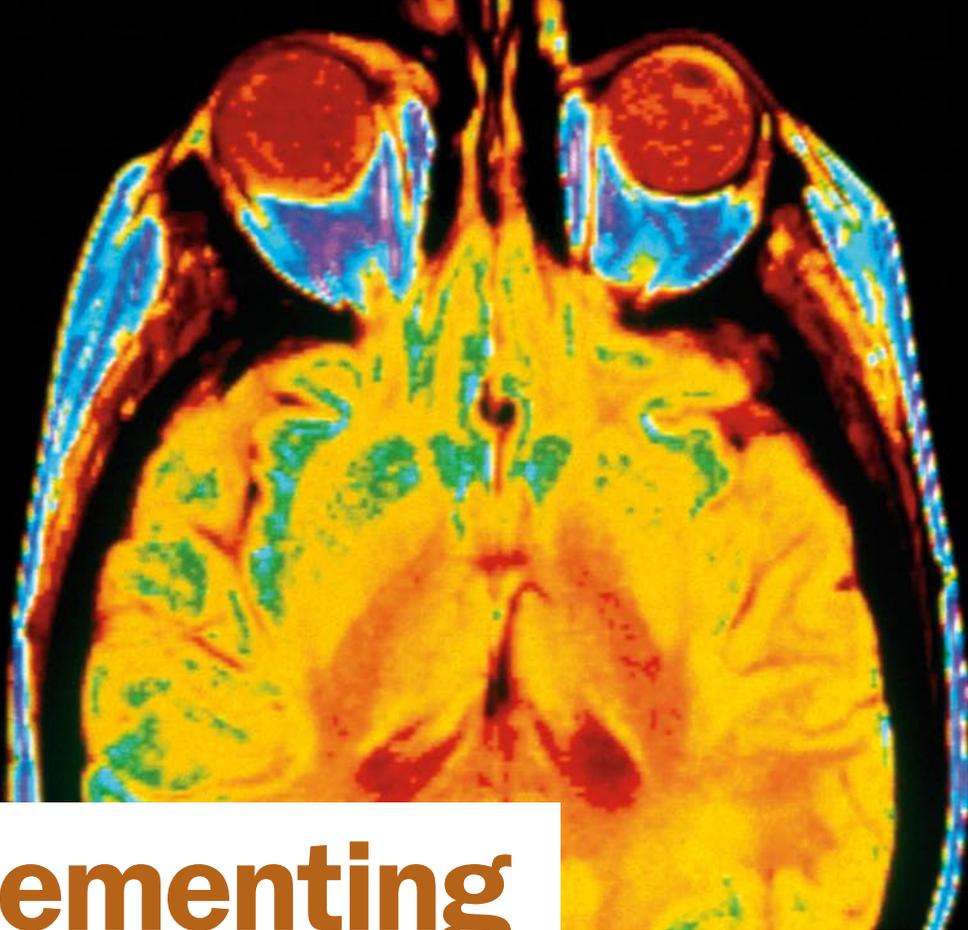
If the current trends continue, what could emerge is a hospital system that looks like the airline industry. As reported in Shactman, health policy analyst Stuart Altman told the Council on Health Care Economics and Policy: "A lot of frequent flyers like the efficient, low-cost airlines like Southwest and Jet Blue, but many full-service carriers have faced bankruptcy and have stopped providing services to some regions. We don't feel all that bad for the bond- and stockholders or even the airline pilots, but if community hospitals close, access to local health services will be reduced, and it is apt to be the poor and uninsured who lose services."

In a letter to the editor in the *New England Journal of Medicine*, Donald A. Barr, MD, recounts that more than 50 years ago sociologist Talcott Parsons thus described the conflict of professionalism and commercialism: "The 'ideology' of the profession lays great emphasis on the obligation of the doctor to put the 'welfare of the patient' above his personal interests, and regards 'commercialism' as the most serious and insidious evil with which it has to contend." Barr goes on to cite commentary in 1995 by George Lundberg, then editor of the *Journal of the American Medical Association*: "The fundamental purpose of a business is to make money... On the other hand, the fundamental purpose of a profession is to provide a service that reflects commitment to a worthy cause that transcends self-interest." Barr concludes that "specialty hospitals, boutique care at a price, and a range of other practices threaten the core of trust on which our profession stands ... [and] that commercialism has no place in the profession of medicine." ■

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For Further Information

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Implementing an Imaging Center in Your Practice

Thomas A. Kopitnik, MD

Given that today imaging services are considered crucial for diagnosing neurological disorders and creating a detailed neurosurgical plan, it is surprising that more neurosurgeons have not instituted an imaging center within their practices. Other specialists such as dentists and obstetricians routinely offer their patients X-ray and ultrasound services in their offices, saving their patients travel to an off-site radiology department where they endure yet another registration process, obtain the needed imaging studies and return to the office for interpretation of the studies and recommendation of a treatment plan.

The ability to provide pertinent imaging for patients in an office setting significantly improves the quality and efficiency of care delivered to patients. Further, it gives the physician a competitive edge in the community and markedly improves patient satisfaction. This not only is my opinion, it is my experience. In 2003, our three-physician group implemented an imaging center that included an X-ray machine and an MRI scanner. In 2006 we added a 64-slice CT scanner, C-arm fluoroscopy, and full pain clinic injection services, and it has turned out to be the best strategic decision possible to the benefit of our patients, the community, and our practice. Based on our experience, this article offers an overview of implementing an imaging center in a neurosurgical practice. While the financial information estimates presented are fictitious and only for a hypothetical imaging center, they represent realistic figures rooted in our recent experience.

Benefits of Owning an Imaging Center

Even if an imaging center were entirely revenue neutral (which it is not), the benefits to a neurosurgical practice and its patients far outweigh the time commitment for the initial start-up of the center. An imaging center within a neurosurgical practice allows the neurosurgeon to control all of the factors relating to patient imaging and to tailor the imaging studies to meet the specific needs of the patient. This allows the neurosurgeon to make a precise diagnosis and to formulate an accurate treatment plan that most benefits the patient. The neurosurgeon-owned imaging center also can help keep imaging costs down by offering competition to hospital-based imaging centers.

A neurosurgeon-owned imaging center can offer flexible hours of operation in response to the needs of the patients. Because of work and child care issues, some patients are best served if they can obtain imaging studies outside of conventional business hours, either very early or very late in the day and on weekends.

With a neurosurgeon-owned imaging center, the neurosurgeons also have control over the timing and the quality of the radiological interpretation. If image interpretation is of poor quality or if radiological reports are consistently difficult to obtain in a timely manner, images can be easily routed to a radiology group that will work collegially with the neurosurgical practice.

In our center, all images are captured digitally and sent by secure Internet transmission to be read and interpreted by a large radiology group in another state with 24-hour coverage. Within

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24 hours of the time the image was taken, the radiology group faxes a report to the neurosurgeon. The quality of the interpretation is superlative and the timely return of radiology reports makes the imaging service we offer our patients outstanding. It also has been very easy to find quality radiology groups that interpret images for our imaging center at a reasonable price.

Factors such as the ability to tailor the imaging studies to meet the specific needs of the patient, lowered cost, flexible hours for imaging, and timeliness and quality of image interpretation are only a few of the clear advantages of operating an imaging center within a neurosurgical practice.

Impediments to Implementing an Imaging Center

Reasons neurosurgeons have been reluctant to pursue imaging centers within their practices undoubtedly are related to fear of retribution, lack of knowledge in this area, and a reluctance to in-

TABLE 1: Basic Assumptions for Implementation of MRI and X-Ray Services

Cost of capital	10%
Annual increase	5%
Expense contingency	10%
MRI	
Avg time per MRI	25 min
Avg turnaround time	15 min
<i>Total exam time</i>	40 min
Max utilization	80%
Reimbursement rate	\$780
Bad debt/gratis	12%
Supplies and film per patient	\$20
Billing and collection	2%
X-Ray	
Avg time per X-ray	15 min
Avg turnaround time	5 min
<i>Total exam time</i>	20 min
Max utilization	75%
Reimbursement rate	\$54
Bad debt/gratis	12%
Supplies and film per patient	\$5
Billing and collection	2%

vest a significant amount of time and financial resources for an uncertain return.

Fear of retribution or scorn by other imaging centers, physicians, or hospitals in the practice region are realistic concerns. In our experience, it is usually the entities which are directly and significantly profiting from an existing imaging center that are most vocally opposed to another center opening. One possible way to ameliorate potential animosity is to structure the imaging center as a joint venture or partnership with a hospital or radiology group. If this is not possible, then the neurosurgical practice should be prepared for disdain and criticism from a small segment of the medical community, possibly including a hospital's administration. The reasons often cited by those opposing a neurosurgical imaging center typically are false and self-serving and have little or nothing to do with the general welfare of the community. It is through tempered competition that costs are kept low, physicians have a choice in imaging, and patient and physician satisfaction are truly valued.

Initially our practice's imaging center was to be a 50-50 venture with the local hospital. At the eleventh hour, after money had been invested, the hospital decided not to participate for reasons which were unclear and perhaps related to pressure from a competing imaging center owned and managed by a single radiology group. Our practice considered the financial options and decided to pursue an imaging center without any other partners, a decision that has proven fruitful for our patients, our practice and our community.

Another serious consideration to keep in mind when adding an imaging center to a neurosurgical practice is the understanding of and strict adherence to state and federal laws and guidelines with regard to physician ownership of ancillary services and the related issue of self-referral. Our group consulted a qualified attorney to ensure correct interpretation of all applicable laws, and we recommend that those considering opening a similar ancillary service do the same.

Financial Considerations

In the past, the biggest challenge for physicians wishing to open an imaging center was financial. Today, however, most imaging equipment companies will work with physicians under leasing arrangements, making imaging centers very affordable.

Operational costs include printers and film machines (we recommend digital images rather than printed film), contrast injection machines, technologists to operate the equipment, and costs for collecting reimbursement. These costs help determine minimum necessary volumes in order to develop a base for making informed decisions about whether an imaging center is appropriate for a neurosurgical office.

Cost estimates for development and initial operation of a hypothetical neurosurgeon-owned imaging center are shown in tables 1-4. It is important to view these tables with the following caveats in mind: The dollar amounts presented are hypothetical, and costs with respect to employees, supplies, and possibly reimbursement will vary significantly by geographical region.

TABLE 2: Average Monthly Cost for MRI and X-Ray Services

Expense Category	Average Cost
ADVERTISING	\$321
COMPENSATION	
Facility manager	\$4,400
MRI technician 1	\$3,432
MRI technician 2	\$3,051
X-ray technician	\$2,669
Reception staff	\$1,144
Check-out staff	\$953
Billing and collections staff	\$4,324
Computer and network support staff	\$1,297
Total compensation	\$21,271
TECHNOLOGY	
Computers	\$214
Film printer	\$357
Paper printer	\$71
Dicom software integration	\$143
Total technology	\$786
IMAGING EQUIPMENT AND FACILITIES	
Equipment loan	\$20,000
Maintenance	\$10,000
Supplies	\$5,544
FACILITY OVERHEAD	
Rent	\$3,000
Office supplies	\$169
Network	\$564
Telecom	\$169
Utilities	\$1,691
Total equipment and facilities	\$72,943
OTHER EXPENSES	
Legal fees	\$457
Tax advice	\$714
Insurance	\$2,827
Staff training	\$257
Total other expenses	\$4,256
SUBTOTAL EXPENSES	\$99,577
Contingency (10%)	\$9,958
TOTAL EXPENSES	\$109,535

Table 1 illustrates the basic operating assumptions associated with the initial purchase and operation of an MRI scanner and a digital plain radiograph machine. In table 2, estimated average monthly costs of implementing, owning, and managing an imaging center in a neurosurgical office setting are shown. Revenue growth for the first and twelfth months of imaging service implementation is shown in table 3. For obvious reasons, it is wise to underestimate the number of studies and revenue generated; in our projection, 90 percent capacity is never exceeded. With reasonable estimates in hand, a cost-benefit analysis then can be formulated. Table 4 on page 16 shows the theoretical expenses and probable revenue associated with medical imaging over a four-year period. In this exercise, the average annual net income is more than \$1 million after the first year.

In summary, the increasing costs of operating a neurosurgical practice, escalating malpractice insurance premiums, and lack of realistic increase in reimbursements for surgical procedures create an increasingly difficult practice environment. To continue to practice neurosurgery in this environment, it makes sense for some practices to capture a portion of the ancillary imaging revenue. The addition of an imaging center to a neurosurgical practice can offer the neurosurgeons much more authority over the quality of imaging studies, and the neurosurgeons that render the care to the patients can have the ultimate influence on charity and unreimbursed care by controlling another facet of the global cost of patient care. ■

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Note: Dollar amounts in tables 1–4 are hypothetical, and costs with respect to employees, supplies, and possibly reimbursement will vary significantly by geographical region.

TABLE 3: Revenue Projection for First Year MRI and X-Ray Services

Revenue Factor Description	Month 1	Month 12
% of max operating capacity	78%	90%
MRI		
No. MRI patients	218	252
MRI billings	\$170,040	\$196,560
Subtotal	\$145,798	\$168,538
X-Ray		
No. X-ray patients	21	24
X-ray billings	\$1,137	\$1,312
Subtotal	\$908	\$1,048
TOTAL REVENUE	\$146,707	\$169,585
CUMULATIVE REVENUE	\$146,707	\$1,955,618

TABLE 4: Cost-Benefit Analysis of MRI and X-Ray Services Over Four Years

REVENUE	YEAR 1	YEAR 2	YEAR 3	YEAR 4
No. imaging days	250	250	250	250
No. MRI procedures per day (avg.)	12	12	12	12
No. MRI procedures per year	3,000	3,000	3,000	3,000
Gross MRI billing per patient	\$780	\$788	\$796	\$804
Gross MRI billing	\$2,340,000	\$2,363,400	\$2,387,034	\$2,410,904
No. X-ray procedures per day (avg.)	24	24	24	24
No. X-ray procedures per year	6,000	6,000	6,000	6,000
Gross X-ray billing per patient	\$54	\$55	\$55	\$56
Gross X-ray billing	\$324,000	\$327,240	\$330,512	\$333,818
Total gross billing	\$2,664,000	\$2,690,640	\$2,717,546	\$2,744,722
Bad debt & adjustment	\$315,722	\$318,919	\$322,148	\$325,409
Total Net Imaging Revenue	\$2,348,278	\$2,371,721	\$2,395,398	\$2,419,313
EXPENSE				
Marketing/advertising	\$4,750	\$3,000	\$3,000	\$3,150
Staff salaries	\$209,586	\$258,340	\$276,205	\$290,016
Technology	\$59,500	\$6,200	\$6,800	\$7,140
Rent	\$30,000	\$36,000	\$36,000	\$36,000
Utilities	\$16,053	\$20,806	\$23,445	\$24,617
Supplies	\$67,138	\$204,585*	\$275,732*	\$289,519*
Communications	\$8,590	\$9,016	\$10,159	\$10,667
Equipment cost	\$927,500	\$620,081	\$620,344	\$620,344
Professional services	\$14,800	\$11,200	\$11,200	\$11,760
Insurance	\$20,833	\$35,417	\$53,125	\$79,688
Miscellaneous	\$4,800	\$2,050	\$2,050	\$2,153
Total Expenses	\$1,363,550	\$1,206,695	\$1,318,062	\$1,375,054
NET INCOME				
Annual	\$984,727	\$1,165,026	\$1,077,337	\$1,044,259
Cumulative	\$984,727	\$2,149,754	\$3,227,090	\$4,271,349

*Purchase of coil additions



Legal Aspects: Forming an Ancillary Service

Dave Shelton Atteberry, MD, Patrick J. Wade, MD, Richard N. Wohns, MD, Ann R. Stroink, MD, and Alan M. Scarrow, MD, JD

The challenge of creating higher quality service at a lower cost for an older and less healthy patient population gives physicians the impetus of necessity as the mother of invention and the spur of innovation. To augment practice revenues and to control quality for their patients, a number of physicians have begun investing in or opening ancillary service facilities.

Many types of ancillary entities exist today in the form of single-specialty or multispecialty hospitals, or ancillary service facilities that offer imaging pain management, physical therapy or rehabilitation, diagnostic technologies with electromyography, electroencephalography, or remote video monitoring of surgeries or sleep studies, and ambulatory surgery centers. ASCs alone have experienced significant growth in the past several years: More than 4,500 ASCs received Medicare certification in 2005 with an annual growth rate of 8.3 percent.

Whether the venture is on a small or large scale, with or without partners, or single specialty or multispecialty, many of the motivations and issues involved in establishing an ancillary service facility are the same. To ensure that the arrangement will not violate the law and that the proper legal structure is created, a physician who is considering investing in an ancillary service or entering into a contract involving an ancillary service should do so only after consult-

ing an attorney experienced in representing healthcare providers. This article is intended to provide an overview of the legal issues involved in opening an ancillary service facility.

