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Honor, Responsibility, Priorities

72nd AANS President Works for Neurosurgery Inside and Out

Becoming president of the AANS is an honor that was beyond my wildest dreams when I began to practice and teach neurosurgery 25 years ago. This honor bestows a responsibility that I eagerly accept: in simple terms, to do my best to ensure that the AANS serves neurosurgery as effectively and efficiently as it could. To this end, I have set some "internal" and "external" priorities.

Unification, the Highest Priority

Internally, my highest priority is to continue to strengthen the "house" of neurosurgery so that it can serve our needs in the most effective and efficient manner. We at the AANS believe firmly, as has been emphasized by our two most recent presidents, that neurosurgery best can be served by a merger of our two national organizations that would result in one single infrastructure to serve all the needs of neurosurgery.

We emphasize that the merger we envision is not a takeover of one organization by the other. On the contrary, what makes this merger eminently sensible and attractive is precisely the fact that the Congress of Neurological Surgeons has been so successful as an organization.

The CNS was founded to meet the needs, mostly educational at that time, of the many neurosurgeons who were excluded from the AANS because of its early restrictive membership requirements. Over the years the AANS, by adding different membership categories to accommodate different stages of a neurosurgical career, has become all-inclusive, while at the same time the CNS has grown as an extraordinarily successful organization fully capable of providing its membership, which is now practically indistinguishable from the AANS's mem-

bership, with a full range of services that go beyond the original educational mission.

In other words, now we have two mature, successful organizations providing similar and in some cases, competitive

Roberto C. Heros, MD, is the 2002-2003 AANS president. He is professor, co-chairman and program director of the Department of Neurosurgery at the University of Miami.

services to an almost identical membership. This is what makes it possible for the AANS to talk to our colleagues at the CNS entirely as equals working together to unify neurosurgery to better serve the needs of our membership. We want to incorporate those attributes that have made each organization successful into the culture and governance of a unified house that blends the best of each organization.

A Vision for Unification

The unification that I envision is entirely compatible with the continuation of the two greatest sources of pride for each organization: the journal and the annual meeting. Each meeting might maintain its current flavor and format and each journal, its own independent editorial process. Both journals and both annual meetings could be served by the single infrastructure of a unified house for neurosurgery.

Unification is what our current challenges demand, it is what our membership has clearly stated it wants, and the timing for it is propitious; after all, four of

the six current officers of the AANS are either former presidents or vice-presidents of the CNS.

This is why, with the conviction that each organization wants to do what is best for neurosurgery, I am optimistic that the ongoing discussions on unification that both organizations are undertaking in earnest will succeed.

Strengthening AANS

While working with unshakable commitment toward unification, we will continue to strengthen the AANS. I am fortunate that, in no small part due to the wisdom and hard work of my predecessors, I am taking the helm of a much stronger organization than we ever had.

We now have an outstanding, though leaner, home office in Chicago ably led by Thomas A. Marshall, our executive director, who in a little over a year has stabilized and energized our staff.

Our financial situation—thanks to the efforts of Arthur L. Day, MD, our treasurer, and Ronald W. Engelbreit, CPA, our most capable deputy executive director—has been turned around so that the AANS is again a healthy organization. This success allows us to engage in other "internal priorities."

We have appointed a task force, led by Robert A. Ratcheson, MD, our secretary, to find innovative, effective ways to enhance our educational mission, especially in the increasingly important area of "maintenance of competency," which is such an important component of our modern neurosurgical horizon.

Another task force was developed to improve and enhance the educational value and the attractiveness of our already very successful annual meeting. A third task force has been studying ways of

enhancing the scope of our Professional Conduct Committee, which is a source of great pride for us and a model of professionalism in this activity that has been widely praised and is beginning to be emulated by other medical professional associations.

Finally, Dr. Day is leading an effort to find new sources of revenue, within the core of our mission, that will make it possible to fund these activities and to reduce the dependence of the organization on membership dues; in other words, to reduce your annual dues.

Unified Front Faces Formidable Challenges

Externally, we face formidable challenges. Fortunately, years ago the AANS and the CNS—working together synergistically in a model of how we could serve all the needs of neurosurgery—developed the Washington Committee. It would take too much space to describe the impact that this unified activity of our national organizations has had; this impact, though perhaps hard to perceive by the membership, has transcended by far what could be expected for a specialty of our size.

We are very fortunate to have Katie Orrico, JD, as the able and effective director of our Washington office. I share with her the view that our greatest "external" challenges are the professional liability crisis, the continuing decrease in Medicare reimbursement, and the crisis in neurosurgical coverage in emergency medical services brought about in no small part by the modifications and amplification of EMTALA regulations.

Another major threat that is very much on our radar screen is the threat to our patients and our livelihood posed by the SPORT (Spine Patient Outcomes Research Trial) study underway at the National Institutes of Health that, because of major flaws in design, could lead to the conclusion that surgery is no better than conservative treatment for lumbar disc herniations and lumbar spondylosis.

These are some of the "hot topics" that will continue to be covered in the *Bulletin.* The AANS and the CNS, through our Washington Committee, are ferociously engaged in each of these battles … and we will redouble our efforts!

I look forward to the honor and the challenge or serving you as the 72nd president of the American Association of Neurological Surgeons. ■

Beyond the Bubble

Using Technology to Enhance Neurosurgical Practice

To those heavily invested in a certain sector of stocks, technology recently has become a "four-letter" word. Initially, the lure of technology stocks was nearly irresistible—compounding profits by investing in the future. This type of "bubble" is nothing new; four centuries ago a similar scene unfolded with the Dutch tulip mania of the 17th century. Some individuals invested their entire fortunes in a single bulb and, in 1637, lost everything.

As one with more than 1,000 tulip bulbs in the ground this year—and without a personal digital assistant in my pocket—perhaps I just have a greater affinity for tulips than for the other t-word. Regardless of whether I personally lean more to the technophobe or technophile, it is certain that the general view of technology in 2002 is more grounded in reality than in recent years. This more pragmatic view allows for a balanced assessment of what technology products can do for us, with emphasis on understanding their advantages, disadvantages and the necessity of successfully implementing technology in our lives and in our profession.

A Practical Context for Technology

This issue of the *Bulletin* explores technology that can and will affect our practices. Contributors have been asked to provide an overview of and context for their topics, but more importantly to give practical advice about how a resource can be applied.

Neurosurgeons are familiar with the advantages of technology in the clinical realm. I am reminded of this most graphically when the powered cranial perforator malfunctions and a burr hole must be completed with a hand perforator. This simple example illuminates what is good and bad about technology: It can make the job easier, but it also can be relatively costly and prone to failure.

It is my personal perspective that successful implementation of technology is the key to our specialty's continued success. At a time when reimbursement for medical services is declining or at best staying stable, enhancing office and clinical efficiency can buoy our practices. Annotated patient records and computer-based prescription services hold hope in lessening medical errors and the problems in patient care that result from those errors. New technology in the OR and for diagnosis can improve

A. John Popp is editor of the Bulletin, *president-elect of the AANS, and Henry and Sally Schaffer Chair of Surgery at Albany Medical College.*

patient outcomes. Computer-based claims managers can result in a higher percentage of "clean" billing submissions. However, this promise of technology must be evaluated in light of problems involved with implementation.

First, careful planning must precede implementation of new technology; optimal use requires an appropriate level of support. Second, not all new products deliver as promised and the optimism at purchase might be replaced by disappointment, dissatisfaction, and ultimately disposal of unused equipment. Careful evaluation and service contracts can help avoid this pitfall. Third, technology is costly. At a time when healthcare costs are 14 percent of the gross domestic product, any substantial increase in technology could affect the amount available for physician reimbursement. In this environment, thoughtful, cost-conscious evaluation of the benefits and disadvantages of technology is the business equivalent of informed consent.

AANS Tech Initiatives Are Bold, Balanced

The AANS long has recognized the importance of technology to its mission. The annual meeting showcases technology in its scientific sessions and in its exhibit halls where neurosurgeons can sample the newest products that industry has to offer. Newer technology initiatives by the AANS include 1) the Digital Technology Committee, aimed at keeping the AANS and its members at the leading edge of technology; 2) the use of new technology to communicate with its membership, primarily through E-News and its Web site, www.aans.org; and 3) the business partnership with Outcomes Sciences, Inc., in the Neuro-Knowledge Network that has broadened AANS' involvement in outcomes studies by connecting members to sophisticated clinical data collection capabilities.

While the AANS' bold involvement with technology is appropriate and consistent with serving the membership, the AANS also is mindful of the complexity and cost of technology. This balanced approach to the association's investment in technology is a sure sign of a mature organization with a foundation built on a tradition of excellence, but with its eyes on the future. ∎

TECHNOLOGY AT YOUR FINGERTIPS

Send your comments regarding technology or other issues in neurosurgery to the editor via digital mail, bulletin@aans.org, or regular mail, AANS, 5550 Meadowbrook Drive, Rolling Meadows, IL 60008. Letters to the editor are assumed to be for publication unless otherwise specified. Correspondence selected for publication may be edited for length, style and clarity.

NEWSLINE

FROM THE HILL

On April 25, 2002, Rep. Jim Greenwood (R-Pa.) introduced HR 4600, the "Help Efficient, Accessible, Low Cost, Timely Health Care (HEALTH) Act of 2002." More recently, Sen. John Ensign (R-Nev.) announced his intention to introduce the Senate companion of this bill, which is a comprehensive medical liability reform package intended to help stabilize the medical liability insurance market through tort reforms. Key provisions of the bill include: a one-year statute of limitations for bringing a liability action, periodic payment of damages, proportionate liability and a $250,000 cap on non-economic damages. The AANS and CNS are actively seeking co-sponsors for these bills. Information is available at http://capwiz.com/noc/issues/alert/?alertid=194596.

EMTALA Action: CMS Reverses Position on Simultaneous Call As a result of extreme pressure by organized neurosurgery, on June 13, 2002, the Centers for Medicare and Medicaid Services issued a memorandum to its state and regional enforcement offices clarifying the Emergency Medical Treatment and Labor Act rules related to simultaneous call. The memo states: "After lengthy discussions with the medical community, and understanding the impact of this policy, CMS is revising its policy to allow on-call physicians to provide coverage simultaneously at several hospitals to maximize patient access to care. As required in the SOM [State Operation Manual], hospitals must have policies and procedures to follow when an on-call physician is simultaneously on-call at another hospital and are not available to respond. Hospital policies may include, but are not limited to procedures for back-up on-call physicians, or the implementation of an appropriate EMTALA transfer.…" On the same day CMS also published additional guidance for on-call physicians in the form of a question and answer document. This publication also addresses the issues of 24/7/365 on-call coverage and rules related to scheduling and performing elective surgery while on-call. Both of these documents, information about the AANS/CNS grassroots campaign that contributed to the CMS action, and a link to the CMS' proposed EMTALA regulation (issued May 9, 2002) are available at www.neurosurgery.org/socioeconomic/emtala.html.

Neurosurgeon Elected to AMA Board of Trustees On June 18, 2002, the American Medical Association's House of Delegates voted for Peter Carmel, MD, chairman of the Department of Neurological Surgery at the New Jersey Medical School, to serve a four-year term on the AMA Board of Trustees. This is the first time in the AMA's 175-year history that a neurosurgeon has served on its board. Dr. Carmel campaigned in part for the AMA to work more collaboratively with and be more responsive to specialty societies, thus improving the AMA's ability to truly represent all of medicine. The AMA Board of Trustees now has eight surgeons out of a total of 20 board members. In an open letter to his neurosurgical colleagues, Dr. Carmel credited leading neurosurgical societies, including the AANS, for their efforts leading to his election. He noted the extent to which neurosurgery has taken the lead on many issues: "The first item of business before the House was an endorsement of Neurosurgery's plan to oversee 'expert' witnesses. Neurosurgery also took the lead in discussion of liability reform … I will need continued input from Neurosurgery if we are to rejuvenate the AMA."

HIPAA: File an Extension by Oct. 15 or Be Compliant by Oct. 16 Compliance with the first of the Administrative Simplification provisions of the Health Insurance Portability and Accountability Act of 1996 takes effect on Oct. 16, 2002. The provision for Electronic Health Transactions and Code Sets requires all electronic transmissions of health information to be in conformity with regulations standardizing transactions and code sets for electronic exchanges of health information and data. Specifically, the provision covers transactions including submission of electronic claims, referrals and other healthcare information that is handled electronically. An extension of the compliance deadline by one year to Oct. 16, 2003, is available; however, any provider seeking this delay must file a compliance plan with the Secretary of Health and Human Services by Oct. 15, 2002. For more information see the HIPAA feature article on page 30 and view details of the compliance plan at http://cms.hhs.gov/hipaa/hipaa2/TCSFormInstructions.asp.

For frequent updates to news from "From the Hill," check out the "Hot Topics" page at www.neurosurgery.org/socioeconomic.

NEWSLINE

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NEURO NEWS

CAST Approves Fellowship Program Accreditation The Committee on Accreditation of Subspecialty Training accredited the first four fellowship training programs during the May 2002 meeting of The Society of Neurological Surgeons. The four approved fellowship programs include two in spine surgery, one at University of South Florida College of Medicine and one at Barrow Neurological Institute; one in cerebrovascular surgery at the University of Cincinnati Medical Center; and one in peripheral nerve surgery at Louisiana State Medical Center. The SNS fellowship accreditation process was developed in response to concern that proliferation of post-residency fellowships in an unregulated environment did not assure quality in the fellowships. CAST is charged with updating and maintaining subspecialty training requirements and monitoring the training programs. Development of a neurosurgery fellowship match program is being considered. Additional information is available at www.societyns.org/fellowships.

Nominate a Humanitarian by Oct. 15 Nominations for the AANS Humanitarian Award, established in 1987 to honor an AANS member whose activities outside the art and science of medicine bring great benefit to medicine, are due Oct. 15, 2002. The award will be presented at the 2003 AANS Annual Meeting, April 25-May 1, in San Diego. All living AANS members from any category of AANS membership may be nominated. Voting members are invited to submit nominations for the award. For more information, contact Fremont P. Wirth, MD, AANS vice president and chair of the Humanitarian Award Committee, at (912) 355-1010 or at fwirth@bellsouth.net. For a nomination form, contact Adriane Lewis, governance coordinator, at (847) 378-0500 or info@aans.org.

ACGME Invites Comment by Aug. 1 on Proposed Resident Duty Hours The Accreditation Council for Graduate Medical Education approved proposed common requirements for resident duty hours at its June meeting. Comment on the new standards is being accepted by Aug. 1, 2002, via e-mail to dutyhours@acgme.org. The report calls for placing appropriate limits on duty hours, promoting institutional oversight, and fostering high-quality education and patient care. Highlights of the new proposals include a limit of 80 hours per week, averaged over a four-week period; a limit of continuous time on duty to 24 hours, with up to six hours additionally allowed for continuity of care and educational purposes; and a minimum rest period of 10 hours between duty periods. The complete report of the ACGME Work Group on Resident Duty Hours can be viewed at www.acgme.org/new/residenthours602.asp.

AANS Van Wagenen Fellowship Applications Available July 1 The annual William P. Van Wagenen Fellowship supports post-resident neurosurgical study in a foreign country for a period of six to 12 months. The stipend is $45,000 for 2003. Candidacy for this fellowship is open to senior neurosurgical residents in approved programs. An applicant must be a resident in the final year of training in an approved neurosurgery residency training program; intend to pursue an academic career in neurosurgery; and the intended country of study must differ from the country of residence. As of July 1, the application is available at www.neurosurgery.org/aans/research/vanwagenen. Deadline for application submission is Oct.18, 2002. Questions may be directed to Laurie Singer, development coordinator, at (847) 378-0526 or lms@aans.org.

Harnessing IT With a PDA

Coding Efficiency Is Just One of the Benefits

A frequent inquiry at the AANS regional coding and reimbursement courses concerns the use of hand-held computers, or personal digital assistants (PDAs), as a component of information technology used to manage a neurosurgical practice. In a simplistic sense, the PDA is a compact storage device, with varying and often expandable memory capacity, which allows the user to access and store information. (See "PDA Primer," page 21.)

Although most of those who have PDAs use them as calendars and address books, the memory and recording capability of these tools coupled with the ease with which information can be exchanged suggests that we are underutilizing the PDAs in medical practice. Several examples that will be explored in this Coding Corner include reference resources, prescription writing and transmission, Evaluation and Management (E&M) documentation and coding, as well as surgical procedure code capture and submission.

The Resources Are Inside

The PDA can allow the physician to keep a variety of reference resources close at hand. For example, Handheldmed (www.handheldmed.com) sells multiple reference texts for the PDA, including Taber's Medical Dictionary, the Washington Manual, Harrison's Companion Handbook, and the Merck Manual. Although specific guides are available for some specialties (see www.pocketmedicine.com), references specific to neurosurgery remain in development. Moreover, the growing availability of wireless access found on these machines can allow access to Medline and online journals from any location.

PDAs commonly are used for prescription writing and transmittal. Although simple completion of a prescription on a PDA may seem unnecessary, prescription-writing software reduces paperwork and allows the physician to check for drug interactions that may be harmful to the patient. An article in *Medical Economics,* "Electronic Prescribing: What Does Your State Allow?" (www.memag.com), reviews the use of PDAs for electronic prescriptions and examines the state-by-state regulations concerning writing and transmission of electronic prescriptions. (Also see "PDAs Promote PDQ" in the Spring 2002 issue of the *Bulletin.*) A variety of prescription-writing programs are available including AllScripts, ePhysician, ePocrates and iScribe.

However, the most desired application of PDA technology for physicians is the efficient capture of the procedural services that are provided to patients on a daily basis. Several programs are available on the Palm Operating System or the Windows CE platform to record and transmit patient encounter information. For example, one can document E&M services using a pop-down menu that allows entry of history, examination, and medical decision-making components of hospital and office patient encounters. Several programs suggest possible E&M levels of service to help navigate the complex documentation guidelines in determining the proper code to use. In addition, one can look up and record the surgical procedures performed to allow immediate access to procedural coding information and efficiently transmit charge data to the office computer. MD Coder for Neurosurgery by Mobile Design Technologies combines ICD-9, CPT, and patient tracking information to facilitate charge capture and documentation. A product available for a free online trial is Tops E&M Coder (www.e-mds.com).

Other programs include Pocket Billing, Pocket Practitioner, ZapCode and ZapBill. These and other products can be compared and purchased at www.pdamd.com and www.handheldmed.com.

IT Solutions for Benchmarking Data Sought

Despite these innovations, neurosurgeons and other specialists continue to be limited by inadequate benchmarking data in the quest for effective practice management. Through a modified resolution originally presented by Robert Schwetschenau, MD, to the Council of State Neurosurgical Societies, an ad hoc committee has been formed, co-chaired by Mark Linskey, MD, and me, to organize practice managers around the country. We are inviting them to a meeting during the CSNS annual meeting in Philadelphia this September to explore the development of an independent organization that will facilitate collection of benchmarking data for overhead and professional liability costs, as well as provide a forum for discussing problems and solutions that might enhance the efficiency of everyone's practice.

In conclusion, the obvious benefit to the neurosurgeon from the growth of information technology is the convenient availability of portable information storage and exchange. Although the PDA does not eliminate the need to document physician work and submit charges, it facilitates capture of physician work that was either previously collected on note cards or obtained long after the fact through hospital OR logs or chart reviews. However, in our current competitive reimbursement and liability environment, it behooves us to explore novel methods for improving practice accuracy and efficiency. ■

Gregory J. Przybylski, MD, is associate professor of neurological surgery at Northwestern Memorial Faculty Foundation of Northwestern University in Chicago and a faculty member for AANS-sponsored coding and reimbursement courses.

TECHNOLOGY

THE RESOURCES ARE OUT THERE!

INCORPORATING INFORMATION TECHNOLOGY INTO NEUROSURGICAL PRACTICE **BY JOHN ORÓ, MD**

The current environment for the practice of medicine is challenging. Managed care mandates; reductions in Medicare reimbursement; legislation such as the Balanced Budget Act of 1997, the Emergency Medical Treatment and Labor Act, the Health Insurance Portability and Accountability Act; and other factors have led to an urgent need for reducing the cost of healthcare while improving its safety. At the same time, young neurosurgeons in training need more specialized instruction in the increasingly specialized techniques of our profession. Most neurosurgeons need help in better managing their time, quickly accessing patient information and radiological studies, and maintaining patient records for ready access—all while maintaining compliance with various guidelines and mandates.

While information technology does not represent a universal panacea for the ills of medicine, many of its applications hold promise for helping neurosurgeons manage various challenges related to medical practice. This issue of the *Bulletin* addresses some of the ways in which technology has impacted the practice of neurosurgery, with emphasis on the tools that can be used to help manage our practices or simply keep us better organized.

The New Computers

Ten years ago desktop and laptop computers were mostly used for preparing letters or reports, and they were sometimes tied to local area networks to access data. The new computers now available at low cost are powerful tools that allow data manipulation, three-dimensional imaging, and routine connection to a worldwide network.

The new computers are making inroads within hospitals. Reviewing radiographic images on computer systems such as PACS is now commonplace in many facilities. Computer-based medical records are becoming more sophisticated and more useful. Computerized physician order entry systems have been shown to decrease medication errors by more than 80 percent; in addition, they have resulted in a signifi-

cant cost savings for hospitals. With correct password and access permissions, a physician can access a patient's medical record from any site within the treatment facility. In some cases these records even are accessible off site.