Creating a New Legal Entity

The formation of an ancillary service facility typically requires the creation of a new legal entity. A physician group can establish this new legal entity by forming a corporation, a general partnership, a limited partnership or a limited liability company commonly known as an LLC. Most lawyers specializing in healthcare joint ventures recommend forming the new legal entity as an LLC.

Corporations Corporations protect shareholders by containing the liabilities of the corporation within the shell of the corporation. Thus shareholders are not responsible to creditors of the corporation. There are two types of corporations, c-corporations and s-corporations. The difference between these corporate forms is the way the profits of the corporation are taxed. The downside of the c-corporation structure is that profits of the corporation are taxed prior to making any distributions to its shareholders. This is a double taxation that deters the formation of a corporation by most professionals. S-corporations are treated as partnerships for tax purposes and have the advantage of pass-through tax treatment (tax items are passed through to the partners so that only one level of tax is paid, that is, no corporation tax is paid). The downside of the s-corpora-

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tion structure is the limitation that is imposed on the number and type of entities that can invest in the company.

General Partnerships General partnerships do not enjoy the same limitation of liability afforded by the corporate form. General partnerships have the advantage of pass-through tax treatment, but all partners in a general partnership are jointly and severally liable for the debts of the business and for the wrongful acts committed by other partners in the course of the partnership's business. A limited partnership has at least one general partner and one limited partner, with management and control vested with the general partner(s). The liability of a general partner is unlimited just as in a general partnership, while limited partners are limited in their liability exposure by the amount of their investment in the partnership.

Limited Liability Company An LLC is a hybrid legal entity that combines traits of a corporation with traits of a partnership. An LLC allows its members to have pass-through tax treatment like a partnership and limited liability like a corporation. Most lawyers spe-



Most lawyers specializing in healthcare joint ventures recommend forming the new legal entity as an LLC.

cializing in healthcare joint ventures recommend forming the new legal entity as an LLC because of those favorable liability and taxation traits. An LLC is formed by filing Articles of Organization with the Secretary of State in the state where the LLC is formed. More importantly, the LLC members will also adopt an Operating Agreement that will serve as the venture's principle governing document. The Operating Agreement will detail ownership, governance, distributions, non-compete and divestiture issues for the entity. The Operating Agreement should be written and negotiated very carefully by the physician(s) as it will be relied upon by a court of law should a dispute arise amongst the members of the LLC.

Federal Regulation of Ancillary Service Facilities

Antikickback Statute The federal antikickback statute establishes criminal penalties for any person who knowingly and willfully offers, pays, solicits or receives any remuneration to induce payment in re-

turn for: (1) referring an individual to a person for the furnishing or arranging for the furnishing of any item or service payable in whole or in part under a federal healthcare program (Medicare or Medicaid); or (2) purchasing, leasing, ordering, or arranging for, or recommending purchasing, leasing, or ordering any good, facility, service or item payable under a federal healthcare program. Remuneration is defined as including the transfer of anything of value, in cash or in kind, directly or indirectly, overtly or covertly. Remuneration has been interpreted to include the receipt of free goods or services and the opportunity to bill for services (that is, receipt of an exclusive contract). Because this is a criminal statute, there is often extensive judicial inquiry into the facts of a specific arrangement in order to determine whether the participants were "knowing and willful," making litigation in these cases long and costly.

Violation of the antikickback statute constitutes a felony punishable by a maximum fine of \$25,000, imprisonment up to five years, or both. Conviction will lead to an automatic exclusion from Medicare, Medicaid, and other federally funded healthcare programs. In addition, violations of the antikickback statute are subject to civil monetary penalties of up to \$50,000 and damages of up to three times the amount of the illegal kickback.

The antikickback statute clearly prohibits a business arrangement in which payment is made for a patient referral, but when the business arrangement is a joint venture between two or more individuals or organizations its legality is less clear. The courts filled in this lack of clarity in the *United States v. Greber* case by interpreting the antikickback statute to have a "one purpose" test. Thus, when even one purpose of the arrangement in question is to induce referrals, irrespective of the existence of other legitimate purposes, the payment violates the antikickback statute.

The Department of Health and Human Services Office of the Inspector General has created a number of exceptions, "safe harbors," to protect legitimate business arrangements. When an arrangement meets the description of an OIG safe harbor, one can be assured that the arrangement does not violate the antikickback statute. Whenever possible, a joint venture should meet a safe harbor, but an arrangement that does not meet a safe harbor is not necessarily illegal. An attorney can help a business arrangement meet as many elements of the safe harbor as possible.

Currently four ASC safe harbors exist for:

- surgeon-owned ASCs in which all physician investors are general surgeons or surgeons engaged in the same surgical specialty provided that they perform ASC procedures as a significant part of their medical practice (defined as one-third of the physician investor's medical practice income from all sources for the previous fiscal year—also known as the "one-third test");

■ single-specialty ASCs in which all of the physician investors are engaged in the same medical practice specialty provided that they perform ASC procedures as a significant part of their medical practice (see the one-third test discussed above);

■ multispecialty ASCs in which the physician investors are a combination of (a) general surgeons, (b) surgeons engaged in the same surgical specialty, or (c) physicians engaged in the same medical practice specialty, who perform ASC procedures as a significant part of their medical practice (see the one-third test discussed above) and who perform at least one-third of their procedures at the ASC; and

■ ASCs in which at least one hospital is an investor and the other investors are either (a) individual physicians or group practices that otherwise qualify under the ASC safe harbor or (b) individuals or entities who are not the source of patient referrals. Hospital investors in this latter situation may not be in a position to refer patients to the ASC or any physician investor nor may the hospital own or employ any of the space, equipment, or personnel in the ASC.

It is notable that physicians who do not meet the one-third test, such as anesthesiologists, still may be able to invest in an ASC without exposing the entity to significant risk of violating the antikickback statute provided that those physicians are not in a position to refer patients to the ASC.

Congress has stated that in the interest of convenience, professional autonomy, accountability and quality control, surgeons should be allowed to form ASCs. Congress' view is that the possible risk of overutilization or unnecessary surgery is mitigated by the fact that each surgeon already has an opportunity to generate income via the professional fee and that the additional financial return from the ASC is not likely to increase utilization.

Federal Stark Law Federal law, commonly known as Stark law after the original legislation's author U.S. Rep. Pete Stark, further restricts physician referrals to a physician joint venture and thus can affect physician investment in the joint venture. Stark law provides that a physician with an ownership or investment interest in or compensation agreement with an entity is prohibited from making referrals to that entity for the furnishing of "designated health services" for which payment may be made under a federal healthcare program. Designated health services include physical therapy, occupational therapy, radiology or other diagnostic services, radiation therapy, durable medical equipment and supplies, parenteral and enteral nutrients, prosthetics, orthotic and prosthetic devices, home health services, outpatient prescription drugs, and inpatient and outpa-

A physician who is considering investing in an ancillary service or entering into a contract involving an ancillary service should do so only after consulting an attorney experienced in representing healthcare providers.

tient hospital services. Services provided in an ASC are not considered designated health services to the extent that payment for those services is included in the global ASC payment rate. Thus, radiology services and more complex diagnostic tests that are not included in the ASC payment rate do not fall under that exception and could initiate a Stark law violation.

Similar to the federal antikickback law, Stark law provides certain exceptions that allow physicians to receive payment for referring Medicare or Medicaid patients to an entity in which they have a direct or indirect financial interest. These exceptions include:

- services provided personally by or under the direct supervision of another physician in the same group practice;
- in-office ancillary services provided in the same building of the practice or in a centralized building for a group;
- services rendered pursuant to a prepaid plan or a hospital affiliation;
- rental of office space or equipment;
- bona fide employment or personal service arrangements;
- certain types of physician incentive plans;
- physician recruitment;
- isolated transactions; and
- certain group practice arrangements with a hospital.

Stark is a civil rather than a criminal statute (different from antikickback law). Violation of Stark law may result in civil penalties not to exceed \$100,000 for each "arrangement or scheme" that a person knows or should know has a principal purpose to violate the statute. Additionally, the government may withhold payments for prohibited referrals or seek to recoup past payments.

For purposes of establishing ancillary service facilities other than ASCs, such as MRI, CT or fluoroscopic imaging facilities, the Stark "in-office ancillary services" exception is particularly helpful. If the

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service is provided in the same building in which the referring physician generally practices, and the receipt of the designated health service is not the primary reason the patient contacted the referring physician, or if the service is provided in a centralized building that is used exclusively by the referring physician's group practice, then that service would be excepted from Stark law prohibition.

Federal Tax Exemption Issues

When a physician group forms a joint venture with a nonprofit, tax-exempt entity (such as a hospital) two issues are raised for the nonprofit hospital: (1) impact on the hospital's tax-exempt status; and (2) the potential that the hospital's return on investment in the joint venture will be treated as taxable income. These concerns are mitigated if the joint venture is structured in a manner that furthers the charitable purposes and mission of the hospital. This can be accomplished if the hospital controls a majority of the board and management is by an independent third party.

In contrast, if the hospital's participation is a 50-50 split or less and effective control is in the hands of for-profit individuals, the hospital's tax exemption could be in jeopardy. In *Redlands Surgical Services v. Commissioner of the IRS*, the circuit court determined that a joint venture between a for-profit and nonprofit was inconsistent with the tax-exempt entity purpose because of a 50-50 split in board governance as well as the fact that the joint venture provided minimal services to Medicaid patients and no indigent care.

Thus it seems that for a hospital or other nonprofit entity to minimize the risk of jeopardizing its tax-exempt status, the nonprofit entity must maintain control of the joint venture in a way that furthers its charitable purpose. If the joint venture is not structured in that way, the hospital's profit from the joint venture would be taxable income. Whether the tax-exempt hospital's participation in the joint venture also threatens loss of its tax exemption will depend on the size of the joint venture's operations relative to the other tax-exempt activities of the hospital.

State Law

Many states have enacted laws to supplement the federal restrictions on the referral of Medicare and Medicaid patients. This may be accomplished through a variety of means including obtaining a certificate of need which requires the need for the facility to be justified in front of a state-appointed panel, or placing additional restrictions on the referral or reimbursement of patient services from state funds. These laws vary in their detail and comprehensiveness and should be thoroughly reviewed by a joint venture's legal counsel.

Future Regulation

Predicting the regulatory actions of the federal or a state government is a fool's game. However, there are several indications that, at least on a federal level, Congress is scrutinizing joint venture ancillary facilities that are owned in whole or in part by physicians. The Department of Health and Human Services semiannual agenda re-

leased in mid-December outlined CMS plans to issue as many as 30 proposed rules in the first half of 2007, including a rule to revise the conditions for coverage in ASCs.

The CMS also had previously proposed a Stark law rule change that was published in the Federal Register on Aug. 22, 2006. The proposed change would eliminate the use of "condo" pathology laboratories—labs that are operated by a separate medical group but the same group of pathologists and technicians service multiple labs—with far-reaching implications for many common diagnostic imaging joint ventures.

Currently, the CMS allows for reassignment of Medicare reimbursement from the owner medical group to outside entities—in this case the pathologists and technicians—under contractual agreement. The proposed rule change would amend the current contractual reassignment exception so that the billing group would be required to perform the interpretation of the study and Medicare would limit the payment to the physician or group to the lower of: the supplier's net charge to the billing physician or group; the billing physician or group's actual charge; or the Medicare fee schedule amount. All contractual agreements involving the performance of diagnostic tests thus would be subject to this "anti-markup" provision, changing the economics that underlie current contractual agreements.

Additionally, the CMS is considering merging the requirements for "purchased interpretations" into the contractual reassignment exception. Under these changes, a physician or group would be able to bill for the reassigned professional component of a diagnostic test under the contractual arrangement exception only when: the test is ordered by a physician who is outside of the group performing the billing, and independent of the interpreting physician; the physician or group performing the interpretation does not see the patient but only sees the test for purposes of furnishing an interpretation; and the physician or group billing for the interpretation also performed the technical component of the diagnostic test.

Thus, physician groups with an imaging device and a contract with a radiology group to perform interpretation would have to reconsider those contracts. This rule change would require these groups to perform the interpretation themselves, to employ (rather than contract with) the pathologists or radiologists to read the test, or to cease billing for the interpretation altogether.

In summary, regulation of ancillary facilities is a constantly changing landscape. The assistance of experienced legal counsel when investing in or entering into a contract involving such facilities is essential. ■

Dave Shelton Atteberry, MD, MS, Ann R. Stroink, MD, Patrick J. Wade, MD, and Richard N. Wohns, MD, are members, and Alan M. Scarrow, MD, JD, is chair of the Medico-Legal Committee of the Council of State Neurosurgical Societies.

Acknowledgement

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Of Science and Celebration

75th AANS Annual Meeting Attracts Record Numbers

I'll be seeing you in all the old familiar places....

The National Air and Space Museum was the setting for the opening reception of the 75th AANS Annual Meeting in April. Exhibits traced development of flight throughout the 20th century to the present, and (above) the Neurosurgical Jazz Quintet performed all-time favorites. Pictured are (l-r) Philip Weinstein, MD; Donald Quest, MD; and James Rose, MD. In the background are Theodore Schwartz, MD, and Michael Scott, MD.

MANDA J. SEAVER

The 75th Annual Meeting of the AANS represented a confluence of the past, present and future of the venerable organization and the specialty of neurosurgery. Whether they came for the historic setting, the landmark celebration, or the superb science, attendees converged in record numbers on Washington, D.C., April 14–19.

“This year’s meeting was a monumental success,” said 2006–2007 AANS President Donald O. Quest, MD, who presided over the meeting. “Attendance at the meeting was the highest ever with a thousand registrants more than any previous meeting.”

A grand total of 8,379 people, 3,497 of them medical registrants, were in attendance, and 241 companies participated in the exhibit hall, an 18 percent increase over the previous year. While these figures are impressive, numbers alone do not reflect the depth of planning or the excellence of execution involved in producing a premier event such as this.

Of the many individuals involved in creating this event, the Annual Meeting Committee formed the planning core. Committee members were Dr. Quest, Jon Robertson, MD, Annual Meeting Chair Mitchell Berger, MD, Sander Connelly, MD, local hosts Kevin McGrail, MD, and Lisa McGrail, and Scientific Program Chair Timothy Mapstone.

The comprehensive scientific program included 39 practical clinics, 21 general scientific sessions, 79 breakfast seminars, 146 oral abstract presentations and nearly 500 poster presentations. Twelve topics that reflect a wide range of neurosurgical research and that were deemed of interest to the general public were selected by the AANS Public Relations Committee for release to the media. Novel gene therapy for

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Parkinson's disease, partial neurological restoration after spinal cord injury, and stereotactic radiosurgery for trigeminal neuralgia and metastatic spinal tumors were among the topics chosen this year.

The scientific releases generated considerable media attention, with print and broadcast media reaching an estimated worldwide audience of 881 million and counting. The Associated Press article on Parkinson's disease research appeared in major daily newspapers and online publications and generated 335 million in circulation. Other major print media included The New York Times, USA Today, Atlanta Journal-Constitution, The Washington Post, Los Angeles Times, San Francisco Chronicle, and U.S. News and World Report. Notable online publications covering the meeting included MSN, AOL, Yahoo! News, Reuters, HealthDay, Discovery Channel, iVillage, and Forbes.

Over the Moon

The National Air and Space Museum was the setting for a stellar opening reception on Sunday evening. Throngs of revelers were entertained in the cavernous space by exhibits that traced development of flight throughout the 20th century to the present, a period that parallels the development of modern neuro-



Donald Quest

surgery. Guests of all ages may have met actors portraying historic characters such as Amelia Earhardt and Orville Wright or enjoyed "immersive" presentations of "Roving Mars" in the IMAX theater and "Cosmic Collisions" in the planetarium. High spirits, fellowship and music complemented an expansive buffet topped off with diamond jubilee-inspired desserts. The Neurosurgical Jazz Quintet, led by Dr. Quest on trombone, played (and occasionally sang) jazz standards such as "Sentimental Journey" and "I'll Be Seeing You."

Those in the audience for Dr. Quest's Presidential Address know that aviation was a theme that carried over to "Naval Aviation and Neurosurgery: Traditions, Commonalities and Lessons Learned."

Serendipity played a major role in Dr. Quest's experience with the U.S. Navy. Inspired by the cinematic WWII heroes of his youth, he applied for and received a Navy scholarship as well as a four-year commitment to the service, having never yet seen the sea. Through trial and error (including the discovery that he was seasick on an "ocean that was flat as a pond" and that "sleeping on the ground, eating K-rations out of a tin can, shooting blanks and running around in chaos at night" were not for him), he found himself on course to become a Navy pilot.

The intensive and deliberate training required for neurosurgery also is required for earning one's wings. "How can you land on an aircraft carrier? How can you clip an aneurysm? You don't do it on the first day—you practice and practice," said Dr. Quest.