The increasing power of the new microprocessors and software applications now is available in handheld computers, the use of which has become second nature to many physicians in their practices. (See "Typical Day With a PDA" in this issue.) The fusion of the handhelds to cell phones and more recently to digital cameras, presages a new era in information management.

Of course, before anyone can have access to data, it first must be entered. The laptop computer increasingly is being seen within the clinic exam room itself. With a little practice, it becomes a simple matter to add data as the patient is responding to questions by typing or, following the visit, by voice-activated data entry. In addition, the marketplace provides touch-screen programs on specific disorders such as low back pain, which can readily capture data, create a final report, and also determine the appropriate code for the visit. Handwritten notes and orders and their likelihood of errors soon will not be tolerated.

Digital Tools for Education

Personal computer tools have moved beyond word processing and spreadsheet applications. Software such as PowerPoint, the standard in presentation software, is a powerful tool for education and for presenting the message of neurosurgery to the community. The accessibility of digital cameras and desktop scanners easily allows incorporation of images into educational presentations that can be updated at the last minute and which can be stored—with appropriate backup—in a laptop computer that can travel with you. Increasingly, neurosurgeons are incorporating video into their presentations, introducing a whole new dimension for educating young neurosurgeons in specialized techniques. (See

"The Neurosurgeon as the Complete Digital Imager" and "PowerPoint: Great Content Deserves Great Design" in this issue.)

Digital Tools for Communication

E-mail has taken its place among the major transforming computer technologies because it allows physicians to rapidly communicate with each other regarding patients, in particular those with complex problems. Hospitals and academic centers use e-mail to update physicians on policies and announcements.

> The laptop computer increasingly is being seen within the clinic exam room itself. With a little practice, it becomes a simple matter to add data as the patient is responding to questions by typing or, following the visit, by voice-activated data entry.

However, of concern is the overwhelming volume of e-mail messages in general and in particular the amount of junk e-mail most users receive. Security of e-mail systems in this age of hackers and HIPAA also is of concern. (See "E-mail Between Colleagues: Promises and Pitfalls" in this issue.)

Another factor that impacts the utility of e-mail is that the immediacy of the form suggests urgency. A response to even the most mundane inquiry is expected immediately. Physicians who routinely communicate with patients via e-mail quickly find that they need to develop policies and a system to keep the load from becoming overwhelming. (See "E-mail Communication With Patients" in this issue.)

The unprecedented access to information that was driven by the Internet has had an empowering effect on patients who routinely search the Web for information on disorders, treatments, and physicians. Recognizing the need for a Web presence, many neurosurgeons have created their own Web sites as informational, marketing, and increasingly, interactive tools. (See "Web Site 101" in this issue.)

Can Computer Technology Make a Difference?

The nature of neurosurgical practice is being transformed by these new computer technologies. But to be truly useful, these new tools must make a difference. For insight into how a particular tool can be chosen to benefit your practice, see "Practice Management Software: Promise or Peril?" in this issue.

It is up to neurosurgeons to share their computer technology experiences with others through the AANS *Bulletin*, bulletin@aans.org. It is only through collaboration that we can use the new tools available to us to move our profession forward. ∎

John Oró, MD, professor of neurosurgery at the University of Missouri-Columbia, is chair of the AANS Digital Technology Committee, and a member of the AANS Board of Directors.

THE NEUROSURGEON AS THE COMPLETE DIGITAL IMAGER

HOW TO GET GREAT INTRAOPERATIVE IMAGES

BY CARLOS A. DAVID, MD

The digital revolution of the past few years has generated a multitude of consumer digital cameras with capabilities once the province only of professional photographers. The neurosurgeon with one of these cameras and a working knowledge of computers can obtain spectacular intraoperative images far beyond the typically frustrating results obtained with a 35mm camera and film. The following basic guide to intraoperative digital imaging using today's digital cameras and the operating microscope attempts to illustrate how excellent images of interesting cases can be achieved.

Anatomy of the Digital Camera

The heart of the digital camera is the CCD, or charged-coupled device. This electronic device is capable of transforming a light pattern into an electrical charge. That is, as photons of light strike a pixel (picture element), an electrical charge is created. This charge is proportional in magnitude to the intensity of the sensed light. The electrical charge then is transferred in sequence to an analog-to-digital converter; this outputs an electronic rendition of the image that can then be stored or displayed on a computer screen.

Important Camera Features

There are a number of excellent cameras available on the market, and the list grows longer each day with the addition of more sophisticated and higher resolution capabilities. Important features to consider when selecting a camera for intraoperative imaging include the CCD resolution; lens capabilities comprising optical zoom, internal zoom, macro capability, and a threaded lens; an LCD (liquid crystal display); and image storage and transfer features.

CCD resolution is critical for sharp, crisp output of the image to a monitor or for printing to slide or film. The more pixels present on a CCD chip, the higher the resolution. The multi-megapixel cameras with greater than two million pixels (non-interpolated) are preferable. Cameras of up to five megapixels now are available. In practical applications, however, this amount of resolution may not be needed. Depending on the final output (computer presentation or print), three megapixel cameras will usually suffice. However, if printing large images (greater than eight by 10 inches) is desired, then more megapixels are desirable.

Several lens features also are critical. Optical zoom—the ability of the lens to change focal lengths, thereby enlarging the subject image—should be at least 3X. Care must be taken in discerning whether a camera has optical zoom or digital zoom. Digital zoom refers to a camera's ability to further enlarge the image by interpolating new pixels. The result is significantly inferior and has little usefulness for intraoperative imaging. Also, a camera with internal zoom is preferable so that the lens assembly will not move during focusing.

The ability to take macro images—extreme close-up shots, usually within one foot or less—is important for through-the-microscope shots as well as for framing individual pictures of CT scans or MRI films. The presence of threads on the camera's lens allows significant flexibility in using alternative lens converters, filters, and coupling the camera to the microscope. A variety of accessories that screw onto these threads are available.

Most digital cameras offer a preview screen apart from the optical viewfinder. These small, color LCDs are essential for framing and composing intraoperative images because they not only provide a preview of what the camera will see before the picture is taken, they allow for fine adjustments during coupling of the camera to the microscope. In addition, they allow review of taken images to ensure the expected result. The optical viewfinder, although useful for most general photography, has no value during intraoperative imaging.

The method of image storage and transfer refers to how the camera stores and downloads its pictures to the computer or printer; different camera manufacturers offer different features that facilitate storage. These include fixed storage within the camera, 3.5 inch floppy disks, removable memory cards and, in some newer cameras, recordable CDs or miniature hard drives such as the IBM Microdrive. For ease of use and maximum flexibility as well as affordability, removable storage media is preferred over cameras with internal memory and those with standard 3.5 inch floppy disks. The preferred types of storage media include SmartMedia, Compact-Flash, and Memory Stick memory cards. Obviously, with greater memory capability, more images can be stored.

Downloading images to a computer can be accomplished via parallel, SCSI (small computer system interface), or serial cable, and in newer cameras via USB (universal serial bus) cable or FireWire (also known as IEEE1394). Although FireWire is the fastest method by far, the expense associated with this technology has allowed USB to become the industry standard. USB is preferable to older technologies such as serial connections due to the much faster communication with the computer, but it requires a USB equipped PC or Mac. Most cameras that offer USB also offer serial and/or parallel connection options. An alternative, if one uses an older serial-type camera, involves using removable CompactFlash media and a USB card reader to download to the computer.

Camera Recommendations

The ideal camera for intraoperative imaging should contain a high resolution megapixel CCD, optical zoom, internal zoom, macro capability, removable storage media, color LCD, and remote control.

The afocal setup assembly is mounted on the microscope eyepiece, and the remote control is placed near the microscope control arm.

There are a number of excellent consumer digital cameras on the market for less than $1,000 that meet these specifications. Just one year ago the selection included the Olympus C-3000Z, Epson PhotoPC 3100Z, Canon PowerShot G1, and the Nikon family of cameras, but the explosion of digital cameras on the market now renders discussion of individual cameras beyond the scope of this article. However, the Nikon family of cameras continues to be preferred by the author because these cameras have some of the best color purity and tonal balance, in addition to superb optics, resulting in superior image quality. In addition, the small threaded internal zoom lens allows for efficient coupling to a microscope eyepiece. The Nikon family includes the older 950 and 990 models as well as the newer 995. The 880 remains an excellent camera but requires an adapter in place of standard lens threads.

The author uses the Nikon 990 camera. This 3.34 megapixel camera can take images with a maximum size of 2038 by 1536 pixels. It has both full automatic and full manual settings. Its lens is a nine-element 3X optical zoom lens that contains 28mm threads and boasts the closest macro capability on the market. The camera uses CompactFlash cards and has a 1.8-inch LCD. It has USB and serial capabilities as well as a TV video output. Lastly, it can be controlled remotely with an optional wire remote control.

THE COMPLETE DIGITAL IMAGING STATION

The complete digital imaging station goes beyond just the camera. The following comprises some of the basic elements for getting great intraoperative images.

THE DIGITAL CAMERA: High resolution megapixel CCD, optical zoom, internal zoom, macro capability, threaded lens, removable storage media, color LCD, and remote control.

GRAPHICS WORKSTATION: The desktop computer, ideally with a 50GB hard drive; processor speed of 1.6MHz; a 32MB video card and a graphics accelerator. RAM is critical with 512MB recommended and 64MB representing the bare minimum.

DIGITAL MEDIA READER: A CompactFlash or SmartMedia reader which can be connected to the desktop PC to transfer the images, preferably through a USB or FireWire connection. Speed is essential.

IMAGE EDITING SOFTWARE: Software to adjust and enhance digital images. Adobe Photoshop contains all the essentials and many powerful tools in addition.

OFFLINE STORAGE: Hard drive, various disc-based media, or preferably, a CD burner.
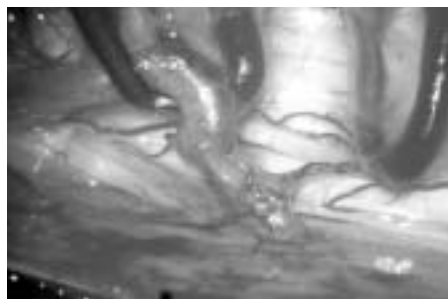
CATALOGING SOFTWARE: A database or commercial cataloging software for tracking and finding all those images.

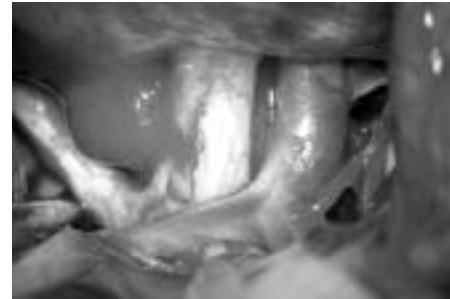**PHOTO PRINTER:** Capable of printing on photo glossy paper.

OTHER: Flatbed scanner, slide scanner, digital video camera, video editing software.

The left photo is an example of a poorly aligned image resulting from handheld exposure. Notice the circular field of view.

The center photo is a poorly framed image of a Type 1 Spinal AVM.

An optimal intraoperative image.

Affixing the Camera

Unlike 35mm SLR (single-lens-reflex) cameras, commercial digital cameras are equipped with lenses that are not removable. In order to photograph through the microscope, one must employ a configuration termed afocal coupling. Afocal coupling is a method of photography frequently used by amateur astronomers for imaging the planets; the camera's lens is lined up with the eyepiece of the telescope or, as in our case, the microscope.

Photographing afocally can by done by simply holding the camera up to the eyepiece. The camera must be held as close as possible to the eyepiece with the image centered on the LCD view screen. Zoom in on the image to enlarge the field of view and minimize vignetting (when the image from the eyepiece does not fill the cameras field of view, resulting in a circular image that does not reach the corners of the picture frame).

Although this method generally works, it is a less than ideal setup. A more stable configuration involves threading an appropriate adapter to the camera lens, allowing it to be mounted on the microscope eyepiece throughout the case. The specific thread size must be known for the type of camera used, and the adapters can be purchased from photography or astronomy vendors.

There has been significant interest in this type of configuration, and a plethora of adapters specific to a variety of digital cameras, including those with threadless lenses, currently are on the market. For the Nikon 990 the thread size is 28mm, and the adapters required are a 28-to-T thread step-up ring and an eyepiece projection adapter. The step-up ring is connected to the camera lens followed by the eyepiece projection adapter. The entire assembly is then secured to an unused eyepiece on the microscope via three thumb-screws on the eyepiece projection adapter. A remote control cable can be hooked up to the camera and secured near the microscope's control arm, where the surgeon or assistant can reach it during the case. The entire setup is depicted in the photo on page 13.

Storing Your Images

There are several standard file formats for storing digital images. On many cameras the user can set different levels of quality

WEB RESOURCES

ADOBE PHOTOSHOP
www.adobe.com/products/photoshop/main.html

APPLE IPHOTO
www.apple.com/iphoto

CANON POWERSHOT
www.powershot.com

COREL PHOTO-PAINT
www3.corel.com

EPSON PHOTOPC 3100Z
www.epson.com/cgi-bin/Store/index.jsp

FILEMAKER PRO
www.filemaker.com/products/fm_home.html

IBM MICRODRIVE
www.storage.ibm.com/hdd/micro

NIKON 995
www.nikon-image.com/eng/PDF/index995.htm

OLYMPUS C-SERIES
www.olympusamerica.com/cpg_section/cpg_digital_cseries.asp

POWERPOINT: GREAT CONTENT DESERVES GREAT DESIGN

BY JOHN ORÓ, MD

You're on the road presenting a neurosurgical lecture, or it's your turn to present at grand rounds. You've worked hard on the content of your talk, but a third of the way through your PowerPoint presentation you sense the audience beginning to drift.

Unfortunately, even a great talk can be undermined by flat design. While PowerPoint is today's power tool for presentations, its structured layouts, especially in text-heavy presentations, can have a soporific effect.

Try these PowerPoint tips to break from the standard design of the application's templates and keep your audience engaged:

TITLE SLIDE:
Your guests have just entered the conference room and your title slide is up on the screen. The standard yellow or white letters on a blue background signal that the talk may be "more of the same." Instead, enhance the title slide by giving your guests a preview of what is come. Copy a few of the images from the body of your talk and insert them into the title slide, shrinking them to thumbnails and placing them around the title information. For an extra punch change the background to a solid color that enhances the images. Another option is to place a single image on half of the slide, and place the title text on the other half. Insert a blank slide as a starting point and move and the reshape the text boxes in the PowerPoint title slide. For more drama, use a single image as the background of the slide and work the title text into less active areas of the image.

TEXT:
PowerPoint's templates often employ Times as the default font, but in digital presentations its serifs can appear a bit shaggy. Try Arial or another sans serif font for cleaner projection. This is easily accomplished by changing the font in the Master (View menu > Master > Slide Master). The change will apply to all of your slides (but not to any new text boxes you have created). PowerPoint provides plenty of text layouts (with or without an image) that allow variety yet maintain visual order in the presentation. However, if you are making an important point, start with a blank slide, change its background color and include text for that point only. An important quote can be handled in the same manner. This is where the Times font may play a role, especially for a historical quote; the difference in type style helps the quote stand out.

IMAGES:
When an image is the most important element of the slide, don't be restricted by the template's layout options. Insert a blank slide, enlarge the image and add a text box as needed. The text box can be placed underneath or to either side of the image, or it can even flow over a less important portion of the image. Changing the background to a color that enhances the image also helps the image stand out—for example, black for radiographic images, or various shades of gray for historical images. Again, as in most good design, you want to avoid using an excessive number of colors. Overlapping two or several images can provide a sense of depth or time. Placing a shadow or line around the image has the same effect as a frame on a picture, but remember that the image, not the frame, is the important element. If in need of an image, the user can access one of the image search engines such as Google: Images (http://images.google.com) and quickly find multiple images that usually can be included in one's presentation as long as credit is given.

TRANSITIONS:
Forty slide transitions are available in PowerPoint. In considering slide transitions one should strive to be creative without being irritating. A presentation in which each slide has a different transition is more than distracting. On the other hand, introducing a different transition can declare a new section of the talk or add impact to selected slides. For instance, in a presentation that is moving from the Diagnosis section to the Treatment section, a different transition signifies the new portion of the talk and can help re-engage those who may be drifting; this same transition can be used to introduce each new section in the balance of the presentation. (A pause and a change in the tone of your delivery completes the transition). If you are introducing a new technique or concept, the "split verticle out" or "box out" slide transitions add impact. In general, most of slide transitions in your talk will be the same; however, when changing to a new section, or for impact, try a different transition. ■

and resolution. The degree of resolution needed depends upon the final output desired. When taking images, using the highest resolution is recommended. Doing so will allow flexibility if one wishes to output the images for print, 35mm slide, or reproduction for publication at a later date.

However, the greater the degree of resolution, the larger the file that must be stored on the computer. In order to store images more compactly, various file compression formats are in use. The two most common are the TIFF (tagged image file format), which allows the original image to be reconstructed from the compressed image with no loss of information, and JPEG (joint photographic experts group), which selectively discards low contrast fine detail that is superimposed on higher contrast features. For onscreen viewing, such as PowerPoint presentations or Web pages, the smaller JPEG files are recommended, but the original files should be stored as TIFF images.

Storage becomes an issue as images accumulate. It is quite easy in the course of a few months to fill a 1GB hard drive with stored digital images. Storage solutions include purchasing separate hard drives, using storage media such as superdiscs, Zip disks and drives, and "burning" CDs. All of these solutions work; the challenging issue then becomes finding your images later.

One option is to catalog images so that they can be accessed by subject, keywords, and other search criteria. The author created a searchable database using File-Maker Pro that tracks operative cases and allows images to be accessed by patient last name on previously archived CDs. Recently, third-party image cataloging products have become available, and some manufacturers have begun to include them with a camera's software. The author recently has begun exploring Apple iPhoto, a product that allows albums of images to be created and quickly and efficiently sorted by keywords and various search algorithms.

Improving Your Images with Photoshop

There are a number of ways to improve photos digitally. These include adjusting color balance, contrast, brightness, and sharpness, as well as removing and touching up elements in the image. Most cameras include some basic image editing software that performs at least some of these functions, while powerful image editing applications like Adobe Photoshop and Corel Photo-Paint available on the market integrate all of them.

Using Photoshop, one of the more powerful image editing tools, involves adjusting the histogram and levels of an image. The histogram is a graph of the image's bright-

> There are a number of ways to improve photos digitally. These include adjusting color balance, contrast, brightness, and sharpness, as well as removing and touching up elements in the image.

ness. The X-axis represents the scale of brightness values (0 being black and 255 being white, with all the shades of gray in between), while the Y axis represents the number of pixels with that brightness in the image. The utility of the histogram is that it allows more precise alterations than brightness and contrast controls. By adjusting points on the histogram, the shadows, highlights, and mid-tones can be adjusted independently. As a start, adjust the black and white points on an image by sliding the triangles on the left to the first groups of pixels, and the triangle on the right to the first group of pixels on that side of the graph. This maneuver basically adjusts the contrast. A more powerful adjustment of the image's brightness scale is available using the curves function.

Next, adjust the color levels (basically, the luminosity of the red, green and blue channels) by opening the levels tool and setting it so the individual color channels are adjusted independently. Adjust the settings until a better color balance is achieved. At this point, the image has enhanced contrast and better color balance.

Then the sharpness of the image can be adjusted using the sharpness tool, or preferably using the unsharp-mask tool in Photoshop or Photo-Paint. This tool analyzes the image's contrast variations, in effect looking for edges and changing the degree of contrast between pixels in these edges. Using this command, an amount is set (how strongly the effect is applied), a radius (indicating how far from the edges to apply the change), and a threshold (telling the software what level of contrast variation will be affected). The best way to apply this tool is to backtrack from a high radius until distortions are lost and the appropriate amount of fine detail enhancement is reached. Then adjust the amount between 50-150 (trial and error works best) and change the threshold until only the areas you are targeting are affected. At this point save the image in TIFF file format and store it.

With these minor changes, less than optimal images can be improved dramatically.

Intraoperative imaging through the microscope need not be restricted to 35mm film. The digital revolution has placed in the hands of consumers a variety of equipment with capabilities of a professional level. As this article has briefly outlined, using a relatively simple setup and modest equipment, spectacular images can be recorded and stored for future use with a minimum of effort. ■

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E-MAIL COMMUNICATION WITH PATIENTS

GUIDELINES FOR WHEN AND HOW E-MAIL CAN WORK FOR YOU

Although face-to-face communication is the foundation of the physician-patient relationship, there are situations for which an office visit may not be necessary, and electronic mail (e-mail) communication may be more expedient.

However, e-mail should be used only to support direct interaction. Also, it should be used with considerable caution because along with great promise, e-mail potentially poses unique liability pitfalls.

The Benefits

E-mail can provide both physician and patient with several significant benefits.

- It's fast, convenient and may improve patient management.

- It may encourage patient participation in care and strengthen physician-patient relationships.

- It provides the patient with a written account of physician information and advice that can be saved and referenced, thereby increasing patient understanding and compliance.

- It automatically provides the physician with a written record of communication (unlike a phone call).

- It allows the physician an opportunity to address patient issues in a calm and thoughtful setting as opposed to the, at times, hurried venue of an office visit.

- It allows the physician to conveniently attach reference documents and links to credible third-party information.

- It may improve patient and provider satisfaction.