Neurosurgery can learn lessons from aviation in the areas of simulation, robotics, continuing education and maintenance of certifi-

cation, and improved communication, he said. While a neurosurgeon, like a pilot, functions individually, excellent communication and teamwork are required for success of the mission, and this is especially true for the pilot in armed conflict.

"When you sign up for the military especially in peace time, you don't think you're going to fight," said Dr. Quest. His squadron entered the Vietnam conflict in 1964 to provide close air support in South Vietnam, interdiction of supply routes and suppression of fire during rescue efforts for downed pilots in North Vietnam. The work was "grim, deadly, and terrifying" but it inspired a sense of duty, honor, loyalty, purpose, pride, and camaraderie, ideals that he said apply well to neurosurgeons.

Ralph Dacey Jr., MD, introduced Dr. Quest, describing him as a combat pilot, skilled surgeon, learned professor, wise mentor and counselor, compelling leader of a specialty, and a nurturing family man. "I think most of the neurosurgeons in this room want to be just like you," he said.

The Spirit of Inquiry

Invited lecturers continued the aerial theme, which Sally Ride, PhD, the first woman astronaut, carried into the stars.

"What we have here is a rocket scientist talking to brain surgeons," Dr. Ride joked as she inaugurated the Louise Eisenhardt Lecture, which was established to honor the first editor of the *Journal of Neurosurgery* and thus far the only woman president of the AANS. The president and CEO of Sally Ride Science, a company dedicated to supporting girls' interest in math, science and technology, said she took full advantage of the opportunity offered by her space travel for capturing wondrous images. "The thin blue line is earth's atmosphere," she noted, and showing a stunning sunset seen from space she drily added, "every astronaut has this picture."



Sally Ride

Her path to becoming an astronaut began when she saw a NASA ad in the Stanford University paper. "NASA went to a lot of trouble to seek out qualified women for the astronaut corps," she said. The women were to be as qualified as the men, and they were to undergo exactly the same training.

Her primary message: Encourage young people, especially women, to enter scientific fields. "It's important to show women and girls that careers in science are available to them, to put female faces on these careers," she said. "It's up to all of us to inspire and assist younger women to reach for the stars and achieve their dreams, too."

Lisa Randall, PhD, took the audience from the stars into another dimension. The particle physicist and Rhoton Family Lecturer discussed the multidimensional universe in "Warped Passages: Unraveling the Mysteries of the Universe's Hidden Dimensions," which also is the title of her recent book.

2007 ANNUAL MEETING AWARDS AND HONORS

Cushing Medal—Robert O. Grossman, MD

The premier honor given by the AANS was bestowed upon Dr. Grossman for his many professional accomplishments, including his continuing work as chair of the Scientific Advisory Committee of the Neurosurgery Research and Education Foundation, and for his dedication to the field of neurosurgery. He credited his mentors, colleagues and family with supporting him in his work and expressed his deepest appreciation for the honor.



Humanitarian Award Recipient—Benjamin C. Warf, MD

Dr. Warf was recognized for dedicating six years of his life to the advancement of pediatric neurosurgery in Uganda, where he performed more than 1,000 endoscopic third ventriculostomies. “Ben, your work has been a shining example of the difference we can make in the lives of our patients,” said Arthur L. Day, MD, who presented him with the award.



Distinguished Service Award—Mary Louise Sanderson

AANS President Donald O. Quest, MD, presented Ms. Sanderson with the Distinguished Service Award in recognition of her service to the neurosurgical community as administrator of the American Board of Neurological Surgery since 1983. Noting that she has worked with many wonderful people and with eight ABNS secretaries since Steven Mahaley, MD, hired her, she said, “I think I have the best job going.”



Honorary Members

James Ferrendelli, MD, Albert J. Aguayo, MD, and Darrell D. Bigner, MD, were recognized as internationally renowned individuals who have made outstanding education, research or clinical contributions to the field of neurosurgery. Each has played an integral role in advancing innovative research efforts as a Scientific Advisory Committee member of the Neurosurgery Research and Education Foundation.



Lisa Randall

Of the many new results in theoretical physics, she said that some of the most exciting involve extra dimensions of space. Her area of focus, theoretical particle physics, string theory and cosmology, attempts to understand relationships among physical quantities. “Einstein unified space and time, but we’re talking about space with string theory,” she said.

She stressed the importance of imagination in her field in order to comprehend entities that can’t be seen. For example, to understand how a hypersphere would appear if it passed through our universe, she advised imagining slices, like those in medical imaging.

Her field now includes the study of branes, which she described



Thomas Friedman

as membrane-like objects in higher dimensional space. Branes represent an extension of string theory as well as a new concept of our place in the universe, she said. With branes, “infinite extra dimensions are possible.”

“Washington, D.C., is brain dead,” announced Cushing Orator Thomas L. Friedman, a leading author and journalist perhaps best known for his column in the New York Times. He made this perhaps not uncommon assertion during his discussion of globalization in reference to the fact that national leadership seems to be ignoring a new economic reality brought about by the advent of the Internet.

“You know you’re out of power when your Hungarian cab driver

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The passing of the gavel. At the Joint Annual Business Meeting of the AANS and the American Association of Neurosurgeons on April 16, Donald O. Quest, MD (right), who presided over the 75th AANS Annual Meeting, passed the gavel to 2007–2008 President Jon H. Robertson, MD. Dr. Robertson took office at the close of the annual meeting.

has his own Web site in Magyar, German and English,” he said.

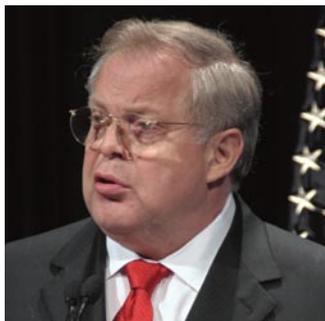
“We’re in a transition to ‘horizontalization,’” he said, a euphemism for the idea that “the world is flat.” Friedman offered two rules that govern this new global environment: (1) whatever can be done will be—the only question is will it be done by you or to you; and (2) the biggest competition is not between countries or companies, it is the competition between you and your imagination on this new platform.

He described the world’s three great eras in terms of iterative software releases. In version 1.0, 1492 to the late 1800s, countries were globalizing; in version 2.0, the late 1800s to 2000, companies were globalizing; and in version 3.0, 2000 to the present, individuals are globalizing, a circumstance that he called “new, exciting and terrifying” because it “empowers, enables, and enjoins them to globalize themselves and to think of themselves collaboratively with others.”

“I used to be a free trader,” he said. “Now I’m a radical free trader.”

Globalism in neurosurgical education was the subject of Johannes Schramm, professor and chair of the Department of Neurosurgery at the University of Bonn, in his Van Wagenen Lecture, “Curiosity and the Atlantic Divide—A Neurosurgeon’s Perspective.”

Highlighting the importance of the Van Wagenen Fellowship requirement that the country of study must be different than the country of residence, Dr. Schramm discussed the role of intellectual



Johannes Schramm

curiosity and “maybe a little ambition” in neurosurgical education. He described the learning process as a positive feedback loop from curiosity to learning to rewards. “The curious surgeon will repeat the pattern of traveling to learn,” he said.

Nobel laureate Eric Kandel, MD, Fred Kavli Professor at Columbia University, director of the Kavli Institute for Brain Sciences, and a senior investigator at the Howard Hughes Medical Institute, delivered the Hunt-Wilson Lecture, “Mice, Men, and Mental Illness: Genetic Models of Human Psychiatric Disorders in Mice.”

He noted that animal models are coming of age in the study of mental illness while the pharmacological approach to treatment of psychiatric disorders has been very disappointing, with up to 50 percent of people being inadequately treated. Research on learned fear, which contributes to stage fright, post-traumatic stress disorder and phobias, particularly shows promise for human therapies. Just as fear can be learned through training, safety can be learned as well. “Knowing something about fear and misery allows us to look at happiness,” Kandel said. “Learned safety mediates components of true happiness.”

In “The Split Brain Revisited,” Theodore Kurze Lecturer and neuroethicist Michael Gazzaniga, PhD, of the Sage Center for the Study of Mind at the University of California, Santa Barbara, discussed the new field of neuroethics with respect to neurodeterminism, the law and personal responsibility.

He explained that while personal responsibility is a learned social rule arising out of group interactions, the brain, a decision-making device, is determined: Brain scans now can predict which decision a person will make before it is made. However, because many factors influence behavior, he is of the opinion that neuroscience should stay out of the courtroom. “This is a changing world and you are dead center in all of these decisions,” he cautioned.

Complicating matters, brain scans now can map individual differences such good or poor reading or math skills or athletic ability. “This will be a living part of your clinical experience within 10 years,” he predicted.

In the Richard C. Schneider Lecture, L. Nelson Hopkins III, MD, professor and chair of neurosurgery, professor of radiology, and director of the Toshiba Stroke Research Center at the University of Buffalo, recounted the progress of endovascular surgery from Lues-



Eric Kandel



Michael Gazzaniga

senhop as the first neurosurgeon to perform an endovascular procedure to the present.

He recounted the detente with radiologists that allowed neurosurgeon Bob Ojemann and the AANS to negotiate an endovascular training pathway for neurosurgeons that in 2000 received approval by the Accreditation Council for Graduate Medical Education. Endovascular training for neurosurgeons in the future will encompass a core curriculum, simulation, and collaboration with radiologists, he said. "Sharing and learning from our mistakes works across boundaries."

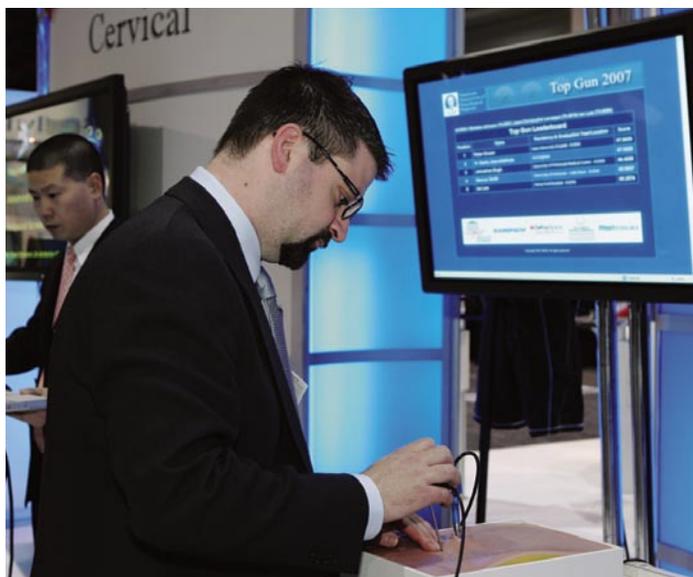


L. Nelson Hopkins III

Socioeconomic Programs Focus on Practice Matters

For the 75th AANS Annual Meeting, socioeconomic programming was expanded from a single Thursday morning session to afternoon sessions Monday through Wednesday. These programs addressed the complexities of social and economic issues that impact how neurosurgeons practice every day and offered a question and answer session, a feature attendees took advantage of particularly with respect to Medicare's pay-for-performance initiative and Emergency Medical Treatment and Labor Act enforcement.

The Monday program scrutinized the enormously influential Medicare program, covering the ever-contentious issues of budget and physician reimbursement based on the "unsustainable" growth



A competitor in the Neurosurgical Top Gun contest for residents and fellows tries his hand at a simulator. The 2007 Neurosurgical Top Gun prize went to Carla Sofia Reizinho, MD, a first-year neurosurgical resident at Hospital Egas Moniz in Lisbon, Portugal.



A total of 241 companies participated in the exhibit hall, an 18 percent increase over the 2006 AANS Annual Meeting.

rate, as well as the controversial new pay-for-performance program. James Bean, MD, and Troy Tippet, MD, moderated the session.

The seemingly intractable problems of neurosurgical emergency care delivery were the subject of the Tuesday program. Moderators John Kusske, MD, and Alex Valadka, MD, led discussion of EM-TALA's current impact as well as how emergency care issues impact those in private practice and academic practice differently. Models for fixing the emergency medical system as well as possible legislative and regulatory remedies were offered.

Neurosurgeon-owned facilities and ancillary services, the focus of the cover section in this issue of the AANS *Bulletin*, was the focus of the Wednesday session. In addition to the topics included in the cover section, Gary Bloomgarden, MD, and Troy Payner, MD, monitored discussion of benefits associated with building a patient-centered multispecialty neurosurgical practice, engaging a practice administrator, and owning an ambulatory surgery center.

The Thursday morning session, moderated by Gregory Przybylski, MD, and John Wilson, MD, offered oral presentations on socioeconomic topics, including those by recipients of the Robert Florin and Cone Pevehouse awards. The respective topics were improving resident work hour compliance through a computerized system, and analysis of U.S. patients treated for spinal pathology.

Plan Now to Attend the 76th AANS Annual Meeting

The 2008 AANS Annual Meeting will be held April 26–May 1 in Chicago, Ill. The abstract center, available at www.neurosurgery.org/abstract_center.asp, closes Aug. 31, and registration and housing information will be available at www.AANS.org in the fall. ■

Manda J. Seaver is staff editor of the AANS *Bulletin*.

For Further Information

- 75th AANS Annual Meeting photos, www.lagniappestudio.com/aans2007
- Commemorative Book: History of the American Association of Neurological Surgeons: Seventy-Fifth Anniversary, <http://marketplace.aans.org/Portals/3/AANS75thAnnivBook.pdf>
- 2007 Annual Meeting Audio Recordings, http://marketplace.aans.org/Portals/3/07_audio_sessions_form.pdf
- 2007 AANS Annual Meeting Press Kit, www.neurosurgerytoday.org/media/press.asp

A Review of Stroke DRG Mortality Rate as a Quality of Care Measure

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Introduction

The quality of healthcare delivered to patients has been a prominent issue for decades. One of the earliest databases was established in 1971 to monitor cardiac surgery patient outcomes with the goal of identifying measures that could improve patient care (14). However, substantial public and political attention was not focused on evaluating the quality of healthcare until after publication in 1999 of the Institute of Medicine report on medical errors. To Err is Human: Building a Safer Health System reported that 44,000 to 98,000 deaths of hospitalized patients each year were attributable to medical errors and that these deaths were preventable (20). Since this report, increased public awareness and political attention has resulted in the propagation of programs aimed at reducing medical errors, improving the quality of healthcare, and identifying potential indicators to measure quality. There also has been a marked increase in the last decade in the number of research awards and published articles related to patient safety (28).

The quality indicators currently identified by the AHRQ include mortality rates and types of procedures. This data is extrapolated from insurance claims. To address concerns about accountability and transparency, in many states hospital-based data and

individual surgeon reports have been posted online and are accessible by the public. These reports also are used by some healthcare insurance companies for interinstitutional comparisons of quality delivered. These quality assessments are the foundation for pay-for-performance programs that already are implemented in many areas of medicine. Ultimately, these programs will expand to incorporate all fields of medicine, including neurosurgery. The AHRQ has identified several quality indicators that impact neurosurgical practice: area-level rate for laminectomy or spinal fusion, carotid endarterectomy, craniotomy mortality, and acute stroke mortality.

Recently, a Tufts-NEMC healthcare insurer reviewed the mortality rate of hospitalized patients admitted under the DRG code of acute stroke. The DRG code is generated in a process that begins at patient discharge or death. Medical records staff reviews the patient chart and compiles the list of ICD-9 codes that describe treatment during the admission. The codes are subsequently forwarded to the insurer and assigned a single DRG code. The insurer compared the Tufts-NEMC mortality rate for the DRG code of acute stroke with that of other academic institutions in Massachusetts and identified hospital mortality rates that were deemed outliers or showed a significant change in mortality rate from year to year. For acute stroke patients admitted to academic institutions in Massachusetts, Tufts-NEMC had the lowest mortality rate in 2003 but in 2004 had the second worst mortality rate in the state. Even though in 2004 the Tufts-NEMC mortality rate for this group of patients did not differ statistically from that of the cohort, the data prompted the institution to evaluate the mortalities of 2004 by internal audit.

Materials and Methods

Tufts-NEMC formed an internal committee to review the outcomes of acute stroke patients identified by the insurer for 2003 and 2004. The committee was composed of representatives from the departments of neurosurgery, neurology and internal medicine. All hospital charts from patients identified by the insurer with a principal DRG code of acute stroke who died

Abstract

Pressure to reduce healthcare costs and improve quality of care has led some insurers to adopt a pay-for-performance system that incorporates quality indicators. Recently, an insurer evaluated the quality of Massachusetts hospitals using mortality rate for patients admitted under the DRG code of acute stroke. Based on the assumption that mortality is an outcome that reflects quality of care, the insurer identified a higher mortality rate for this patient group in 2004 at Tufts-NEMC than at most other academic centers in Massachusetts. The insurer also identified significant increase in mortality rate in this group from 2003 to 2004 at Tufts-NEMC, prompting an internal committee to review all charts for this patient group. The committee evaluated details of patient demographics, severity of illness, code status at the time of death, length of hospitalization, and hospital transfers and concluded that no significant contribution from medical error led to patient mortality. The committee found that simply reviewing DRG code data and in-hospital mortality rates was insufficient to accurately and reliably determine quality of healthcare for the admission diagnosis of acute stroke.

in-hospital in 2003 and 2004 were reviewed and the data was compiled for comparison. Data collected included age, gender, primary diagnosis, co-morbidities, length of stay, code status at the time of death, and transfer status. Code status at the time of death was defined as DNR/DNI or CMO for palliative care. Charts were carefully reviewed for any iatrogenic factors, medical errors, or significant variations from the standard of care that may have contributed to mortality. An unpaired Student-t test was used to calculate statistical significance for some values.