Using E-mail

Prior to establishing e-mail communication with a patient, the physician should discuss the process with the patient and ask him or her to read and sign an online communications informed consent form. This form may cover a variety of issues, including instructions for using online communications, good communication etiquette, charges for using online communications, conditions of using online communications, access to online communications, risks of using online communications and, finally, the patient's signature of acknowledgment and agreement. This information should become part of the legal documentation and medical record. In addition to a copy of the informed consent form, the physician may want to provide patients with a wallet-sized summary of the contract's highlights. (See Figure 1, page 18.)

Appropriate and convenient uses for e-mail include scheduling appointments, releasing records (e.g., test results), providing follow-up instructions, explaining general medical information, answering billing questions, sending account reminders and refilling prescriptions.

Requests for new prescriptions should not be handled through e-mail. Instead, a good-faith examination of the patient should be performed in person to assess the medical necessity of any new prescription. Additionally, physicians should not answer clinical questions regarding a condition for which the patient has not been seen in the past six months.

The Risks

E-mail is no different from verbal communication in that physicians must avoid medical jargon and express themselves clearly, using terms the average person can understand. They should also be mindful of tone, and edit out any inappropriate or unprofessional comments.

Online communications, however, have created new challenges. The guidelines drafted by the eRisk Working Group for Healthcare, a consortium of national medical societies and medical professional liability carriers, and Medem, a network provider initially founded by the nation's medical societies that serves the healthcare industry, offer physicians help in minimizing risk.

Specifically, the guidelines advise physicians to address the following issues:

- **Security**—Do not use unsecured e-mail. Choose a vendor that complies with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) standards by offering authentication and encryption—which standard e-mail services do not provide. Also, safeguard against unauthorized access to e-mail messages and computer hardware by using technologies such as automatic logouts and password protection.

- **Authentication**—Take reasonable steps to confirm the identity of e-mail correspondents and ensure that the information goes only to persons who are authorized to receive it.

- **Confidentiality**—Take reasonable steps to protect patients' privacy by guarding against unauthorized use of their medical information.

- **Unauthorized access**—Establish procedures to help minimize the risk of unauthorized distribution of patient information.

- **Physician-patient relationship**—Weigh carefully any move to initiate a physician-patient relationship solely through online interaction, as this can increase liability exposure. Payment for online services may further increase that exposure.

- **Medical records**—Maintain a printed copy of all e-mail with patients regarding their ongoing medical care, and add this copy to the patients' medical records. Inform patients of this policy.

- **Licensing jurisdiction**—Online interactions with patients are subject to state licensure requirements. Communicating online with a patient who lives outside of the state where you hold a license may increase your risk.

- **Authoritative information**—Make sure that information you provide via e-mail or on a medical practice Web site either comes directly from you, or from a credible source and has been reviewed by you. You are responsible for the information that you provide or make available to your patients online.

- **Commercial information**—Be careful of your wording in e-mail or on your Web site of an advertising, promotional or marketing nature. Such language may increase your liability, especially if it includes implicit guarantees, implied warranties, or misleading or deceptive claims.

In addition to these guidelines, the American Medical Association (AMA) has published extensive e-mail guidelines of its own at www.ama-assn.org/ama/pub/category/2386.html. A sampling of the AMA's guidelines includes establishing a turnaround time

FIGURE 1
E-MAIL CONTRACT HIGHLIGHTS FOR PATIENTS

After patients have read and signed an e-mail contract, and it is filed in their records, the physician may want to provide a pocket-sized summary of the contract's important points. Whether it's a laminated card for the wallet or a sticker affixed to the back of the physician's business card, an at-a-glance reference of the rules should help facilitate good e-mail communication.

REMEMBER THESE E-MAIL GUIDELINES:

- E-mail is not for emergencies! E-mail is not appropriate for urgent or emergency situations.
- Be concise. Come in for an appointment if the issue is too complex or sensitive to discuss via e-mail.
- Key in the topic (e.g., medical question, prescription renewal, appointment request) in the subject line.
- All e-mail will be filed in your record.
- Office staff may receive and read your messages.

FIGURE 2
SAMPLE ELECTRONIC SIGNATURE FOR PHYSICIAN E-MAIL

John Smith MD
Neurosurgery
10 Main Street
Los Angeles, CA 90067
Phone: (310) 555-1212 Fax: (310) 555-4321
E-mail: jsmithmd@doctor.com

- Call the office if the matter is urgent.
- Call 911 in an emergency or go to the ER!
- Please follow security guidelines.

for messages, configuring an automatic reply to acknowledge receipt of messages, and inserting an "electronic signature" at the end of all messages (see Figure 2).

While few physicians currently use e-mail to communicate with patients—13 percent to 23 percent, according to recent studies—patients' desire to e-mail their doctors appears to be growing. A recent survey by Jupiter Media Metrix (New York) found that 54 percent of patients would switch to a doctor who permits the use of e-mail to schedule appointments and renew prescriptions, as well as to ask treatment questions and check lab results.

Given patients' increasing interest in online dialogue with their doctors, an increasing number of physicians may soon be moving from the hypothetical to the "how-to" of initiating e-mail interaction. The guidelines outlined in this article were drafted to address physicians' practical concerns regarding security, confidentiality and liability risk. When those concerns are met, many more physicians may begin to explore the practical potential of e-mail with patients. ■

E-MAIL BETWEEN COLLEAGUES WHAT PHYSICIANS NEED TO KNOW

Many neurosurgeons take advantage of e-mail technology to consult with colleagues regarding difficult cases through unsecured (unencrypted) home and office e-mail accounts. Subscribing to listserves (electronic mailing lists) such as those of the AANS/CNS sections at www.neurosurgery.org/listserv represents another way that e-mail facilitates communication and participation in neurosurgery. Both the scope of e-mail communication and the responsibilities regarding its use have evolved in the last 10 years. The *Bulletin* asked the AANS director of information services and representatives of Ross & Hardies law firm to discuss what neurosurgeons need to be aware of regarding their e-mail communications today.

E-MAIL INNOVATIONS EXPAND THE SCOPE OF MESSAGING

Recent innovations in e-mail technology have expanded the definition of e-mail from a simple digitized text message to a communication method that encompasses digitized images, videos, voice messages and even music. For a neurosurgeon these innovations can mean that a voice message narrative may accompany complex text or an entire presentation on a neurosurgical technique, a set of patient images, and video of an operation, all bundled into one message. Integrated network communications systems allow digitized voice messages, faxes, and images to bridge into e-mail systems for easy information management. Users who are members of large networks can anticipate exchanging e-mail across wireless connections in the very near future.

Security needs to be an integral part of an e-mail system. Many e-mail applications such as Eudora and Outlook offer encryption for sensitive information, and the ability to filter out objectionable or unsolicited material ("spam"). Additional security features like antivirus software, as well as "firewall" packages that keep out both hackers and viruses, can be purchased to fit the scope of your particular system. McAfee.com Corporation (Virus Scan Online, Personal Firewall Plus, www.mcafee.com) and Symantec Corporation (Norton AntiVirus, Norton Personal Firewall, www.symantec.com/product) offer a variety of security software packages.

To accommodate the burgeoning capabilities of e-mail systems and maintain optimal functionality for the user, the workstation environment needs to have abundant internal memory (256MB RAM or more); contain a fast processor to handle the large data transfer tasks demanded by image transfer (Pentium 4 or equivalent); and have a generous allowance of hard disk storage (20GB or more) to store these digital files for quick retrieval.

Outsourcing to an e-mail service organization, for example Critical Path (www.cp.net/sitemap.html), Commtouch Software (www.commtouch.com) or EarthLink (www.earthlink.com), is an option for providing a complete package of advanced e-mail message handling and management services without the investment in software, security and maintenance. — *Kenneth L. Nolan is the AANS director of information systems.*

E-MAIL CONSULTATION AND PATIENT CONFIDENTIALITY

Physicians who engage in e-mail or listserve consultations with other physicians regarding a patient's condition need to be aware of the patient privacy protections under the Health Insurance Portability and Accountability Act (HIPAA).

HIPAA defines protected health information as any demographic information which identifies or can reasonably be used to identify an individual relating to the patient's past, present or future physical, mental health, or condition; the provision of healthcare to the individual; or a past, present, or future payment for the provision of healthcare.

If the physician removes patient-specific information such as the patient's name, geographic designations, phone and fax numbers, e-mail address, etc., then such communication is no longer subject to the HIPAA privacy rules. However, most U.S. states consider communication about a patient's condition as the practice of medicine under telemedicine; therefore e-mail consultation is subject to each state's laws regarding physician licensure and laws related to the practice of telemedicine.

Conversely, if information identifying a patient is not removed, HIPAA privacy rules will apply. To comply the physician will need to obtain prior written consent from the patient for diagnostic and treatment-related disclosures; a general consent form that a physician typically provides to new patients can be adapted to meet HIPAA's specific requirements. The physician additionally must ensure that the communication containing protected health information is secure and encrypted in accordance with HIPAA's Electronic Health Care Transaction and Code Set Standards (www.aspe.hhs.gov/admnsimp/bannertx.htm).

Because HIPAA does not preempt stricter state law, a physician also should determine if there are state requirements that need to be observed in addition to HIPAA's requirements. Typically, the law of the state where the patient resides applies to medical consultations. Moreover, because many nations and the European Union have adopted their own—often stricter—patient privacy laws, any international consultation must conform to that country's privacy laws, if any. — *Morgan Moran, JD, and Kara Friedman, JD, Ross & Hardies, Chicago, Ill.*

TYPICAL DAY WITH A PDA

POCKET PC SYNCHRONIZES THIS PHYSICIAN'S WORK AND LIFE BY NILAY SHAH, MD

Always somewhat of a gadget hound, I bought a Palm Pilot, a personal digital assistant (PDA) that runs on the Palm operating system, back in medical school. I used it to take notes at the various grand rounds and conferences I attended, as well as to jot down the "pearls" from my various attending physicians during rounds. The technology was a bit clunky and not a very efficient way to input a large quantity of data. Then last year I bought a Compaq iPaq. I switched to Windows-based Pocket PC technology primarily because of the faster processors, bigger, brighter screens and much more memory capacity. I currently own a Hewlett-Packard Jornada 568 which, like all the new Pocket PCs from Casio, Toshiba, AudioVox, Compaq and NEC, features a 206MHz processor and 320 x 240 resolution screen (processor to be upgraded this summer in most models). My Jornada has a compact flash slot into

which I popped in a 256MB card that I picked up off of the Internet for $70, leaving me with a 312MB machine.

My day starts with a quick synchronization of the Jornada with my home PC. Using Mazingo technology I get a download of some of my favorite essential reads off the Internet onto my PDA—AccuWeather, the *New York Post* and *The Onion* for my downtime. My e-mail also gets downloaded for me to review later in the day.