Results

Mortality for patients admitted under the DRG code of acute stroke totaled 21 of 181 (11.6 percent) patients in 2003 and 31 of 204 (15.2 percent) patients in 2004. As compared to the cohort of other academic hospitals in Massachusetts, the lower mortality rate in 2003 was considered statistically significant ($p = 0.10$), but the higher mortality rate in 2004 was not statistically different from that of the cohort. However, the change in mortality rate from 11.6 percent in 2003 to 15.2 percent in 2004 was identified by the insurer. During the 2003–2004 period, no significant changes were made in policy or protocol management that might have affected the sample population.

Data from all 21 patient charts for 2003 were reviewed and compared with data from the 31 patient charts for 2004. Results are illustrated in Table 1. No significant difference existed between the mean age or gender of the patients. In each of the two years studied a similar number of patients presented either with neurological exams consistent with brain death or with such poor neurological condition that treatment was considered medically futile. These patients progressed rapidly to death within 24 hours of admission and were classified with length of stay of less than one day. For patients whose length of stay was greater than one day, hospitalization was significantly shorter in 2004 than in 2003 (4.7 versus 14.6, $p = 0.013$). Given that a few patients in 2003 had lengths of stay well beyond the mean (more than 60 days), which may have skewed the mean calculations, the median (10 in 2003 and three in 2004) and mode (three in each year) were calculated as well. A significant portion of the patients in each of the years was transferred from another acute care institution (66.7 percent in 2003 and 54.8 percent in 2004).

In 2003, at time of death all of the patients were designated CMO, DNR/DNI, or brain dead. In 2004,

one patient died from a hemothorax as a complication from a central venous line placement; in two cases family discussions had been initiated toward CMO status; and the remaining 28 patients were CMO, DNR/DNI, or brain dead at the time of death.

The deaths of two patients in 2003 could be categorized as unexpected. One of these patients was incorrectly categorized by DRG code. The patient underwent a carotid endarterectomy and had a history of a stroke but did not have an acute cerebrovascular accident. The patient developed a myocardial infarction and bacteremia postoperatively and ultimately died after being designated CMO by the family. In the second case, a patient with a large intraparenchymal hemorrhage had an episode of pulseless electrical activity, and there may have been a delay in addressing it and calling a code. However this patient's prognosis was very poor because of the size and location of the presenting intracerebral hematoma.

In 2004, there was one preventable death. This patient died from a hemothorax after a central venous line placement. The patient presented initially with a left frontal lobe hemorrhage from a cystic mass. An autopsy was not performed, but this patient likely had a tumor and thus should not have received the primary diagnosis of acute stroke at admission. Another patient in 2004 died of a complication, but the treatment given was appropriate. This patient was an elderly woman who developed a thalamic hemorrhage after receiving tissue plasminogen activator when she presented to the emergency department with hemiplegia and a negative head CT scan. Ultimately, the family converted the patient's code status to DNR/DNI given her poor functional status, and the patient died from respiratory arrest secondary to aspiration pneumonia.

Overall, no significant differences other than length of stay were identified between the groups.

Discussion

With current national healthcare expenditures at a historic peak and future costs estimated to rise precipitously, cost-saving and quality-improving measures are becoming increasingly prevalent. Healthcare providers currently are leaning toward pay-for-performance systems in which physicians and institutions are rewarded for excellence of care. The goal of pay for performance is to reward quality of care by increasing reimbursement to institutions or physicians based on their performance, with the expectation that there will be decreases

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Key Words:
diagnosis-related group, healthcare, outcomes assessment, pay for performance, quality measurement

Abbreviations
AHRQ = Agency for Healthcare Research and Quality; CMO = comfort measures only; DRG = diagnosis-related group; DNR/DNI = do not resuscitate/do not intubate; ICD-9 = International Statistical Classification of Diseases and Related Health Problems, Ninth Revision

Stroke DRG Mortality Rate as a Measure of Quality of Care

PEER-REVIEWED RESEARCH

in long-term costs because care will be improved and complications will be prevented.

The pay-for-performance model is based on the ideas that the selected indicators accurately depict quality of care and that improved performance translates into decreased healthcare expenditures, but some of the quality indicators have not been thoroughly validated. Safavi summarizes many of the potential pitfalls with pay-for-performance systems when overemphasis is placed on measuring indicators at the detriment to quality of care (27).

In our series, the insurer grouped many differing pathological entities under the DRG code of acute stroke. These entities included diagnoses that have considerable variation in their prognoses, such as ischemic infarcts, intraparenchymal hemorrhages, acute subdural hemorrhages and aneurysmal subarachnoid hemorrhages.

Although some risk adjustment is incorporated, the current DRG codes do not convey a sense of illness severity. The grade of subarachnoid hemorrhage is not considered, which clearly has a significant impact on the prognosis (1, 11, 17–19). For example, DRG codes do not differentiate between patients who present with a subarachnoid hemorrhage of Hunt and Hess grade V or grade I. Although coding for additional comorbidities to some extent does convey the overall medical health of the patient, the neurological severity of each diagnosis is not represented in the current AHRQ system. This is problematic when comparing stroke mortality rates because a high percentage of the

patients are transferred in moribund condition from other institutions. A change in referral patterns from year to year could significantly affect the number of patients in poor neurological condition being transferred to an academic medical center. Some other entities are attempting to incorporate measures that adjust for illness severity using a more specific coding system, but specific modifiers currently are not being applied to the DRG code of acute stroke.

The neurosurgical literature indicates a poor prognosis for patients with intracranial hemorrhages, bilateral fixed and dilated pupils, large left middle cerebral artery strokes, large dominant hemisphere intra-parenchymal hemorrhages, and Hunt and Hess grade V aneurysmal subarachnoid hemorrhages (1, 11, 13, 15, 17, 21–23, 25). Although overall survival rates can be increased by aggressive surgical interventions such as tracheostomy, gastric feeding tubes, and craniectomies for large strokes and hemorrhages, long-term functional status remains poor especially for elderly patients (1, 11, 13, 15, 22, 23, 25). Therefore aggressive measures such as tracheostomy and gastrostomy placement along with surgical decompression and craniectomies will improve outcomes as evaluated strictly by mortality but may not improve the quality of care or accurately reflect patient desires and family wishes. Also, aggressive treatments to decrease mortality rates while not improving functional outcomes may actually increase healthcare expenditures and the socioeconomic burden.

In attempting to reduce complication rates and avoid errors, regionalization of medical care has already been considered. In other surgical specialties, reports have documented a lower risk of complications with higher procedural volume (3–6, 7, 10, 12), but regionalization may have an associated increased cost per patient (3). Published quality evaluations may steer patients toward specialty centers, which preferentially treat high volumes of specific types of cases. In primary care, some centers have decided to focus patient management on complicated diabetic care whereas in neurosurgery, centralization of resources to treat diseases such as aneurysmal subarachnoid hemorrhages has occurred (3).

Although interinstitutional evaluations typically distinguish academic institutions from community hospitals, some discrepancies may exist within these designations. Institutions may be considered academic for specific specialties, but may not have residency training programs for other specialties. Furthermore, community institutions that do not have neurosurgi-

TABLE 1

Comparison of Patients With Acute Stroke Mortality in 2003 and 2004

	2003	2004
No. of patients	21	31
Age		
Mean ($p = 0.649$)	67.6	69.6
Range	41–84	46–93
Gender (M:F)	11:10	13:18
Length of stay		
< 1 day (no. of patients)	4	5
> 1 day (no. of patients)	17	26
No. of days		
Mean ($p = 0.013$)	14.6	4.7
Range	1–62	1–19
Median	10	3
Mode	3	3
No. of transfers from other facilities (%)	14 (66.7%)	17 (54.8%)
Code status at time of death		
CMO	17	22
DNR/DNI	3	4
Brain death	1	2
Full code	0	3*
Diagnosis		
Ischemic infarct	6	8
Intracerebral hemorrhage	11	17
Subarachnoid hemorrhage	3	4
Acute subdural hematoma	0	2
Other	1†	0
Complication	2	2

CMO, comfort measures only; DNR/DNI, do not resuscitate/do not intubate

*In two cases family discussion toward CMO status had been initiated.

†One patient was incorrectly categorized under the DRG code of acute stroke.

cal coverage are likely to transfer cases such as massive strokes and intracerebral hemorrhages to alternate institutions and therefore may have a biased lower mortality rate because higher risk patients are transferred to other facilities. In our series a significant portion of the mortality sample included transfers from other institutions (66.7 percent in 2003 and 54.8 percent in 2004).

Pressure to rank highly on public report cards may lead institutions to devise strategies that improve their outcome values while not necessarily improving quality of care. Notably, in the United Kingdom the exclusion of patients from the evaluated population was found to be the greatest predictor of quality achievement in primary care (9).

In fact, there are several ways for hospitals to lower their mortality rate for acute stroke DRG patients that have nothing to do with improved quality of care. One way is to have no emergency neurosurgery call coverage. Then all devastating cerebrovascular accidents must be transferred, resulting in a favorable stroke mortality rate at the referring institution. As mentioned previously, aggressive treatment of comatose patients with tracheostomies and gastrostomies would help decrease mortality but would be unlikely to improve their functional status or quality of care. Rapidly transferring CMO patients to hospice care, including to in-hospital hospice wards that are distinct from the institution itself, would avoid in-hospital mortality designation. Also, if patients with transient neurological symptoms such as transient ischemic attack are given an MRI scan, those with scans showing a possible tiny infarct can be coded with an admission diagnosis of stroke, resulting in an increased denominator for the complication rate and a decreased percentage of complications and mortality.

Other strategies may involve the under-reporting of errors or complications. Since publication of the IOM report on medical errors, significant research and effort has gone into reducing the number of adverse events in healthcare. Many studies have shown some improvement in reporting and reduction of errors after implementing systematic measures, but the reporting of errors carries with it a persistent stigma (16, 26). Many reports have stressed the importance of nonpunitive reporting for this system to function effectively (2, 16, 24), and others have advocated the need for tort reform to precede significant and accurate reporting of errors. Given the high number of malpractice lawsuits in the United States, a role in litigation for error reporting and quality rankings is sure to be found.

When Tufts-NEMC first received the report indicating that its DRG acute stroke mortality rate in 2004 was the second to worst in the state, we hoped that our internal review of medical records of patients who died would identify areas for improvement. However, a thorough review of the records showed that almost all of these patients arrived in a moribund condition and, after family discussions, were designated CMO. In 2004, 28 of the 31 patients were designated CMO, DNR/DNI or declared brain dead within a few days of admission. An additional two patients were in the process of being designated CMO when they died. The patient who died of the hemothorax after a central venous line placement had already triggered an institution-wide change in policy regarding central venous line placement that resulted in additional training and accreditation of physicians placing central lines.

Our analysis identified little that we could institute to improve the outcome in this cohort of patients. No apparent differences were found when comparing age, gender, percent of transfers, code status, diagnoses or complications. No change in attending neurosurgery staff or policy occurred during the 2003–2004 interval, but residents change services yearly at the institution. Perhaps an earlier initiation of family discussion would have contributed to shorter lengths of stay.

While the stated goal of pay-for-performance programs is to increase healthcare quality by applying specific measures and awarding better results, clearly this presently is not the case. Further, general availability of these results and rankings can adversely influence an institution's public image and, in the current digital era, this information might negatively impact patient referrals or patient volume.

Conclusions

A beneficial role certainly exists in the healthcare field for quality measures and standardization of some aspects of clinical care. However, these measures should accurately and reliably reflect quality of care and adjust for factors that inherently vary in the care of individual patients. Some medical fields have quality indicators derived from admission or discharge coding that do account for the severity of disease. Currently the Veterans Health Administration tracks risk-adjusted mortality associated with neurosurgical procedures through the Neurosurgery Consultants Board (8). Additional efforts should similarly review and expand quality criteria for the field of neurosurgery.

Ideally, centralized data collection would provide

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the greatest accuracy when evaluating standard of care and would allow for the most precise risk stratification. Data on the number of cases transferred into and out of an institution also could prove useful as a quality indicator.

Lastly, reported results should be simplified into broader categories whether or not standards of care are met, and ranked lists perhaps should be avoided. In Tufts-NEMC's review, the worse mortality rate from 2004 was not statistically significant as compared to the cohort. However, it is unlikely that consumers will

consider statistical variability if ranked results are published. Fair reporting may be better achieved after a period of nonpublic quality evaluations to allow time for further corrective adjustments.

The opportunity currently exists for neurosurgeons to learn from the experience of other medical specialties and to direct the development of neurosurgical quality indicators. The involvement of neurosurgeons in the development of neurosurgical quality indicators is essential if these measures are truly to improve the quality of care for our patients. ■

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TIMELINE: Neurosurgery Through History

How Neurosurgeons Spent Summer Vacation

MICHAEL SCHULDER, MD

At one time or another, most neurosurgeons have been encouraged to seek appropriate balance in their lives. Advised to prioritize time among the often competing demands of profession, family, and spiritual and physical well-being, most of us may honor the idea more in the breach than in the observance. One may well wonder what the pioneers of neurosurgery did to relax in their spare time.

There is little if any information on how premodern surgeons “balanced” their lives. Besides, that sort of question would have been irrelevant. For all but a privileged very few, the concept of leisure time or of doing something besides struggling for existence is mostly a product of modern society. And the idea of biographies or memoirs dealing with the personal life of a subject is an even newer development. We can only speculate as to whether Galen wrestled or if Ambroise Pare played court tennis. However, given the youth of our specialty, we do know what our more recent forebears did for enjoyment.

Outdoor activity was and remains an important part of neurosurgeons’ leisure time. To some extent and unsurprisingly, the specifics reflect the individual’s time and place. Hunting and fishing were favorites of Norman Dott of Scotland and Eustace Semmes of Tennessee. Ball-based sports are frequently noted in the literature, especially tennis and golf. Victor Horsley enjoyed both sports, only two decades or so after the invention of “lawn” tennis. Many readers no doubt have seen the photo of Harvey Cushing and Walter Dandy, racquets in hand on a tennis court at the Jekyll Island resort. Cushing, who had a tennis court at his home in Brookline, was a starting member of the Yale baseball team and an agile gymnast. Dandy played baseball and golf while in college at the University of Missouri.

Not all extracurricular pursuits by neuro-



Walter Dandy (left) and Harvey Cushing at the Jekyll Island resort.

surgeons involve sports. In particular, music has also been a regular theme. Fedor Krause and Gosta Norlen took great pleasure in playing the piano, while Gerard Guiot went a step further. He rebuilt an antique organ that he played expertly. And of course, many prominent neurosurgeons have had various nonmedical scholarly interests as a significant part of their lives.

If we are to function well as neurosurgeons we have to find some space for activities that provide the right balance in our lives. The precedents lie in the generations before us. ■

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What Have You Been Doing (Philately) for Fun?

A conventional train of thought might lead one to the conclusion that today’s neurosurgeons mainly occupy their leisure time with tennis, golf or other genteel sports. However, neither of the top two interests selected by neurosurgeons in the AANS census involved sports, genteel or otherwise, and one wasn’t even invented when Cushing first resected a tumor.

The far-and-away top two interests encompass the contemporary and the ancient: computers and music (although the use of a computer to play virtual golf or the latest Philip Glass symphony cannot be ruled out, and its capacity for multipurpose use may well account for the “computers” top ranking).

The Special Interest portion of the AANS census offers a window into what AANS members today are doing in their spare time. The 89 selections offered in no particular order on the online census form reflect wide-ranging interests: various kinds of collecting (books, wine, numismatics [coins], antiques, philately [stamps], and cars); architecture; marine navigation; weather satellites; arts (music, painting, performing arts/film/dance, poetry, photography, and



Neurosurgeons James Rose (above) and Theodore Schwartz perform with the Neurosurgical Jazz Quintet during the 75th AANS Annual Meeting in April.



literature/mythology; ornithology); economics; machines/tools/inventions; wilderness living; and juggling. (Yes, all of the aforementioned avocations were selected at least once).

In addition to computers and music, the “neurosurgical top 10” list of interests is composed of sports (golf, fishing, sailing/boating, and the related category of sports/medicine), and arts (art and photography). Rounding out the list are flying (a sport?) and philosophy.

Whatever path to rest and relaxation is taken, the importance of seeking out ways to revitalize and gain fresh perspective remains current for neurosurgeons.

Medicare's Physician Quality Improvement Program

Neurosurgery Works Toward Meaningful Quality Improvement Systems

The Tax Relief and Health Care Act of 2006, which halted the 5 percent physician payment cut scheduled for 2007, included major provisions that were hastily drafted without stakeholder input. One such provision was the creation of an insufficiently funded and overly burdensome quality reporting program called the 2007 Physician Quality Reporting Initiative.

The PQRI is a voluntary Medicare quality reporting program that offers financial incentives for eligible healthcare professionals who participate. Those who successfully report on a designated set of quality measures for services paid under the Medicare physician fee schedule may earn a bonus payment of up to 1.5 percent of their total charges for all Medicare-provided services during the specified period. A major concern with the PQRI is that it may do little to actually improve quality in patient care.

Struggling to make sense of this poorly structured program, the Centers for Medicare and Medicaid Services only recently began to issue program instructions for 2007. The CMS released the following details as of April 2007:

Eligibility—Professionals who are paid under the Medicare physician fee schedule, including physicians, chiropractors, physician assistants and others, are eligible to participate. Furthermore, all Medicare-enrolled eligible professionals may participate, regardless of whether they have accepted assignment on all Medicare claims.

Quality Measures—The 2007 PQRI includes 74 quality measures, which are posted on the CMS Web site. The Web site also includes measure specifications, which describe when each measure is reportable and which quality codes to report. Measures are not specialty specific, and physicians may report on any measure that is applicable to

Figure 1: PQRI Measures for Neurosurgeons

PERIOPERATIVE CARE MEASURES

- Timing of antibiotic prophylaxis—ordering physician
- Selection of prophylactic antibiotic—first or second generation cephalosporin
- Discontinuation of prophylactic antibiotics
- Venous thromboembolism prophylaxis
- Timing of prophylactic antibiotic—Administering physician

STROKE AND STROKE REHABILITATION

- CT or MRI reports
- Carotid imaging reports
- Deep vein thrombosis prophylaxis for ischemic stroke or intracranial hemorrhage
- Antiplatelet therapy for discharged patients
- Anticoagulant therapy prescribed for atrial fibrillation at discharge
- Tissue plasminogen activator (t-PA) considered
- Screening for dysphagia
- Consideration of rehabilitation services

the services he or she provides, although a number of measures, shown in Figure 1, are applicable to neurosurgery.

Reporting—The reporting period is from July 1 through Dec. 31, 2007. There is no special form or process that physicians must go through to register for the PQRI program. Quality data simply will be collected through claims-based reporting, and participants become eligible as soon as they start submitting quality codes with their Medicare claims. Quality codes must be submitted concurrently with the claim for the associated service and may be reported on paper or electronic claims. In order to analyze data at the individual level, the CMS will require physicians to use a National Provider Identifier on all claims.

Determination of Successful Reporting—Eligibility for the bonus payment is based on meeting certain reporting requirements.

Successful reporting is defined as reporting a quality measure in 80 percent of the cases in which the professional had the opportunity to report those codes. When no more than three measures are applicable to an individual physician's patient case mix, each measure must be reported in at least 80 percent of the applicable cases. When four or more measures are applicable, the 80 percent threshold must be met on at least three of the measures.

Bonus Payment—Successful reporters will receive a bonus payment, subject to a cap, equal to 1.5 percent of total allowed charges for all services billed under the Medicare physician fee schedule during the six-month reporting period. A single, consolidated bonus payment will be provided in mid-2008 and the CMS will distribute the bonus payments to the holder of the taxpayer identification number for

disbursement among the eligible professionals. While the precise amount of the bonus payment will depend on the individual physician's Medicare practice, it is anticipated that neurosurgeons will receive between \$500 and \$2,000 for participating in the program.

Validation—The CMS is required to validate whether all measures applicable to a professional have been reported. Using sampling, the CMS will focus on those who report on fewer than three measures. The agency is in the process of developing an informal inquiry process for those who wish to appeal a finding that the physician is not eligible to receive some or all of the bonus payment.

Feedback—In 2008, the CMS will provide participants with a single, confidential report that includes their performance data. Quality data reported by participants in 2007 will not be publicly reported.

PQRI Participation Requires Careful Evaluation

Organized neurosurgery enthusiastically supports programs that are truly designed to improve the quality of surgical care. However, at present it appears that the PQRI does not meet this test. Most physicians have no experience in quality reporting and do not have the necessary health information technology and administrative infrastructures in place to participate in such a system. Furthermore, the small financial incentive provided in 2007 is unlikely to generate enough money to cover the costs of participating in the program. For instance, a large academic medical center with more than 600 physicians on the medical staff estimated that participating in the PQRI would result in a \$700 bonus per physician, which is not nearly enough money to cover the time and cost of reporting. Neurosurgeons should carefully evaluate the PQRI program costs and benefits, as shown in Figure 2, to determine whether the benefits of participation will outweigh the administrative costs and complexity of preparing their practices for the program.

However, neurosurgeons also should be

aware that physician quality reporting likely is here to stay. There are an estimated 130 pay-for-performance programs nationwide and more than one-half of the nation's HMOs currently use P4P in contracts with hospitals and doctors. Federal law requires Medicare to implement a mandatory hospital P4P program by 2009, and a recent Government Accountability Office study found physician outliers who are overly expensive and inefficient, thereby fueling policymakers' desire to incorporate quality and cost measures into the Medicare physician payment system. The PQRI program therefore may help neurosurgeons familiarize themselves with quality reporting systems before they become a mandatory part of physician practice.

Quality Reporting in 2008 and Beyond

The Tax Relief and Health Care Act of 2006 requires the CMS to implement a quality reporting program in 2008; however the language is vague and leaves the CMS with broad authority to design the program as the agency sees fit. The AANS and the CNS have a number of specific concerns about the new law among them that there is:

- little opportunity for physician input;
- no indication of whether this will morph into P4P or whether it will be voluntary or mandatory;
- no indication if bonus payments will be available; and
- no indication of what measures will be included.

There are two bright spots in this legislation. First, the CMS must establish a mechanism whereby physicians may report quality measures through medical registries. Second, the law established the \$1.35 billion Physician Assistance and Quality Initiative Fund, and the CMS may use this money for quality improvement activities or to stabilize the sustainable growth rate and reduce the magnitude of the 2008 physician payment cut.

Sharing similar concerns regarding the 2008 program, the AANS and the CNS, working with the Alliance of Specialty Medicine, drafted legislation that would modify the quality provisions of the Tax Relief and Health Care Act of 2006. Introduced on May 24 by Sens. Benjamin Cardin, D-Md., and Arlen Specter, R-Pa., S. 1519, the Voluntary Medicare Quality Reporting Act of 2007 would:

- require that the 2007 quality reporting program be evaluated prior to implementing a permanent program;
- defer the implementation date of a permanent program until January 2010;
- make clear that the reporting program is *voluntary*;
- ensure that quality measures go through the AMA's Physician Consortium for Performance Improvement; and
- prohibit the CMS from implementing quality measures outside of an established process.

Continued on page 36

Figure 2: The Costs and Benefits of PQRI Participation

BENEFITS	COSTS
<ul style="list-style-type: none"> ■ Opportunity for neurosurgeons to gain experience in data collection and quality reporting. 	<ul style="list-style-type: none"> ■ Will add an additional administrative burden on the practice, requiring changes to medical and billing record processes that will result in more physician and staff time devoted to administrative matters..
<ul style="list-style-type: none"> ■ Opportunity for neurosurgeons to learn about the quality of your care before payment is linked to performance. 	<ul style="list-style-type: none"> ■ Hastily-crafted process measures do not measure neurosurgical outcomes and will not provide useful quality data to neurosurgeons.
<ul style="list-style-type: none"> ■ Opportunity to earn a small bonus payment. 	<ul style="list-style-type: none"> ■ Bonus payment unlikely to cover the costs of participation payment.

A similar bill will likely be introduced in the House of Representatives by Reps. Bart Gordon, D-Tenn., and John Shadegg, R-Ariz.

The AANS and the CNS will continue to pressure Congress to reform the sustainable growth rate before physicians are asked to undertake a new commitment of time and resources to report quality measures. They have recommended, among other things, that the CMS use the Physician Assistance and Quality Initiative Fund to help avert the expected 10 percent physician payment cut in 2008 rather than spending these funds on quality reporting bonus payments.

Response to Quality Improvement Trend

Many physicians and their representatives have involved themselves in the quality improvement trend to shape it from the physician’s perspective. Key players in the physician quality movement are shown in Figure 3.

Recognizing that organized neurosurgery cannot just sit on the sidelines, the AANS and the CNS are working through their Washington Committee Quality Improvement Workgroup to participate in a number of quality improvement initiatives. While organized neurosurgery believes that reporting outcomes to registries is the superior way to assess and improve surgical

quality, the Quality Improvement Workgroup nevertheless is working with the AMA Physician Consortium for Performance Improvement to develop process measures that are applicable to neurosurgery. One current PCPI initiative is the development of quality measures for spinal stenosis in a cooperative effort by the AANS, the CNS, the North American Spine Society, and the American Academy of Orthopaedic Surgeons.

Recently, the AANS and the CNS provided feedback to the National Committee for Quality Assurance for its Back Pain Recognition Program and will continue to work with the NCQA to further refine the quality measures and data collection tools. The NCQA recently released the 2007 program requirements, which use 16 evidence-based criteria to identify high-quality back pain physicians. Private health plans may require physicians to participate in the “voluntary” program in order to qualify for spine care services reimbursement or bonus payment.

Lastly, the AANS and the CNS are working with the CMS and with other specialty societies to develop standardized data collection and case-adjustment systems that will allow outcomes reporting. Because there already exist registries in which neurosurgeons may participate—the Carotid Artery Revascular-

ization and Endarterectomy Registry and the American College of Surgeons’ National Surgical Quality Improvement Program—and outcomes registries sponsored by the AANS and the CNS may be implemented in the future, in 2008 there may be opportunities for physicians to earn bonuses by reporting to registries. The Quality Improvement Workgroup is working to develop an outcomes registry system that will ultimately allow practicing neurosurgeons to satisfy both ABNS Maintenance of Certification case reporting and Medicare and other third-party payers’ P4P requirements. The CMS has expressed interest in these initiatives, although it has not yet determined how it will incorporate such registry participation into its future quality program.

Developing Meaningful Systems

Sparse evidence exists on the efficacy of a P4P program in Medicare. The only thing that researchers seem to agree on is that P4P is complex and that further research is needed. Despite the lack of proof that P4P will improve the quality of care and save healthcare dollars, Congress, the CMS, employers, patients, health plans and others are pressing forward with quality reporting programs. The AANS and the CNS must be active participants in developing reasonable and meaningful quality improvement systems. To sit on the sidelines with our heads in the sand will not make this go away and neurosurgeons will nevertheless be forced to participate in ill-conceived quality programs that do nothing to improve patient care. ■

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For More Information

- AANS/CNS Washington Committee Activities, www.aans.org/legislative/aans/washington_c.asp
- 2007 Physician Quality Reporting Initiative, www.cms.hhs.gov/PQRI
- National Provider Identifier, www.cms.hhs.gov/NationalProviderStand/
- NCQA Back Pain Recognition Program, <http://web.ncqa.org/tabid/137/Default.aspx>

Figure 3: Key Players in the Physician Quality Movement

- **AMA Physician Consortium for Quality Improvement**—Physician-led, consensus-driven group that has developed 174 measures to date, 60 of which are included in the 2007 PQRI. Daniel K. Resnick, MD, and Michael G. Kaiser, MD, are the AANS/CNS representatives to the PCPI. www.ama-assn.org/ama/pub/category/2946.html
- **National Quality Forum**—Endorses physician and other quality measures based on validity and reliability. Membership is broad and includes consumer, provider, purchaser, and research organizations. The AANS and CNS will join the NQF this summer. www.qualityforum.org
- **Ambulatory Quality Alliance**—Implements marketplace measures that have been developed by the PCPI and others. Includes a broad range of stakeholder groups, including physicians, health plans, government agencies, and device manufacturers. Gary M. Bloomgarden, MD, is the AANS/CNS representative to the AQA. www.ambulatoryqualityalliance.org
- **Surgical Quality Alliance**—Launched by surgical societies to ensure that the surgical perspective is recognized by quality improvement organizations. Robert E. Harbaugh, MD, and Gary M. Bloomgarden, MD, are the AANS/CNS representatives to the SQA.
- **National Committee on Quality Assurance**—Accredits and certifies healthcare organizations, recognizes physicians and physician groups in key clinical areas, and manages HEDIS, the tool used by health plans to measure and report on areas of performance. <http://web.ncqa.org>

75th AANS President Takes Office

2007–2008 AANS Executive Committee Elected

Voting members of the AANS elected the association's new Executive Committee on April 16 at the annual business meeting. Committee members took office at the conclusion of the 75th AANS Annual Meeting. The Executive Committee is composed of the president, president-elect, vice president, secretary, treasurer, and immediate past president. All officers serve one-year terms except the secretary and treasurer, who each serve a three-year term.

JON H. ROBERTSON, MD, is president of the AANS. An active member of the AANS since 1983, he has served on the AANS Board of Directors since 1999, most recently finishing a one-year term as president-elect and a three-year term as secretary. He served as chair of the Annual Meeting Committee in 1994. Dr. Robertson was named professor and chair of the Department of Neurosurgery at the University of Tennessee Health Science Center in Memphis in 1997. He has been a practicing member of the Semmes-Murphey Neurologic and Spine Institute since 1979.

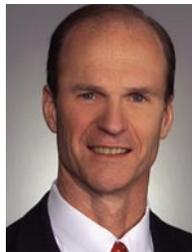


DONALD O. QUEST, MD, was named past president of the AANS. A member of the AANS since 1979, he has served on the AANS Board of Directors as vice president (1994–1995), as Scientific Program Committee chair (1990–1991) and Annual Meeting chair (1991–1992). He was elected a director of the American Board of Neurological



Surgery in 1994, serving as secretary (1996–1999) and chair (1999–2000). He was elected to the Residency Review Committee for Neurological Surgery in 2000 and was chair from 2004 to 2005. He was president of the American Academy of Neurological Surgery from 2001 to 2002, and president of the Congress of Neurological Surgeons from 1986 to 1987. He is the J. Lawrence Pool Professor of Neurological Surgery at Columbia University, College of Physicians and Surgeons, New York, N.Y.

JAMES R. BEAN, MD, is AANS president-elect. An active member of the AANS since 1988, Dr. Bean just completed a three-year term as AANS treasurer. He serves on the AANS Executive, Finance and Long-Range Planning committees, on the NREF Executive Council and on the NeurosurgeryPAC board of directors. He was editor of the *AANS Bulletin* from 2003 to 2005. He has been AANS appointee to the AANS/CNS Council of State Neurosurgical Societies since 1999. Dr. Bean currently is president of Neurosurgical Associates PSC in Lexington, Ky.



TROY M. TIPPETT, MD, FACS, is AANS vice president. A member of the AANS since 1979, he has served on the AANS Board of Directors and as chair of the AANS/CNS Washington Committee since 2004. Dr. Tippett received the Distinguished Service Award from the AANS in 2003. He has been in private practice and a member of the Neurosurgical Group in Pensacola, Fla., since 1976, and medical director of this practice since 1988.



JAMES T. RUTKA, MD, PhD, FRCS, is AANS secretary for the second year of a three-year term. An active member of the AANS since 1983, he has served on the AANS



Board of Directors since 2003. He served as chair of the 2006 AANS Annual Meeting and as chair of the Scientific Program Committee in 2005. Dr. Rutka has been on the neurosurgical staff at the Hospital for Sick Children in Toronto since 1990. He is currently director of the Arthur and Sonia Labatt Brain Tumour Research Centre. He was appointed chair of the Division of Neurosurgery at the University of Toronto in 1998, and the Dan Family Chair in 1999. He has been professor in the Department of Surgery at the University of Toronto since 1999.

PAUL C. MCCORMICK, MD, is treasurer for the first year of a three-year term. An active member of the AANS since 1992, Dr. McCormick served on the AANS Board of



Directors from 2002 to 2005. He was chair of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves from 2000 to 2001, and he served as chair of the 2001 AANS Annual Meeting and as chair of the Scientific Program Committee for the 2000 AANS Annual Meeting. Dr. McCormick has been on the staff at Columbia-Presbyterian Medical Center since 1990. In July 2006 he was appointed the Herbert and Linda Gallen Professor of Clinical Neurological Surgery at Columbia University, College of Physicians and Surgeons. ■

Negligent Credentialing

Hospital Must Monitor Its Doctors' Qualifications, Surgical Activities

The number of negligent credentialing claims filed in conjunction with traditional medical malpractice claims has increased significantly. Lawyers for plaintiff patients view healthcare organizations as having “deep pockets,” particularly now that some physicians carry less malpractice insurance than in the past.