My morning in the hospital starts with a check-up on the stroke unit and any new patients admitted overnight. Occasionally a patient comes in with a disease I don't remember the details about, such as meliodosis. I can take a quick look on my PDA using Skyscape's 5MCC, the hand-held version of Griffith's 5-Minute Clinical Consult. This handy application has details about the basics, diagnosis, treatment, medications, follow-up and miscellaneous data on a large number of diseases. When I go through patient charts, I check on drug-interactions and medications I don't recognize on the newly released and free mobile PDR, the *Physician's Desk Reference* for the Pocket PC published by Thomson Medical Economics. Sometimes I need more information on a drug and then look it up on DrDrugs, another Skyscape product with more complete monographs on each drug. One of our unit patients presents with mild weakness on the right side but with pre-existing dementia; I pull out my PDA and go through the mini mental status exam using free Pocket Stroke software, soon to be released by MedicalPocketPC. This enables me to quickly check off the patient's responses and come up with a score indicating a significant level of dementia.

After rounds with the stroke team all morning, I head off to a noon lunch conference. There I meet one of our newly appointed faculty members. I would like his contact info, and he hasn't had his business cards printed yet. He pulls out his Palm Vx and "beams" me his business card. Fortunately, with the new Pocket PC 2002 operating system, infrared beaming of contact info, databases and other files (though not applications) is built-in and seamless between Palms and Pocket PCs.

I then head off to my continuity clinic where once a week I see my own set of patients in an outpatient setting. Again, out

WEB RESOURCES

AUDIOVOX, www.audiovox.com

CASIO, www.casio.com/redirect/product.cfm?product=4146

COMPAQ, www.compaq.com/products/handhelds/pocketpc/

HANDBASE, www.ddhsoftware.com/handbase.html

HEWLETT-PACKARD, www.hp.com/jornada/

MAZINGO, www.mazingo.net

MEDICALPOCKET PC, www.medicalpocketpc.com

MOBILEPDR, www.pdr.net

NEC, www.neccomp.com/MobilePro/

PALM, www.palm.com

POCKETPC, www.pocketpc.com

PRINTPOCKETCE, www.fieldsoftware.com

SKYSCAPE, www.skyscape.com

STOWAWAY, www.thinkoutside.com

TOSHIBA, www.pda.toshiba.com/

comes the Jornada, this time with my Stowaway portable keyboard. I set up shop in no time and begin seeing my patients. I keep all my patient notes in my PDA. I have created a customized, secure database using HanDBase to track all my important patient information including demographics, diagnosis, examination and treatments. With the aid of the nearly full-sized keyboard, I'm able to quickly type in my findings. At the end of each visit, I run down the hall to the one laser printer in the department equipped with an infrared port. Using PrintPocketCE I beam my patient notes to the printer and provide these pages for inclusion in the patient charts. I've found that having access to my patients' data in my PDA is useful when patients are admitted during off hours and clinic charts are unavailable.

Though it has been a long day already, I still have a half-hour wait before grand rounds. I sink into an auditorium chair and begin answering my e-mail. Files from the inbox and outbox on my PDA synchronize automatically with Microsoft Outlook on my desktop computer at home for rapid transmission over the Internet. Answering several e-mail messages with short answers is easy with the natural handwriting recognition built into the Pocket PC operating system. For Palm users the Graffiti input system (upper case letters formed with a single stroke) and an on-screen keyboard are available and work with all software.

On my walk home I plug in headphones and listen to MP3s—digital audio files stored on my PDA—using the free Windows Media Player software bundled with my Pocket PC. With my medical software and patient data taking up less then 20MB of memory, I still have nearly 300MB available for music—equivalent to about five compact discs. On reaching my apartment I plant my Jornada into its cradle and let it, along with me, rest for the evening. ■

Nilay Shah, MD, is a senior resident in neurology at Mt. Sinai Medical Center in New York City. He is also a co-founder of MedicalPocketPC.com, a free Internet resource for healthcare professionals.

PDA PRIMER

Handheld computers, also termed PDAs (personal digital assistants), have evolved in just a few years from essentially a digital calendar and address-phone book to the "communicators" like the just-released Handspring Treo 270 and Nokia 9290, both of which combine the functionality of a laptop computer and a cell phone.

TYPES OF PDAS

Current PDAs fall into two predominant categories: Pocket PCs (those running the Windows CE operating system) and Palm Operating System (OS) devices. The Windows CE devices tend to be larger, have more memory and a brighter screen, and drain their batteries daily if frequently used. Palm OS is much more efficient, requiring little power and allowing for far superior battery life. The screens are generally less impressive than the Windows CE devices. However, the Palm OS devices themselves are slimmer and lighter.

Both types of devices store applications and data in RAM rather than on a hard drive. This enables rapid access and is less cumbersome. The obvious limitation is the amount of memory available. Some devices offer an expansion slot or digital media slot for extra memory. All of these devices come with an infrared (IR) port for local communications. Some newer devices incorporate Bluetooth communications, a wireless protocol utilizing 2.4GHz frequency band that will allow data transfer without requiring cables or line-of-sight connection.

If you need to present, edit, or review images, movies, or other graphics files, the Windows CE devices are head and shoulders above the Palm OS devices. Also, if most of the demands you place on a handheld include MS Excel spreadsheets, Word files or other Office documents, the CE units are probably a better choice. Applications are available to synchronize the Palm OS devices with your MS Office programs, but the native Windows environment that the CE units have still seems to work better.

The Windows CE devices also allow you to run PowerPoint slide shows or make other types of presentations directly from the PDA. Also available are wireless modems, dictation features, and expandable memory up to 5GB or greater.

CHOOSING A PDA

For a review of some of the features to be considered when choosing a Palm OS PDA, see the complete article at www.neurosurgery.org/aans/bulletinwinter01-02/computerease.html. The "Handhelds" section of the CNET Web site (www.cnet.com) is a resource for additional comparative information. ■

WEB SITE 101
YOUR PRACTICE ON THE WEB BY MANDA J. SEAVER

D oes your practice maintain a Web site? Chances are the answer is no, but you probably are considering one. Most practices—60 percent—do not have a Web site, according to a 2001 survey by the American Medical Association, but as using the Internet for e-mail, research, online purchases and more becomes commonplace, initiating and maintaining a Web presence for your practice not only is a patient expectation, it can benefit your practice in several ways.

Informational to Interactive

In its simplest form, a medical practice Web site might be thought of as an online brochure about your practice. Such a site might contain physicians' names and photos, credentials, areas of expertise, the practice location and map, business hours, contact information, and practice philosophy or mission. It might also list the types of insurance accepted by the practice and state whether or not new patients are being accepted. With just this basic site, and with its Web address (URL) publicized on your business card, letterhead and other marketing materials, patients and referring physicians will be able to locate your practice online and will always have access to the most current information about it.

A slightly more sophisticated site might include educational information regarding the disorders you routinely treat, as well as links to patient resources on other sites such as www.neurosurgery.org and www.spineuniverse.com. Forms that new patients need to complete might be posted as PDF files that patients can print out at home, fill out, then bring to the first appointment. However, as more information is included on the site, a plan and budget for regularly updating it needs to be in place.

A basic informational site can evolve into an interactive link between patients and the practice. Incorporating e-mail into the site within the guidelines set forth in the Health Insurance Portability and Accountability Act of 1996 (HIPAA) is a logical addition (see "E-mail Communication With Patients" in this issue). Not only do 54 percent of patients say they would switch to a doctor who offered e-mail communication, but the added benefit can augment their satisfaction. "Web based physician-patient communications systems can increase patients' perception that they are spending more time with the doctor without the doctor actually spending more time with patients," stated Robert B. Elson, MD, in *Group Practice Journal.*

Other interactive options might include forms that patients can complete and submit online; appointment scheduling; a system for processing routine prescription refill requests; reporting of normal test results; reimbursable consultations with patients; and even patient access to billing and medical records.

If you're not ready for a major investment of time and money, but do want to choose from a range of services, a good starting point might be Medem.

Medem Offers a Lot for a Little

Medem (www.medem.com), a company founded by medical societies, also is an AANS partner. Among the Medem offerings are a customizable practice Web site; Secure Messaging and, new in 2002, Online Consultation, both of which promise compliance with proposed HIPAA regulations; and a library of clinical content. The service allows for initial set-up of an informational practice site, with the opportunity to update information or to include or delete interactive services as the practice prefers.

There are no fees associated with Medem services, according to Susan Wolcott of Medem. Setup and service fees associated with Online Consultation (typically $2.50 per consultation) are the exception.

Anyone who has installed a new software application or configured a new e-mail account will be familiar with the set-up "wizard" used to develop a Medem site.

Before setting up a new site, registering using your AANS membership number is required. Then a series of interactive forms allows you to provide the information about you and your practice that you want your patients to see. You'll also be asked to create your URL (for example, www.drpatsmith.medem.com) and then choose additional services if you wish.

It's easy—perhaps too easy. One physician contacted for this article had constructed his site in such short order that he had neither thought to write down his URL (which is needed to publicize the site) nor his user ID and password (which are needed to update the site). If this scenario sounds familiar, go to www.yourpracticeonline.com and follow the instructions in the log-in form or contact Medem by phone at (877) 926-3336 or by e-mail at info@medem.com to obtain your site's vital information.

Medem is only one service provider of the many available. Whether a basic informational Web site or a fully interactive site is desired, finding a provider that fits the scope of your needs and your budget (including regular site updates) is key to the site benefiting your practice and your patients—and not just increasing the workload for you and your staff. ∎

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

DOCTOR TO DOCTOR
INTERNET-BASED CONSULTATIONS BENEFIT NEURO-SURGEONS AROUND THE WORLD BY GREGORY D. FOLTZ, MD

Most neurosurgeons recognize the value of the commonplace consultation based on imaging studies and a written clinical history. In the past, consultations were rendered in person, by mail or by phone; today they can be accomplished through the Internet.

Neurosurgery: Ideally Suited for Image-Based Telemedicine
Internet technology has enabled international communication and collaboration between the estimated 23,000 neurosurgeons practicing in the world today, up to one third of whom operate in regions of limited medical and educational resources, with many practicing in isolated regions without access to neurosurgical colleagues, up-to-date textbooks, or journals. While "telemedicine" will never replace face-to-face patient consultations, neurosurgery is ideally suited for image-based telemedicine because most interventions are based on radiographic confirmation of clinical findings.

The Doctor to Doctor Web site at www.doctortodoctor.org is a multilingual online consultation and educational resource featuring image-based case discussion forums, real-time online chat room discussions, and a curated database of submitted neurosurgical cases searchable by keyword or author. It was designed to simulate international interaction through the traditional grand rounds model of neurosurgical education, integrating clinical and radiological data, neurosurgical expertise and experience, and cultural and social aspects of treatment recommendations based on local conditions. Launched in 2001 by nonprofit Neurosurgery International, which sponsors and maintains it, the site is fast, free, easy-to-use, and readily accessible on low bandwidth Internet in most regions that support operative neurosurgery.