Careful adherence to a healthcare organization's credentialing policy is absolutely critical for decreasing the risk of related liability claims. To illustrate this point, this article explores a case of negligence against a neurosurgeon that involved posterior cervical spine surgery with instrumentation and a claim of negligent credentialing against the defendant hospital. The multi-million-dollar verdict is indicative of the jury's belief that a hospital is responsible for monitoring the qualifications and surgical activities of the doctors who practice in that facility.

The Case

The plaintiff, a 44-year-old male, experienced dizziness upon his return from a cruise. He was subsequently diagnosed with C3–C4 stenosis and C1–C2 instability. The defendant neurosurgeon performed an anterior and posterior cervical spine surgery with instrumentation. During the course of the anterior surgery, the neurosurgeon was unable to place the plates and screws. He placed the plaintiff into a halo and performed the posterior surgery three days later.

The posterior surgery involved two Luque rods, each 5.5 mm in diameter, which were placed along the plaintiff's cervical spine and wrapped with sublaminar wires. The evoked potentials (monitoring the plaintiff's spinal cord) were lost when the wires were being passed around the lamina.

The plaintiff suffered tremors for approximately one year following the surgery and it was subsequently discovered that the rods

had migrated from the cervical spine through the foramen magnum and into the brain. The plaintiff underwent surgery to have the rods removed. Although he initially showed signs of improvement, his condition soon deteriorated and he required a second surgery to decompress the spine and remove an additional sublaminar wire which remained. The plaintiff did not show significant signs of improvement after the second surgery and ultimately underwent a third surgery to fuse the C1 vertebra to his skull in an attempt to provide cervical stability.

The plaintiff was diagnosed with a permanent cerebellar and spinal cord injury as a result of the movement of the Luque rods. He is confined to a wheelchair, suffers from chronic pain requiring morphine and neurotin, and experiences significant difficulties processing information. He is totally disabled from employment.

The plaintiff sued the neurosurgeon and the hospital. The neurosurgeon filed for bankruptcy, resulting in a stay of the case against him. The plaintiff alleged that the hospital improperly credentialed the neurosurgeon for posterior cervical spine surgery when the neurosurgeon was not qualified to perform that particular surgery. The plaintiff also claimed that the neurosurgeon had failed to meet the standard of care during the course of the posterior surgery.

The plaintiff's expert testified at trial that he had neither seen nor heard of the rod construct utilized by the neurosurgeon. The plaintiff also introduced the package insert from the titanium rods which stated “not for use in cervical spine.” Notably, the neurosurgeon conceded at trial that it was the first time he had attempted the surgery.

The hospital argued at trial that the plaintiff's claims for malpractice were against the neurosurgeon and that it bore no responsibility for the neurosurgeon's actions. The hospital maintained that the neurosurgeon was properly credentialed

and came forward with evidence showing that the neurosurgeon was board certified, had been practicing for more than 10 years prior to the surgery in question, and had attended all required continuing medical education units. Concerning the instrumentation used in the surgery, the hospital argued that such decisions were within the sole discretion of the neurosurgeon.

The jury found that the neurosurgeon was negligent and that the hospital failed to properly credential the neurosurgeon. The plaintiff was awarded in excess of \$11 million in damages.

Defense Perspective

The disturbing ease with which plaintiffs' attorneys are able to simply add negligent credentialing claims to traditional malpractice claims can be explained, at least in part, by a growing number of state court decisions that have expanded the meaning of negligent credentialing. These decisions have found that a claim for negligent credentialing is a claim against a healthcare provider for a departure from the accepted standard of care and, consequently, is to be treated as a healthcare liability claim. The courts in these decisions have concluded that a hospital's duty to credential physicians is interwoven with delivering quality medical care, and that any acts or omissions by a hospital in credentialing a physician are an inseparable part of the treatment provided to a patient.

In order to prevail under a corporate negligence claim based on a breach of the credentialing duty, a plaintiff must prove that:

- the hospital credentialed the physician and, therefore, owed the patient a duty to exercise reasonable care in the selection and supervision of the physician;
- the hospital failed to exercise

reasonable care because it knew, or should have known, that the physician was incompetent or otherwise unfit; and

■ the hospital's negligence in the selection and supervision of the physician was a proximate cause of the injuries suffered by the patient.

In order to successfully defend a negligent credentialing claim, it is essential that a hospital or other healthcare entity provide evidence demonstrating that:

1. the hospital required completion of its medical staff application and verified the accuracy of the applicant's statements;
2. the hospital solicited information from the applicant's peers, including peers not referenced in the application, who have knowledge concerning the applicant's education, training, experience, competence and ethical character;

3. the hospital determined whether the applicant is currently licensed to practice in the state and whether the license has even been suspended or otherwise challenged; and

4. the hospital inquired whether the applicant has ever been involved in any adverse malpractice action or has experienced a loss of membership or privileges at any other hospital or other provider.

In the credentialing process, information from other sources such as the National Practitioner Databank, the AMA Physician Masterfile and the Federation of State Medical Boards' Physician Disciplinary Databank also should be considered.

As this case demonstrates, many juries are willing to hold a healthcare organization liable under a negligent credentialing theory in the event of a bad surgical result. The slightest hint of something "off" in the credentialing process can open the door to

significant exposure. Thus, it is absolutely essential for a healthcare organization to comply with its credentialing policy and that it document its efforts in complying with the policy.

Lastly, healthcare organizations need to pay close attention to whether or not documents and other materials generated during the course of the credentialing process are privileged. Traditionally, documents relating to peer review and credentialing have been privileged in order to promote frank and open review of surgical cases. However, a number of recent state court decisions have eroded the extent of the privilege applicable to materials generated during the peer-review and credentialing process. ■

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Monica C. Wehby, MD, is a neurosurgeon with Microneurosurgical Consultants P.C. in Portland, Ore.

NEUROSURGEON

The Central Arkansas Veterans Healthcare System and affiliate University of Arkansas for Medical Sciences are seeking a full time BC/BE Neurosurgeon specializing in craniotomies, neck, and back surgeries. The candidate should have an interest in teaching and developing clinical research. US Citizens only. Send letter and CV to Steve Pettit HRMS (05C), Central Arkansas Veterans Healthcare System, 2200 Fort Roots Drive(05C), North Little Rock, AR 72114-1706. Tel: 501-257-1431 Fax 501-257-1774.

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The First Plan for National Health Insurance

Cushing's Influence on U.S. Health Policy and a U.S. President

MICHAEL SCHULDER, MD, KRISTIN KRAUS, MSc,
WILLIAM T. COULDWELL, MD, PhD

A national comprehensive health insurance plan is not a new idea in the United States, although the rhetoric of the 2008 presidential campaign may sound as though it is. When Franklin D. Roosevelt became U.S. president in 1933, in the midst of the Great Depression, he proposed a government-sponsored healthcare plan as part of the overall New Deal strategy to restore the American economy. FDR's subsequent reluctance to push for this healthcare plan can be ascribed to several factors, but Harvey Cushing may have played a part. In fact, the day before FDR publicly announced that he would not push for federal insurance as part of the Social Security Act, he and Cushing discussed healthcare over lunch.

Cushing neither aired his political views in the media nor used medical journals as bully pulpits for this purpose. In fact, until his retirement from the Peter Bent Brigham Hospital in 1932, Cushing was completely absorbed in his surgical career. However, during this period and through his service as president of numerous medical societies, Cushing was able to present his ideas to the medical community as well as to the American and even international public.

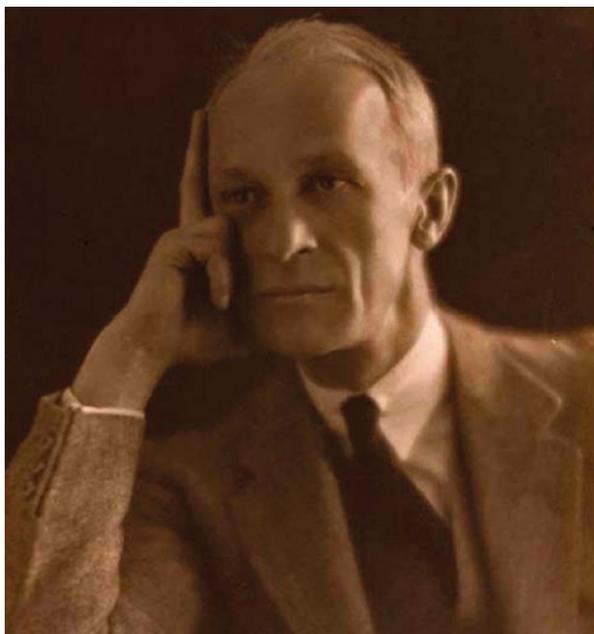
By 1933, driven by the rise of medical and surgical specialization and the transition from home to hospital-based acute care, the cost of medical care had increased. In 1934, U.S. Labor Secretary Frances Perkins, at FDR's behest, invited Cushing to serve on the Medical Advisory Committee to the president's Committee on Economic Security. Cushing's prominence in medicine as a whole made him a natural choice to sit on this committee, but at least as important was his personal relationship with the president. In June 1930, Cushing's daughter Betsey married James Roosevelt, the son of FDR. Cushing and FDR, who was governor of New York at the time, became friendly and corresponded until Cushing's death in 1939.

Cushing was not a publicly political person, but his letters suggest

that he was moderately conservative in the mainstream Republican way of the 1920s and 1930s. Undoubtedly, Cushing was opposed to government-sponsored health insurance, stating that "under any such programme [sic] the participating doctor will deteriorate, only second-rate men will in the future be attracted to take up medicine as a career, and the very purpose of the legislation will thus in course of time be defeated."

It is obvious that some of Cushing's opposition to federalized health insurance was rooted in his concern for the practice and practitioners of medicine. At a meeting of the Medical Advisory Committee, he noted: "Everybody all the way through, the whole committee, has said that the doctor is the keynote in this thing, but the question is, under health insurance what is going to happen to the doctor...if we make any form of insurance workable, the doctor is going to deteriorate."

Despite his calls for caution, Cushing was no knee-jerk reactionary. In the very same letter to FDR in which he advised against government-sponsored health



"[Governmental health insurance] means an elaborate organization of persons to make the system work, and some form of racket will certainly grow out of it... and even should the state take it over, it comes out of my pocket just the same."—HARVEY CUSHING

Harvey Cushing (top) and Franklin Roosevelt became friendly when Cushing's daughter Betsey married FDR's son James in 1930. They corresponded until Cushing's death in 1939. The Cushing photo is by Marcia Stein.

insurance, he recommended the creation of a “super-bureau of public health” that would coordinate policy and implementation across different agencies—certainly a modern concept in keeping with FDR’s vision of governmental activism. Cushing viewed the creation of some sort of national health insurance as inevitable but favored moving as slowly and as modestly as possible.

On the Medical Advisory Committee, he was a moderating force between the vehemently opposed factions. Liberal members such as Israel Falk were adamant in their calls for compulsory national health insurance, whereas conservatives such as Morris Fishbein of the American Medical Association were equally heated in their opposition to the idea. To the liberals Cushing suggested avoiding potentially violent public confrontations on the issue, telling them to “keep off the grass.” At the same time, he urged the opponents of the plan that they could be most effective by offering their own solution.

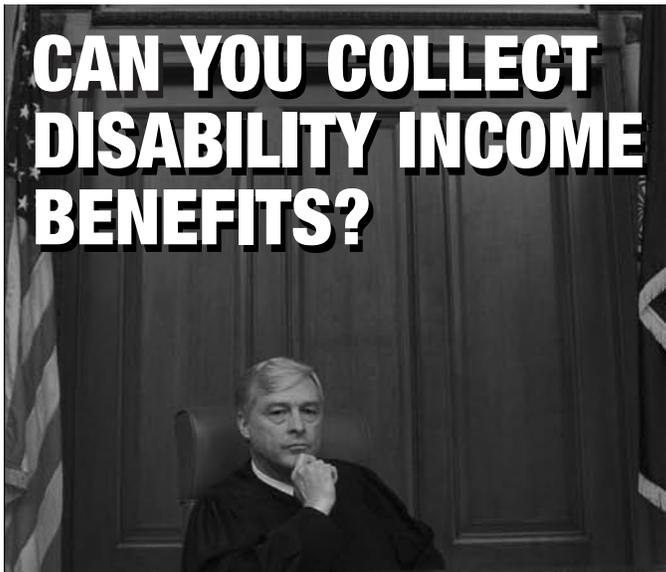
In the end, of course, national health insurance in the United States was not instituted as part of the New Deal, but a generation later, Medicare and Medicaid were born, arising out of the same concerns and dealing with the same issues with which Cushing and the Medical Advisory Committee had wrestled. Cushing may have welcomed the safety net for poor and elderly people, but his philosophy regarding governmental health insurance may be best summarized by his observation that:

The chief burden of expense, when the Government enters in, always falls most heavily on the ... man of modest means... [Governmental health insurance] means an elaborate organization of persons to make the system work, and some form of racket will certainly grow out of it...and even should the state take it over, it comes out of my pocket just the same. ■

Michael Schulder, MD, is professor and vice chair in the Department of Neurological Surgery at New Jersey Medical School in Newark. **Kristin Kraus, MSc**, is medical editor and **William T. Couldwell, MD, PhD**, is professor and Joseph J. Yager Chair of the Department of Neurosurgery at the University of Utah School of Medicine in Salt Lake City.

For Further Information

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Neurosurgeons Must Invest in Future

Please Support the Neurosurgery Research and Education Foundation

Neurosurgeons historically have been pioneers. We have described disease entities (such as Cushing's disease and Dandy-Walker malformation), developed surgical techniques (such as microsurgery and deep brain stimulation), and invented new technologies (such as stereotactic radiosurgery and spinal instrumentation). Our specialty has grown as these advances have improved the lives of our patients. Future improvements in the lives of our patients and the future growth of our specialty are critically dependent on our continuing to discover and innovate.

Our specialty remains small and highly selective. We are a very capable and successful group, but our continued success is threatened. We must compete for patients with other specialties much larger than our own. Our rates of discovery and innovation depend on our willingness to invest in research and education. The goal of the NREF, the Neurosurgery and Research Foundation of the American Association of Neurosurgeons, is to augment discovery and innovation by neurosurgeons by supporting promising young neurosurgeon clinician scientists at critical points in their careers.

Believing that neurosurgeons, through proximity to our patients, are best able to recognize opportunities for clinically relevant innovation, the NREF directs support of research to neurosurgeon clinical scientists. This support is most highly leveraged when given at key decision points in a young neurosurgeon's career: the elective years of a residency and the first few years of an academic appointment. By providing salary support, the NREF grants to NREF Research Fellows and Young Clinician Investigators encourage research in three ways: they diminish the financial imperative for clinical activity, they facilitate acquisition of research training, and they validate the recipient's commitment to research. As a result, neurosurgeons with

high potential for research receive opportunity, training, and encouragement.

This targeted support of neurosurgical research is particularly important given the current decline in government support for research, especially research by surgeons. Hypotheses or techniques that we neurosurgeons believe to have high potential for clinical significance might go unexplored if we defer to governmental agencies that have little neurosurgical input. If we want to foster neurosurgical research with the greatest potential for helping our patients, we must identify it and we must fund it.

If we want to foster neurosurgical research with the greatest potential for helping our patients, we must identify it and we must fund it.

Toward these aims, the NREF has the superb Scientific Advisory Committee, led by Robert Grossman, MD; the Annual Fundraising Campaign and appeals directed by Michele Gregory; and the resourceful Executive Council, composed of 20 knowledgeable, committed neurosurgeons from all neurosurgical disciplines and regions of the country. The Scientific Advisory Committee annually evaluates more than 50 proposals from candidate Research Fellows and Young Clinical Investigators, and nearly half of the proposals typically are judged to be of high quality and deserving of funding. Under the terrific leadership of Marty Weiss, MD, FACS, the NREF has increased the number receiving funding from nine to 15 annually. We hope to increase that to 20 annually over the next three years.

Our fundraising efforts focus on three groups: patients, partners, and practitioners. Firstly, our patients: As the direct beneficia-

ries of prior neurosurgical research, patients should be keenly aware of its importance, grateful for past discoveries, and eager to support future investigation. The NREF will approach patients through patient advocacy groups and foundations focused on neurosurgical diseases.

Secondly, our partners: As agents of translation of discovery into treatment, companies fully appreciate the importance of investing in research and development. Much of the recent increase in NREF funding has come from corporate partners interested in enhancing ties with neurosurgeon clinician scientists. We will seek further increases in this support.

And thirdly, practitioners: We neurosurgeons should support neurosurgical research and education out of both self-interest and altruism. Many of the projects funded by the NREF pursue discoveries and innovations that will expand the bounds of neurosurgical practice to the benefit of both patients and practitioners. Support of the NREF is thus a commitment to the future of neurosurgery as well as a way to give back to a profession that has been so good to us.

As beneficiaries of NREF efforts, past awardees will be asked both to donate financially and to explain to others the impact of an NREF grant on their commitment to research. The NREF also will appeal to sister organizations, such as the Congress of Neurological Surgeons and the American College of Surgeons, to join us. Most critical, however, is the support of individual neurosurgeons. We know better than anyone else how important to our patients and to the future of our profession are continued discovery and innovation. I hope that each of us will give wisely and generously. ■

Griffith R. Harsh IV, MD, FACS, MBA, NREF chair and 1986 NREF Research Fellow, is professor, program director, and vice-chair of neurosurgery at Stanford University.

NREF Grant Recipients Announced

MICHELE S. GREGORY

Since 1981, the Neurosurgery Research and Education Foundation has funded 70 Research Fellowships and 55 Young Clinician Investigator Awards.

Research Fellowship The Research Fellowship provides training for neurosurgeons who are preparing for academic careers as clinician investigators. Applicants must be medical doctors who have been accepted into, or who are currently in, approved residency training programs in neurological surgery in North America. The fellowship is offered as a two-year grant of \$70,000, or a one-year grant of \$40,000.

Young Clinician Investigator The Young Clinician Investigator Award grants support to young faculty who are pursuing careers as clinician investigators. Applicants must be neurosurgeons who are full-time faculty in North American teaching institutions and in the early years of their careers.

The Investigator Award is to fund pilot studies that provide preliminary data used to strengthen applications for more permanent funding from other sources. The one-year award totals \$40,000.

With these grants, some of the nation's most promising neurosurgeons have begun their research careers. The awards have been made possible through the generosity of AANS members, corporate partners, foundations and associations.

This year, the Scientific Advisory Committee reviewed 50 applications and approved funding for 12 grants. Funding for the 2007 grant recipients begins in July. ■

Michele S. Gregory is AANS director of development.

NREF Research Fellows

- **Awardee:** Andrew Foy, MD—Mayo Clinic
Project: Modulation of Bmi1 expression in pediatric medulloblastoma.
- **Awardee:** Jason L. Gerrard, MD, PhD—Massachusetts General Hospital
Project: The role of the primate hippocampus and basal ganglia circuit in visual-motor associative learning.

NREF/AANS Pinnacle Partners Research Fellow

- **Awardee:** Dimitris Placantonakis, MD, PhD—Weill Cornell Medical College
- **Project:** Generation of purified motor neurons from human embryonic stem cells for cell therapy in amyotrophic lateral sclerosis.
The AANS Pinnacle Partners in Neurosurgery program, now in its fourth year, helps the AANS continue its tradition of offering innovative educational programming throughout the year. Corporate partners participating include Boston Scientific, Carl Zeiss, Meditec, Inc., Cordis Neurovascular Inc., DePuy/Codman, Globus Medical, Integra Foundation, Kyphon, Medtronic, Micrus Endovascular Corporation, Stryker and Synthes Spine.

NREF/Biomet Microfixation Research Fellow (new)

- **Awardee:** James Frazier, MD—Johns Hopkins University
Project: Determination of the role of PDGF and EGF in the migratory pattern of brain cancer stem cells and comparison of this migratory pattern to normal fetal and adult human stem cells in an in vitro assay and in vivo rodent model using NOD/SCID/IL2rynull mice.

NREF/DePuy Spine Research Fellow

- **Awardee:** H. Francis Farhadi, MD, PhD—University of Toronto
Project: Transcriptional programming of the myelin basic protein gene following spinal cord injury in the mouse.

NREF/Porex Surgical, Inc. Research Fellow (new)

- **Awardee:** Justin Cetas, MD, PhD—Oregon Health & Science University
Project: Central Mechanisms of pain in dural inflammation.

NREF Young Clinician Investigators

- **Awardee:** Gerald Grant, MD—Duke University
Project: Characterization of the blood-tumor barrier in a glioblastoma intracranial xenograft model under normal and hyperthermic conditions.
- **Awardee:** Brian L. Hoh, MD—University of Florida
Project: Functional role of Hematopoietic stem cells and endothelial progenitor cells in aneurysm formation and recanalization after coil embolization.
- **Awardee:** Gregory Zipfel, MD—Washington University
Project: Role of apolipoprotein E and amyloid-beta protein peptide in cerebral vasospasm.

NREF/Kyphon Inc. Young Clinician Investigator

- **Awardee:** Eve Tsai, MD, PhD—University of Ottawa
Project: Bioengineering strategies to enable combination therapy for the repair of spinal cord injury.

NREF/Spine & Peripheral Nerves Section Young Clinician Investigator Award

- **Awardee:** Jason Huang, MD—University of Rochester
Project: Live nerve construct to repair extensive peripheral nerve injury.

ACS/AANS-NREF Faculty Career Development Award

- **Awardee:** Uzma Samadani, MD, PhD—New York University Medical Center
Project: Sonic hedgehog therapy after lysis of intracranial hemorrhage.

**International Members:
Two New Journal Articles
Featured at AANS.org**

The "Highlighted International Journal Articles" feature now includes an article on posttraumatic brain swelling treated by surgical decompression, and another on neuroendoscopic surgery in children. The articles are available at www.aans.org/international/international_journal_articles.asp.

AANS Members Insured by The Doctors Company Awarded Dividend Credit

Beginning with July policy renewals, AANS members who are insured by The Doctors Company through the AANS Professional Liability Program will receive a 5 percent dividend credit in addition to the premium discount that AANS members with favorable claims histories receive. Since 2000 the AANS Professional Liability Program has been administered exclusively by The Doctors Company, which currently has \$2 billion in assets and A- ratings by A.M. Best Company and Fitch Ratings, in a partnership that provides AANS members with extensive benefits. Members not currently taking advantage of the AANS Professional Liability Insurance member program and those seeking information can contact The Doctors Company at (800) 862-0375 or www.thedoctors.com.

The End of the Current AANS CME Cycle Approaches

The end of the current AANS continuing medical education cycle is Dec. 31. Active, Active Provisional, and grandfathered International members residing in the United States are required to document receipt of the Continuing Education Award in Neurosurgery to maintain membership in the AANS. This award is earned by documenting at least 60 AANS-approved neurosurgical credits within the CME cycle. The current three-year cycle is Jan. 1, 2005 through Dec. 31, 2007. More information is available at the CME tracking page, www.aans.org/education/cme.asp.

The Pitch: Let neurosurgeons entertain you with their softball prowess, and you'll have a real good time—with the knowledge that your donation benefited pediatric brain tumor research. At right, Dan Barrow, MD, pitches for the Emory University team during the Fourth Annual Neurosurgery Charity Softball Tournament.



The Doctors Company Announces the Tribute Plan for AANS Members

A new financial advantage plan, the TributeSM Plan, is now being offered by The Doctors Company, the exclusive administrator of the AANS Professional Liability Insurance Program. Effective Jan. 1, 2007, the plan offers an individual balance that accumulates each year until a physician's permanent retirement, at which time the balance is distributed as a career award. "The Tribute Plan is a long-term commitment to physician members of The Doctors Company and to improving the environment in which our doctors practice," said Richard E. Anderson, MD, chairman and CEO of The Doctors Company. "We believe it is a benefit that no other national medical malpractice carrier can match." Eligible members of The Doctors Company with policies in force on or after Jan. 1 are automatically enrolled and have begun accumulating balances. At the end of 2011 a member of The Doctors Company could accumulate a Tribute balance equal to 50 percent of his or her annual premium. Tribute Plan awards are delivered as a lump sum payment when the member reaches age 55 or older, has five or more years of continuous coverage with The Doctors Company, and retires from the practice of medicine. The plan is an addition to the benefits that members already receive, including competitive premiums, pay dividends, industry-leading claims defense, and comprehensive risk management and patient safety programs. Additional information is available at www.thedoctors.com/tribute.

William P. Van Wagenen Fellowship Application Deadline is Oct. 1

The Van Wagenen Fellowship affords freedom in scientific development, without the limitation often imposed by other research grants and fellowships. This fellowship provides private, nongovernmental funding for postneurosurgical residents from a North American training site, for overseas travel for medical enrichment, prior to beginning an academic career in neurological surgery. This award offers a one-year grant of \$60,000, family travel and living allowance of \$6,000, and \$15,000 to the laboratory where the Van Wagenen Fellow will be conducting his or her research. This year, there are two fellowships available. The Van Wagenen Fellowship application is available at www.aans.org/otherresearch/van_wagenen_fellowship.asp.

AANS Announces Disciplinary Actions

The AANS Board of Directors at its November 2006 meeting approved the recommendations of the Professional Conduct Committee that four members be disciplined for unprofessional conduct while testifying as expert witnesses in medical malpractice lawsuits. The board increased the PCC-recommended sanction in one case from a one-year membership suspension recommendation to a two-year suspension, and in another case, from a two-year suspension recommendation to a membership revocation.

The board also approved recommendations for dismissal in four other cases and dismissed one case with a letter of admonition in which the PCC had recommended censure. Three of the five dismissals involved testimony in medical malpractice lawsuits, and two were defamation complaints arising from official peer-review proceedings. The four disciplinary sanction cases are listed below.

Raeburn C. Llewellyn, MD—Two-Year Suspension of Membership The PCC and the board concluded that Dr. Llewellyn failed to review all of the pertinent medical records and misrepresented the neurosurgical standard of care. The board voted to suspend Dr. Llewellyn's AANS membership for two years.

Michael H. Sukoff, MD—Two-Year Suspension of Membership The PCC expressed concerns about the complainant's management and documentation, but the board agreed with the PCC that in his testimony Dr. Sukoff demonstrated insufficient subject matter knowledge, failed to correctly represent the neurosurgical standard of care, and testified as an advocate rather

than as an impartial witness. The board voted to suspend Dr. Sukoff's membership in the AANS for two years.

Thomas B. Flynn, MD—Six-Month Suspension of Membership The PCC concluded and the board agreed that while there were some documentation deficiencies in the complainant's medical records, Dr. Flynn testified as an advocate rather than as an impartial neurosurgical expert witness and voted to suspend Dr. Flynn's AANS membership for six months.

George B. Udvarhelyi, MD—Revocation of Membership The PCC concluded and the board agreed that Dr. Udvarhelyi testified with insufficient subject matter knowledge and that by adopting one side of a disputed fact issue he testified as an advocate rather than as an impartial neurosurgical witness. Because he had previously been sanctioned by the AANS for testifying with insufficient subject matter knowledge in another lawsuit, the board voted to revoke Dr. Udvarhelyi's AANS membership.

Loss of ABNS Certification Cases

For some categories of AANS membership, certification by the American Board of Neurological Surgery is a requirement. The PCC heard the cases of four AANS members whose ABNS certification had been suspended due to various licensure issues. The four members explained their respective situations, and the PCC then recommended and the AANS Board of Directors agreed that their memberships in the AANS should be suspended commensurate with the suspensions of their ABNS certification. Those individuals are: Reza P. Asli, MD,

Donald W. Marion, MD, Michael J. Rosner, MD, and Richard H. Thorp, MD.

In addition, in the cases of four AANS members whose ABNS certification had been revoked, the PCC recommended and the AANS Board of Directors concurred that the AANS membership of those four individuals should be terminated. Those individuals are: David M. Baron, MD, David V. Hubbell, MD, Robert T. James, MD, and David G. Scheetz, MD

The AANS Professional Conduct Committee

The AANS Professional Conduct Committee evaluates complaints by one or more AANS members about another member or members and makes recommendations to the AANS Board of Directors. Established in 1982, the PCC has served as a model for other professional associations to structure and adopt similar programs. In June of 2001, the PCC's work was examined by the 7th Circuit Court of Appeals in a landmark case for professional associations, *Austin v. AANS*. This opinion strongly supported the idea that a professional association should have an internal mechanism for self-regulation. The AANS Professional Conduct Program received an honor roll designation from the American Society of Association Executives in 2002.

For More Information

■ AANS Code of Ethics, www.aans.org/about/aanscodeofethics.pdf

■ Rules for Neurosurgical Medical/Legal Expert Opinion Services, www.aans.org/about/membership/Rulesfor_LegalExpertOpinionServices.pdf

Neurosurgery Charity Softball Tournament Benefits Pediatric Brain Tumor Research (Contributed by Richard C.E. Anderson, MD) The fourth Annual Neurosurgery Charity Softball Tournament was held in New York City June 9 to benefit pediatric brain tumor research. The 12 teams competing on Central Park's Great Lawn represented neurosurgery departments from the medical centers at Columbia, Emory, Harvard, Duke, Yale, Thomas Jefferson, Johns Hopkins, Cornell, New York and Pennsylvania universities, Albert Einstein and Mt. Sinai. The University of Pennsylvania scored four runs in the bottom

of the last inning to defeat Columbia 9-8 and repeat as champions, taking home the J. Lawrence Pool Memorial Trophy for another year. Mt. Sinai once again put on a strong showing and finished in third place. The tournament, which in four years has raised more than \$100,000 for pediatric brain tumor research, was sponsored by George Steinbrenner and The New York Yankees, hosted by Columbia University and organized by Ricardo J. Komotar, MD, a neurosurgery resident at Columbia. The fifth annual tournament is planned for June 7, 2008. Information is available at www.kidsbrainresearch.org.

Furthering Progress

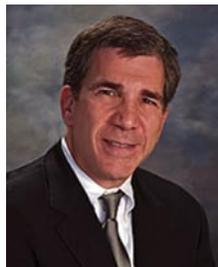
The CSNS Plans for Revitalization

With the hard work and full commitment of its members, the Council of State Neurosurgical Societies continues to support the socioeconomic interests of neurosurgery.

With the goal of strengthening and furthering this support, the Strategic Planning Task Force convened in March to develop a new organizational plan for the CSNS and to revamp the operational structure under which it functions. A. John Popp, MD, facilitated the meeting, at which four committees were formed to address the areas of mission and vision, organizational functionality, organizational structure, educational programs, and relationships with other organizations. As the initial step in the process a new statement of mission and vision was drafted. The task force will meet in July and its progress will be reported at the CSNS meeting in September.

The new Executive Committee was elected at the CSNS meeting in April. Officers are Gary M. Bloomgarden, MD, chair; William E. Bingaman Jr., MD, vice chair; Gregory J. Przybylski, MD, treasurer; Deborah L. Benzil, MD, recording secretary; and Mark E. Linskey, MD, corresponding secretary. To bridge a one-year gap created by a change in the bylaws to two-year terms for the recording secretary, corresponding secretary, and treasurer, Dr. Benzil will serve a one-year term as recording secretary. Rounding out the committee are Fernando G. Diaz, MD, immediate past chair, and Randall W. Smith, MD, historian.

At the April meeting a record number of resolutions were submitted, possibly due to the implementation last fall of resolution submission through the CSNS Web site. Of 15 resolutions voted upon during the plenary session, six were adopted, two were combined into one resolution that was adopted, three were not adopted, and four were assigned to committees for white paper reports. Adopted resolutions



Gary M. Bloomgarden, MD



Fernando G. Diaz, MD, PhD

concerned support of the Health Care Antitrust Improvements Act of 2007, the risk to patients of pay-for-performance and public reporting programs, educational remediation for neurosurgeons who have been sanctioned for unprofessional conduct, and continuing medical education requirements of state licensing boards. Resolutions assigned to committees for further study concerned acute care competency standards, evaluation of neurosurgery residency training, the inaccuracy of information about neurosurgeons on public Web sites such as HealthGrades, guidelines for determination of brain death, and the development of an outcomes registry for voluntary participation.

Final resolutions are available on the CSNS Web site, www.csnsonline.org, which is receiving nearly 1,000 visits every month. The site also includes information about the organization's mission, structure and committees, future CSNS and state meetings, guidelines to expert witness testimony, and information for residents. In addition, an interactive "wiki" structure is being implemented through the Web site to help neurosurgeons collaborate and explore socioeconomic topics of interest, and the first article in that format already is available.

Despite the excellent participation in the April meeting, involvement in the CSNS by state delegates as well as by appointees of the AANS and Congress of Neurological Surgeons has been declining over the past five

years. Critical areas in need of support include medical reimbursement, coding, and education. To reverse this trend, the AANS and CNS boards were asked to encourage delegates to become more involved in CSNS activities. Also, quadrant chairs were asked to encourage their state societies to send their state delegates to participate in the CSNS, and mentorship programs will be instituted at all levels to enhance the interest and understanding of the CSNS participants and to promote their continuing participation in the various activities of the CSNS. In addition, a residency fellowship program in the CSNS has been successful in recruiting young neurosurgeons during their formative years to become involved with the activities of the CSNS. A medical student fellowship program also was approved for a one-year term to motivate younger physicians in training to become informed about socioeconomic issues that are critical to the practice of medicine.

In conjunction with the 2007 annual meetings of the AANS and the CNS, the CSNS played a role in development of educational programs on socioeconomic issues. The AANS meeting in April included three afternoon sessions, a Thursday morning session, and three breakfast seminars on the topics of liability reform, Medicare, pay for performance, emergency care delivery, practice development and reimbursement strategies. The CNS meeting in September will include quality and outcomes presentations as well as a Sunday practical course on socioeconomic topics with various CSNS presenters.