How It Works
Access to Doctor to Doctor is restricted to neurosurgeons, who are required to register before they can access the site; credentials are confirmed within 24 hours by e-mail. Once registered, a neurosurgeon can submit a case, including commentary and digital images in JPEG format; detailed instructions on the site are available to registered users. A senior editor of an editorial board consisting of neurosurgeons, neuroradiologists and neuropathologists from the United States and the United Kingdom reviews each case within 24 hours and edits comments as necessary before the case is posted.

To ensure patient privacy all identifying information is removed from the case or codified, and the patient's written consent is obtained; proof of informed consent must be e-mailed to Doctor to Doctor before the case is posted. In addition, the site is encrypted and protected by a firewall.

The online chat room is a popular resource for "real-time" case discussions. Every Friday a case discussion is translated into Russian and English. Regular participants include neurosurgeons from the United States, United Kingdom, Azerbaijan, Russia and India.

Equipment Basics
Equipment for Doctor to Doctor includes a personal computer, telephone modem, and digital desktop scanner or camera, but participants have scanned images at local Internet cafes and travel agencies. The Web site itself utilizes Oracle 8i database management software, which permits a bulletin board format while accommodating text and high-resolution images. All case images and discussions are archived and searchable by user-defined keywords. The site is translated into Chinese and Russian and mirrored on dual processor Linux-based servers in the United States, Egypt and China to increase download speeds and accessibility.

How It's Being Used
In the nine months following the site's inception, neurosurgeons from Albania, Azerbaijan, Bosnia-Herzegovina, China, India, Pakistan, Russia, Ukraine, the United Kingdom, and the United States posted 200 neurosurgical cases, of which 66 percent were intracranial, and 34 percent spinal. Average time for case review and reply was less than 24 hours. The majority of cases (82 percent) involved the diagnosis and treatment of brain and spinal cord tumors, while pediatric cases constituted 28 percent of all cases discussed. Case discussions resulted in a significant change in diagnosis or management in 23 percent of cases. Neuroradiologists and neuropathologists consulted on 15 percent and 4 percent of cases respectively, and neurosurgery trainees from 26 different countries accessed the site 947 times for educational purposes. Because magnetic resonance imaging is still new in many developing countries, radiographic interpretation of MRI scans was and remains a frequent request.

Several benefits of Doctor to Doctor have emerged beyond the immediate benefit of improved patient care. The site has fostered continued education; partnerships with regional peers; research and fellowship opportunities for neurosurgeons; collaborative research efforts; and documentation of patient follow-up and outcome assessment in developing regions. The site shows how a Web-based collaboration provides an opportunity for all neurosurgeons to communicate across geographic and political boundaries, creating a more equitable distribution of knowledge and a foundation for improved neurosurgical care around the world. ∎

Gregory D. Foltz, MD, a resident at the Department of Neurological Surgery, University of Washington, is a founder of Doctor to Doctor and Neurosurgery International. He coauthored a study on the Doctor to Doctor Web site that was presented at the AANS Annual Meeting in April 2002.

Superlative 70th!

"Speaking Out" Elucidates Science, Forges Connections Among Neurosurgeons at 70th AANS Annual Meeting

By Manda J. Seaver

In its 70th year the Annual Meeting of the American Association of Neurological Surgeons showed itself once again as a preeminent neurosurgical event. From April 6 to 11, 2002, Chicago's McCormick Place on the shores of Lake Michigan was the primary site where the elements of science, practical information, technology, entertainment, and conviviality coalesced into "AANS: Speaking Out."

The event attracted the second highest attendance in AANS history: 6, 619 participants—2,971 of them medical registrants. In addition, 209 companies set up shop in the exhibit hall, with more than 3,000 of their staff available to display and demonstrate the latest in medical technology and information at 669 exhibits.

"AANS: Speaking Out" focused on legal and ethical issues facing neurosurgeons, issues surrounding difficult and controversial cerebrovascular cases and state-of-the-art transplantation, and introduced a special program on the neurosurgeon's role in mass casualty situations. The "Speaking Out" theme developed out of the belief that "neurosurgeons can and should lead national debates about contemporary issues affecting our specialty and practice," as Stan Pelofsky, MD, the 71st AANS president, and William A. Friedman, MD, the 2002 Annual Meeting chair, noted in their welcome.

As always, the big attraction was the bedrock scientific program, spearheaded by Scientific Program Chair Ralph G. Dacey, Jr., MD. This year's program featured 38 practical clinics, 77 breakfast seminars, 125 oral presentations in 10 sessions and 540 poster presentations.

Media Helps Get Neurosurgery Message to the Public

The meeting also attracted the media. Eight media releases focusing on scientific topics of interest to the general public piqued the
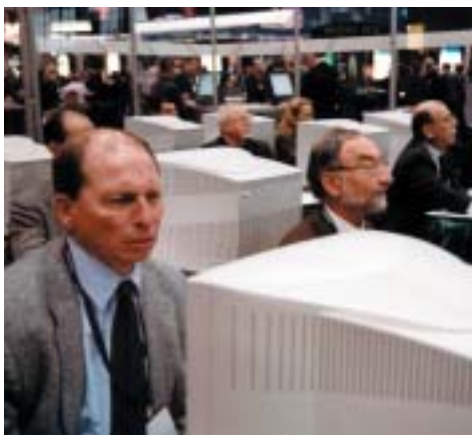

Chicago's Field Museum provided a grand backdrop for the Opening Reception, one of the many social events complementary to the scientific program. AANS members and guests enjoyed food and good spirits in a "world market" atmosphere.

media's interest in AANS and the neuroscience research presented at the meeting. The media responded with stories published in trade publications and newspapers and on national television, radio stations, online publications and newswires across the United States and overseas. On-site reporters experienced an in-depth look at the full scope of neurosurgery through face-to-face interviews with AANS members, as well as opportunities to hear presentations from world-renowned neurosurgeons and researchers. Notable media covering the meeting included: the Washington Post; Reuter's Health; London Free Press, London Telegraph; International Herald Tribune (Paris); Globe and Mail (Toronto); American Medical News; BBC Online; Boston Globe and Muzi Lateline News (China).

In addition, nearly 50 AANS members participated in free, one-minute hometown radio interview sessions offered during the meeting. Each member's neurosurgical message was broadcast to two or three radio stations in each of his or her own hometowns. The interviews were broadcast on over 1,300 radio stations nationwide, with a combined total audience of over 22.3 million listeners, helping to hone the public's favorable impression of neurosurgery.

Several AANS members additionally participated in media training sessions held during the meeting. The sessions covered the basics of how to become effective advocates by developing and staying with a message and learning what attire and movements add to and detract from the message. Guided by an experienced media consultant, participants were able to practice interviewing on camera to prepare for "speaking out" on behalf of neurosurgery.

The Technology Pavilion in the AANS Resource Center proved a popular destination. Hour-long classes showed members basic to advanced skills for Internet use, building or enhancing a Web site on Medem.com, and creating PowerPoint presentations. A demonstration of Procedure .com, part of the new AANS/Medikey compliance program, rounded out the offerings.

AWARDS AND HONORS

Cushing Medalist Edward R. Laws, Jr., MD, was honored with the AANS' highest award, the Cushing Medal. "Each of us who has enjoyed life and work as a neurosurgeon enjoys common sources of sustenance: teachers, colleagues, and families…I've been incredibly blessed," he said.

The Cushing Medalist is recommended by the AANS Awards Committee from nominations submitted by voting AANS members and selected by the Board of Directors for displaying unparalleled and distinguished service to the entire field of neurosurgery. Dr. Laws was noted as the only neurosurgeon to achieve the "neurosurgical triumvirate," having served during his career as the president of the AANS, Congress of Neurosurgical Societies, and World Federation of Neurosurgical Societies.

During the Annual Meeting, Dr. Laws also delivered the Hunt-Wilson Lecture.

2002 Distinguished Service Awardee John A. Jane, MD, PhD, (right) said, "It makes me proud to be a member of this organization," upon receiving the award from 71st AANS President Stan Pelofsky. Dr. Pelofsky cited Dr. Jane's 10 years as editor of the *AANS Journal* as one of the many accomplishments of an "amazing man." He explained, "One earns this weighty distinction through years of exceptional and dedicated service to our association. [Dr. Jane] has gone beyond the highest expectations of service to the organization." The Distinguished Service Awardee is chosen by the AANS president with consent of the Executive Committee.

Volker K.H. Sonntag, MD, presented the 2002 Humanitarian Award to Edgar M. Housepian, MD, (left) in grateful acknowledgement of Dr. Housepian's extensive volunteer work with the Armenian Academy of Science and particularly for his relief efforts following the Armenian earthquake of 1988. "Neurosurgeons all are generally self-motivated," said Dr. Housepian. "They say they're going to get it done, and they do. For this reason I never have considered any of my extracurricular activities as warranting special recognition." The Humanitarian Award is presented to an AANS member for activities outside the art and science of neurosurgery that bring great benefit to mankind. Nominations for the 2003 award are being accepted by Oct. 15, 2002. Contact Adriane Lewis at AANS for information.

Two Firsts Add Luster to a Stellar Event

Two additions to the 2002 Annual Meeting further enhanced the scope of the event.

For the first time the AANS invited an international neurosurgical society to take part in the meeting. The Société de Neurochirurgie de Langue Française participated in a symposium on April 5 that initiated the scientific program. Chaired by Gail L. Rosseau, MD, who moderated the educational event with Yves Keravel, SNLF president, the program featured 15 speakers and was attended by 80 AANS and SNLF members. Dr. Keravel remarked that the symposium was a good example of collaboration and looked forward to future fruitful collaboration between the AANS and SNLF.

On the entertainment front, world-renowned performer Ray Charles took the stage in a benefit concert for the Neurosurgery Research and Education Foundation. More than the audience of nearly 1,500 benefited from the consummate entertainer's performance: research and education were the real winners, with concert proceeds helping to fund NREF fellowships.

AANS 71st President Sets the Tone for the Meeting

Dr. Pelofsky used the platform of his presidential address to speak out against alienation and promote the importance of interconnectivity and human values in the neurosurgical profession. In an artful presentation titled "The Voice of Art of the Art of Medicine," he drew upon the paintings and writings of Vincent Van Gogh and other visual artists, as well as darkly humorous film clips from Woody Allen's "Hannah and Her Sisters," to illustrate his theme.

Van Gogh, Dr. Pelofsky noted, was not a privileged man in the common sense, but in an uncommon sense that has to do with expressing an honest human voice. He said, "Van Gogh's paintings and letters reveal a complexity and spiritual depth that I will metaphorically call the 'Voice of Art.' " He urged those who enjoy the privilege of being neurosurgeons to call upon that voice in their lives and in their work as a base for being able to fully connect with patients. "Science and technology are meaningless unless placed within a human context," he said.