The CSNS also plans to augment and increase its educational activities. A concept currently under evaluation is that of providing CME credits for the CSNS activities that have educational value. In 2008, the CSNS will offer the Leibrock Leadership Development Course on interactions with government in Washington, D.C. ■

Gary M. Bloomgarden, MD, is the current chair and **Fernando G. Diaz, MD, PhD**, is the immediate past chair of the Council of State Neurosurgical Societies, www.csnsonline.org.

Julian T. “Buz” Hoff, MD

AANS Past President Enjoyed a Distinguished Career

Julian T. “Buz” Hoff, MD, died peacefully at home on April 16, surrounded by his loving family, following a seven-month battle with acute leukemia.

Dr. Hoff was a graduate of Stanford University, where he received his A.B. degree. He attended Cornell Medical College, graduating in 1962. He completed his neurosurgical training in 1970 at New York Hospital under the mentorship of Bronson Ray and went on to the University of California at San Francisco where he quickly rose to the rank of professor. Dr. Hoff left San Francisco in 1981 to head the section of neurosurgery at the University of Michigan, where he trained nearly 50 neurosurgeons over 25 years. He was appointed the Richard C. Schneider Professor in 1992. The section became a department in 2001, and Dr. Hoff served as its first chair from 2001 to 2005.

Dr. Hoff’s distinguished career in neurosurgery included service on the editorial boards of major neurosurgical journals. He was co-chair of the editorial board for the *Journal of Neurosurgery* from 1997 to 1999. He was the author of numerous papers and book chapters, plus the editor of several books. He received funding from the National Institutes of Health continuously from 1972 to his retirement from clinical neurosurgery in 2006.

He twice received the prestigious Jacob Javitz Award for Neuroscience Research and was a member of the Institute of Medicine National Academy of Science since 1999. He received the Cushing Medal from the American Association of Neurological Surgeons, the Grass Prize from the Society of Neurological Surgeons, was the honored guest of the Congress of Neurological Surgeons, and received the Distinguished Alumni Award from Caldwell High School in Caldwell, Idaho. In 2007 the Society of Neurological Surgeons honored him with the Distinguished Service Award.



Dr. Hoff, 1936–2007

Dr. Hoff served in executive positions in every major neurosurgical society including the American Academy of Neurological Surgeons, the American Association of Neurological Surgeons, and the Congress of

Neurological Surgeons. He was a member of the residency review committee for neurosurgery from 1987 to 1993.

Dr. Hoff was particularly beloved for his strong leadership abilities that were displayed in a collegial and kind fashion. He was a respected leader and always remained a true gentleman. Whenever a complex job needed to be done, Dr. Hoff was selected by organized neurosurgery or the University of Michigan to perform that job, and he did so with wisdom and an affable personality. A strong advocate of resident education, he sought to create a collegial environment in which even the most complex political and scientific issues could be discussed in a fashion of warmth and openness.

Dr. Hoff was especially pleased that in 2006 the Department of Neurosurgery

completed an endowed chair honoring him. The department also established a Resident Education and Research Fund in Dr. Hoff’s name to continue his outstanding legacy of leadership in academic neurosurgery and his longstanding support of resident education.

Dr. Hoff is survived by his wife of 45 years, Diane (Shanks) Hoff, three children, Paul Hoff, MD (Donna Hoff, MD), Allison Hoff, MA, and Julia (Michael) Haughey, MSW, and five grandchildren, Lauren Hoff, Kiersten Hoff, Kathryn Haughey, Kelly Haughey, and Charles Haughey.

A memorial service was held in May. The family asked that contributions be sent to The Caldwell High School Julian T. Hoff Memorial Scholarship Fund in care of the Caldwell Foundation for Educational Opportunity, Kathy O’Banon, 2311 Arlington Ave., Caldwell, ID 83605, to The Boy Scouts of America, or to the Julian T. Hoff Resident Research and Education Fund in care of Michelle Bard, University of Michigan Department of Neurosurgery, 1500 East Medical Center Drive, 3470 Taubman Center, Ann Arbor, MI 48109-5338. ■

Karin Muraszko, MD, is the Julian T. Hoff Professor and chair in the Department of Neurosurgery at the University of Michigan.

Scientific and Practice Management DVD’s

Select sessions from AANS Annual Meetings have been videotaped and made available on DVD. Topics cover Tumors, Interbody Lumbar Fusion, and risk management and financial strategies for your practice.

For DVD descriptions visit the AANS Web site www.AANS.org for more information.



American Association of Neurological Surgeons

The Values of the Common Codes

E&M Codes Increase in Value After Five-Year Review

Significant increases in the value of evaluation and management codes are a welcome result of the recent Medicare physician fee schedule five-year review. In particular, the higher levels of service in the most commonly used E&M codes received the highest increase in work values. Because E&M services can represent more than one quarter of a neurosurgeon's clinical revenue, reimbursement and documentation changes for E&M codes merit a closer look.

E&M for Outpatient Services

Consultation codes 99241–99245 for office visits are among the most common codes used in practice. Although there was a negligible increase in value for codes 99241–99243, there was a 10 percent increase in value for code 99244 (5.04 total relative value units) and a 6 percent increase in value for code 99245 (6.26 total RVUs).

The documentation requirements developed in 1997 for codes 99241–99245 are unchanged although they recently were examined by a work group assigned by the American Medical Association. Documentation for code 99244 is requested by several insurers in prepayment audits. Considering the relatively high volume of consultation codes, it is not surprising that these codes frequently are audited.

In addition, clarification on coding for outpatient consultation versus transfer of care was recently provided by the Centers for Medicare and Medicaid Services in response to a medical group that questioned whether a consulted physician who manages a specific problem for a patient can bill for a consultation; the CMS responded in the affirmative. For example, if a primary care physician asks a neurosurgeon to evaluate a patient for lumbar stenosis and the neurosurgeon alone manages this problem for the patient, the neurosurgeon can bill for a consultation provided that he

or she communicates back to the requesting physician.

E&M for Inpatient Services

There was a significant increase in valuation of consultation codes for inpatient hospital services. For example, the value of code 99254 increased 19 percent (4.46 total RVUs), an increase that is reflective of sicker inpatients as greater numbers of healthier patients are being managed as outpatients. Inpatient consultations require documentation that differs somewhat from documentation requirements for outpatient consultations. While for an outpatient the consultant can document the request for consultation, for an inpatient the requesting physician must document the request for consultation in the chart. The higher values for outpatient services reflect the practice expense component rather than the work value component, which is higher for the inpatient consultation.

Some of the greatest increases in values were for hospital admission E&M codes, and these increases also can be attributed to greater numbers of sicker inpatients. For example, code 99221 increased in value by 35 percent (2.43 RVUs total) and code 99223 increased in value by 20 percent (4.96 total RVUs). Hospital admissions require documentation that includes a more detailed history and examination for a level one service in comparison to services or consultations for new patients.

Even the work values for established patient codes 99211–99215 increased significantly. For example, code 99213 increased by 20 percent (1.66 total RVUs), and code 99214 increased by 16 percent (2.52 total RVUs). These increases can be attributed to the greater number of comorbid conditions that require management. Note that the documentation requirements for established patients are less stringent than those for other patients: For established patients, only two of three key compo-

nents (history, examination, and medical decision-making) are used to determine the level of service.

The valuation for critical care services, time-based services that require management of an organ or organ system that is at significant and imminent risk of injury, increased by smaller margins. For example, the first hour of critical care services increased in value by 9 percent (5.96 total RVUs), making this service equivalent in intensity to some neurosurgical intraoperative services.

The value of postoperative E&M services in the hospital and during the global period in the office was increased in the calculation for values of procedures, mitigating the decrease in values of procedural services. Moreover, the “discounted” hospital E&M values that were previously attributed to procedures were removed, further increasing the work values of these codes.

Overall Reimbursement Increase

Although a significant increase in work values for E&M services resulted in a reduced work value for all services in the Medicare fee schedule, neurosurgeons should see an increase in reimbursement for the office and inpatient E&M services they provide. It remains important for neurosurgeons to periodically review the documentation requirements for E&M services and to perform periodic audits of their records. It would not be surprising if insurers soon followed the increase in E&M code valuation with a close inspection of E&M code documentation. ■

Gregory J. Przybylski, MD, is chair of the AANS/CNS Coding and Reimbursement Committee and a member of the CMS Practicing Physicians Advisory Council. He also plans and instructs coding courses for the AANS and the North American Spine Society.

For More Information

■ Przybylski GJ: Five-year review results: neurosurgery sees significant successes. *AANS Bulletin* 16(1):26, 2007. Article ID 44446

Thinking: Critical

Most Medical Errors Traced to Mistakes in Thinking

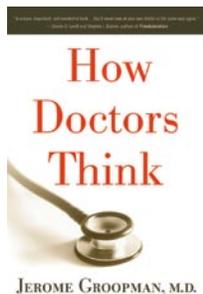
Since Jerry Groopman wrote *The Measure of Our Days*, he has become the medical profession's spokesperson on the art of medicine. This time he has written a book that the media loves, and as a practicing medical oncologist in Boston for the past 30 years, he has experience that warrants our attention.

He is honest and critical in describing, based on interviews with many medical experts on their decision-making processes, how doctors arrive at decisions, and frank about his own decision-making process. Groopman loves to tell stories to illustrate his points, and this book is filled with them.

Emotions play more of a role in decisions than most physicians admit. We assume that the errors we make in medicine are largely technical ones—prescribing the wrong dose of a medication, transfusing a unit of blood matched for another patient, or mislabeling an X-ray. But as a growing body of research shows, technical errors account for only a small fraction of doctors' incorrect diagnoses and treatments. Most errors are mistakes in thinking. Part of what causes these cognitive errors is our inner feelings, feelings we do not readily admit to and often don't even recognize. Patients are not the only people with emotions.

It has become increasingly difficult to spend the time with patients necessary for making well-informed, wise decisions. In specialties like radiology, the technological complexity of the imaging has compounded the difficulty of interpretation. Currently the bean counters are generating metrics to judge a physician's quality, but many of these measurements are trivial, simply scorecards to ensure that easily measured things are accomplished. In this context, quality means thinking broadly and making judicious decisions with limited data.

Groopman has written an interesting chapter on specialists based on the idea that



How Doctors Think, Jerome Groopman, MD, 2007, Boston, Houghton Mifflin Company, 320 pp., \$26.00.

if you give someone a hammer, everything looks like a nail. He says that specialists are susceptible to "diagnostic momentum": Once an authoritative senior physician has fixed a label to the problem, it usually stays firmly attached. Specialists tend to be didactic and fixed in their opinions; however, acknowledging uncertainty enhances a physician's therapeutic effectiveness if it demonstrates honesty and a willingness to be more engaged with the patient.

In a disturbing chapter entitled "Marketing, Money, and Medical Decisions," Groopman discusses the interface between physicians and industry. He addresses the issue of spinal fusion and device manufacturers, reporting that more than 150,000 lower lumbar spinal fusions were performed in the United States in 2006. Groopman, knowledgeable about spinal surgery in part from an unhappy personal

experience, notes that there are serious questions about the indications for lumbar spinal fusion and whether the operation is effective, leading him to question whether spinal fusion is done for financial or medical indications since scientific proof is unavailable. He is uncomfortable with lavish treatment that spinal surgeons often accept from instrument makers. A plea is made for honest, informed choice.

He also discusses a fundamental schism in healthcare between physicians who base treatment almost entirely on data and those who are willing to individualize treatment in a holistic manner. Medicine, after all, is a mix of science and soul.

The key recommendation of this book is to get back to the basics: Listen to the patient and examine repeatedly. Groopman suggests that we never tell our patients that there is nothing wrong with them and that we always ask three questions before arriving at our diagnosis: (1) What else could it be? (2) Is there anything that doesn't fit? (3) Is it possible that there is more than one problem?

Why should neurosurgeons read this book? *How Doctors Think* offers a useful model for turning our practiced critical thinking skills upon ourselves. We will all be better neurosurgeons if we do, and our patients deserve no less. ■

Gary Vander Ark, MD, is clinical professor of neurosurgery at the University of Colorado Health Sciences Center. He is the 2001 recipient of the AANS Humanitarian Award.

Looking for up-to-date, free educational information to share with your patients?

Did you know that www.NeurosurgeryToday.org, the public Web site of the AANS, is a one-stop shop for the latest patient education materials? Nearly 50 neurosurgical topics include essential components such as prevalence and incidence statistics, risk factors, symptoms, diagnosis, and both surgical and nonsurgical treatment options.

Visit www.NeurosurgeryToday.org





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EVENTS

Calendar of Neurosurgical Events

Pennsylvania Neurosurgical Society Annual Scientific Meeting

July 27–28, 2007
Hershey, Pa.
(717) 558-7850

13th Annual Montana Leibrock Neurosurgery Symposium⁺

July 29–Aug. 1, 2007
Whitefish, Mont.
www.umt.edu/mnif/
symposium.htm

Neurotrauma Symposium

July 30–Aug. 1, 2007
Kansas City, Mo.
www.neurotrauma.org/2007

UCLA Shaped Beam Radiosurgery Tutorial Course (Basic)

Aug. 14–15, 2007
Los Angeles, Calif.
www.neurosurgery.ucla.edu/
conferences

Gamma Knife Radiosurgery Training Program⁺

Aug. 20–24, 2007
Cleveland, Ohio
http://cms.clevelandclinic.org/
neuroscience/body.cfm?id=727

Western Neurosurgical Society⁺

Sept. 8–11, 2007
Kohala Coast, Hawaii
www.westnsurg.org

Transcranial Doppler & Imaging Course

Sept. 14–16, 2007
Bothell, Wash.
www.pvicme.com

Congress of Neurological Surgeons

Sept. 15–20, 2007
San Diego, Calif.
www.neurosurgeon.org

Principles and Practice of Gamma Knife Radiosurgery

Sept. 24–28, 2007
Pittsburgh, Pa.
www.neurosurgery.pitt.edu/
training/gamma_knife.html

UCLA Shaped Beam Radiosurgery Tutorial Course (Basic)

Oct. 9–10, 2007
Los Angeles, Calif.
www.neurosurgery.ucla.edu/
conferences

5th Annual World Congress on the Insulin Resistance Syndrome

Oct. 11–13, 2007

Boston, Mass.
www.insulinresistance.us

Research Updates in Neurobiology for Neurosurgeons

Oct. 20–27, 2007
Woods Hole, Mass.
www.societyms.org

5th International Course on the Hand

Oct. 21–25, 2007
Bodrum, Turkey
www.vitalmedbodrum.com/
english/meeta.htm

Gamma Knife Radiosurgery Training Program⁺

Oct. 22–26, 2007
Cleveland, Ohio
http://cms.clevelandclinic.org/
neuroscience/body.cfm?id=727

American Academy of Neurological Surgery Annual Meeting

Oct. 31–Nov. 4, 2007
Las Vegas, Nev.
(410) 614-0477

ABNS Oral Board Exam

Nov. 6–9, 2007
Houston, Texas
www.abns.org

Principles and Practice of Gamma Knife Radiosurgery

Nov. 12–16, 2007
Pittsburgh, Pa.
www.neurosurgery.pitt.edu/
training/gamma_knife.html

2007 Pediatric Section Annual Meeting⁺

Nov. 27–Dec. 1, 2007
Miami, Fla.
www.pedsneurosurgery.org

American Neurosurgery Update in the State of Kuwait

Dec. 1–3, 2007
Kuwait City, Kuwait
marazek@yahoo.com

UCLA Shaped Beam Radiosurgery Tutorial Course (Advanced)

Dec. 4–5, 2007
Los Angeles, Calif.
www.neurosurgery.ucla.edu/
conferences

EuroNeuro2008

Jan. 17–19, 2008
Maastricht, Netherlands
www.euroneuro.eu

76th AANS Annual Meeting

April 26–May 1, 2008
Chicago, Ill.
www.AANS.org

American Board of Neurological Surgeons

May 27–30, 2008
Houston, Texas
www.abns.org

⁺These meetings are jointly sponsored or cosponsored by the AANS. The frequently updated, comprehensive Meetings Calendar and continuing medical education information are available at www.aans.org/education.

AANS Courses

For information or to register, call (888) 566-AANS or visit www.aans.org/education.

■ **Managing Coding and Reimbursement Challenges in Neurosurgery**

*Coding for Pros requires attendees to have taken a coding course within the past three years.

Aug. 24–25, 2007*..... Charleston, S.C.
Sept. 7–8, 2007..... Las Vegas, Nev.

■ **Goodman Oral Board Preparation: Neurosurgery Review by Case Management**

Nov. 4–6, 2007..... Houston, Texas

■ **Neurosurgeon as CEO: The Business of Neurosurgery**

May 25–27, 2008..... Houston, Texas