While being a neurosurgeon may be a privilege, working daily with the risk to patients of injury or death can be lonely, while the same technology that allows neurosurgeons to help patients can serve also as a tool of alienation, he said. Dr. Pelofsky used Woody Allen's character, Mickey Sachs, to portray both the portrait of a person who is afraid of facing death but who must face it when he is told he has a brain tumor, and the unnecessary anxiety that Sachs experiences as a result of his doctor's unwitting insensitivity.

Sachs eventually finds that he is in fact physically healthy, but he experiences difficulty returning to his old life. "If he returned to the life he had before without reordering his values, he would succeed in distracting himself for a while, but he wouldn't find the meaning he so desperately needs," explained Dr. Pelofsky. "By the same token, if we left this scientific meeting thinking only of science and technology and not of our own humanity, we would fail our patients and our profession."

Raina Pelofsky introduced her husband with an original videotape that documented his life and career from his early years in Brooklyn to his current practice with Neuroscience Specialists, of which he is president, and Oklahoma Spine Hospital, the planning and construction of which he has been a driving force.

World Events Influence Two Special Speakers

Recent world events, particularly the tragedy of Sept. 11, influenced the subject matter of two special speakers. In keeping with the meeting's "Speaking Out" theme Cushing Orator Benazir Bhutto and Richard C. Schneider Lecturer Patrick J. Kelly, MD, brought their individual perspectives, based on their respective personal histories, to discussion of a post-Sept. 11 world.

Benazir Bhutto: Cushing Orator Speaks Out on the Need for Leadership in a Dangerous World. A standing ovation greeted Benazir Bhutto, former prime minister of Pakistan, at the 70th AANS Annual Meeting in Chicago. The Cushing Orator spoke to a full house at McCormick Place's Arie Crown Theater, directly addressing the Sept. 11 tragedy from her unique perspective.

"Don't let the horror [of terrorism] distract you from being a beacon of freedom," she implored. She stressed that terrorism is a corruption of Islam, which she said is committed to tolerance and equality: "It grieves me that included in the list of innocent victims of the perfidy of Sept. 11 is the image of Islam across the world."

She provided a historical context for terrorism, including her personal experiences on the front lines of democracy not only during her terms in office, but as the daughter of Zulfikar Ali Bhutto, who led Pakistan in the 1970s and was hanged in a military coups. "The world walked away from Afghanistan, sowing the seeds of tragedy through the Taliban," she said.

Elected Pakistan's prime minister twice, in 1988 and 1993, Bhutto—educated in the West at Harvard and Oxford—was both the first woman and youngest chief executive to lead a Muslim nation. Bhutto said that while she was in office she closed sham schools and universities that cloaked the Taliban agenda, restored law and order, and had terrorists on the run such that "they were unable to plan a single act of internal terrorism during my two terms as prime minister of Pakistan."

She offered some alternatives to the path of destruction upon which the world finds itself today, as well as a glimpse of the fundamental principles and values that sustain her in her quest for freedoms for Pakistan. A key initiative is building bridges of understanding, in the broad sense between East and West and developing and developed nations, and closer to home for her, between Pakistan and India, which were on the brink of war over Kashmir as she spoke. Her dream, she said, is to create a free-trade zone between Pakistan and India, as well as other countries in Southeast Asia.

In a brief interview following her talk she discussed some of her ideas in more detail. She stated that global politics is interwoven with healthcare and noted that the healthcare delivery system in Pakistan is very poor at the moment. To offer people choices she said she would like to deregulate Pakistan's hospitals to open up the private sector and establish private health insurance. She advocated measures that could improve the country's healthcare delivery, including reallocating some military dollars to healthcare and encouraging some of the many Pakistani doctors to return to Pakistan.

Benazir Bhutto addressed guests at the Chicago Cultural Center during a luncheon in her honor following the Cushing Oration at McCormick Place. The Cushing Orator traditionally is a contemporary philosopher whose accomplishments are of significant interest to the neurosurgical community.

Echoing Dr. Pelofsky's premise that a base of strong values and a meaningful connection to humanity are essential to success as a person and as a professional, Benazir Bhutto credited her faith, the ethics reinforced by the convent school she attended, and the lessons she learned from her father—among them that life offers one chance to lead, to serve humanity dedicated to a larger objective—as anchors in her own life. And she acknowledged passion—"all consuming passion that drives one to go beyond the call of duty, to go the extra mile"—as a force that further sustains her in trying times.

Dr. Kelly's Vietnam Tale Hits Home for Many. Richard C. Schneider Lecturer Patrick J. Kelly, MD, was inspired by the Sept. 11 tragedy and ensuing war on terrorism to try on his Vietnam-era uniform. When his daughter, catching him in the act, asked about his campaign ribbons, he found himself trying to explain the concept of war. The rest is history: "Vietnam 1968-1969: A Place and Year Like No Other," is his personal memoir of one year that defined the rest of his life. "There has never been any other time in my life that I felt I did as much good as I did that year," he said.

In a presentation intercut with the sites and sounds of the time—helicopter rotors beating the air; Buffalo Springfield's "For What It's Worth"; a young Vietnamese girl, clothes burned from her body, running down a road—and interwoven with history, Dr. Kelly pulled no punches in recounting his Vietnam experience. "Sin is the cause of all wars, but war itself is amoral; I never understood this until Vietnam," he said.

With a telling quote attributed to Hippocrates visible on the screen—He who wishes to be a surgeon should go to war—Dr. Kelly said, "I wanted to be a surgeon … I volunteered for Vietnam." He joined as a general medical officer and was stationed at National Support Activity Station Hospital in Da Nang, where he said there were 14,000 operations in the year he was there, and 95 percent of those who arrived alive survived.

Of his first day in triage he remembered, "I had never felt so useless in my entire life, but uselessness motivates you to do better and teaches you humility and to be willing to learn." He said his residency after Vietnam seemed tame in comparison.

He summarized: "We as neurosurgeons do what we've been trained to do: We take care of [patients] to the best of our ability and we are stronger for our experience as neurosurgeons and as people."

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

NREF Gains Support

Donor Generosity Promotes the Discoveries of Tomorrow

NREF hosted its annual Donor Reception during the AANS 70th Annual Meeting at the Sheraton Chicago Hotel and Towers on April 9. Major donors in 2001 were recognized by Julian Hoff, MD, chair of the NREF Executive Council. Pictured are Dr. and Mrs. Merwyn Bagan with (center) Robert L. Dodd, MD, Frank Z. Bagan Research Fellow.

Events held in conjunction with the AANS Annual Meeting in April 2002 advanced the cause of the Neurosurgery Research and Education Foundation. Fundraising might be thought of as the first step in promoting neurosurgical research and education; the fellowships that are awarded as a result of donors' generosity provide the impetus for the discoveries of tomorrow.

A terrific crowd turned out for the NREF Benefit Concert on April 8, featuring Ray Charles and His Orchestra. Thanks to those who attended the concert, as well as those who generously sponsored the event: Neuroscience Specialists, Northwestern Memorial Hospital-Department of Neurological Surgery, and Chicago Institute of Neurosurgery and Neuroresearch/Rush University Medical Center.

The Young Neurosurgeons Committee hosted a successful Fourth Annual Silent Auction during the AANS Annual Meeting in Chicago. This year's event included more items up for bid, a greater variety of items, and more competitive bidding, right down to the closing bell. The Young Neurosurgeons Committee appreciates the participation by bidders and the exhibitors' generous contributions of items for auction.

Proceeds of both events benefit NREF fellowships.

2002 Fellowship Awardees Announced

The 2002 fellowship awardees are: Jeffrey P. Blount, MD, DePuy AcroMed Young Clinician Investigator, University of Alabama-Birmingham; Nicholas Boulis, MD, Young Clinician Investigator, The Cleveland Clinic; Robert L. Dodd, MD, Frank Z. Bagan Research Fellow, Stanford University; Sheila K. Singh, MD, American Brain Tumor Association Research Fellow, University of Toronto; Ira Garonzik, MD, NREF-Medtronic Research Fellow, Johns Hopkins Hospital; Cornelia S. von Koch, MD, Research Fellow, University of California, San Francisco; and Charles C. Matouk, MD, Research Fellow, University of Toronto.

NREF expresses its deep appreciation to Dr. and Mrs. Merwyn Bagan, the American Brain Tumor Association, DePuy AcroMed, and Medtronic Neurological for the funding of their respective fellowships.

2003 Fellowship Applications Available

As of July 1, Research Fellowship and Young Clinician Investigator Award applications are available at www.neurosurgery.org/aans/research/fellowships. Deadline for application submission is Nov. 15, 2002.

Questions can be directed to Laurie Singer, development coordinator, at (847) 378-0526 or lms@aans.org. ■

Bobbi Burgstone is the NREF development manager.

ADVANCING THE SPECIALTY: 2002 DONORS

These donors have made generous contributions to the Foundation's 2001-2002 Campaign during the first quarter of 2002. Their philanthropic efforts enhance science and patient care:

Gifts of $50,000 to $75,000
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Gifts of $1,000 to $2,499
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The HIPAA Train Is Here

Getting On Board Now May Benefit Your Practice

JOHN A. KUSSKE, MD

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) train is about to leave the station. Will you be on board when HIPAA's mandate for "administrative simplification" begins to take effect Oct. 16, 2002?

The primary purpose of HIPAA is to enhance health insurance accessibility for people changing jobs or leaving the workforce. However, HIPAA contains a section entitled "Administrative Simplification" whose provisions are designed to promote the transmission of confidential healthcare data electronically. Congress, in return for legislating significant dollar savings for health plans and providers by simplifying claims transactions, has imposed a string of privacy and security requirements to assure that electronically transmitted data will remain confidential and secure. To view the HIPAA law and regulations, visit www.aspe.hhs.gov/admnsimp/index.htm.

What Are the HIPAA Administrative Simplification Provisions?

There are four key provisions:

1. National standards for electronic transmission of healthcare data.
2. Unique health identifiers for providers, employers, health plans, and individuals.
3. Security standards to protect electronically maintained health information.
4. Privacy regulations to protect individual health information.

HIPAA Administrative Simplification provisions cover all neurosurgeons who store patient records on a computer or use electronic means to transmit any of the following: health claims, remittance or payment advice, claim status inquiries, eligibility requirements, enrollment and disenrollment, referral certification and authorization, coordination of benefits, or health plan premium payments. The rules take a wide view of "electronic means." Included are all types of media including tapes, CDs, diskettes, and all types of transmission—leased or dial-up phone lines, Internet, extranet, virtual and private networks. The regulations may require significant changes to your billing and data collection systems.

First Stop: Compliance With Electronic Health Transactions and Code Sets, Oct. 16, 2002

The original compliance date for Electronic Health Transactions and Code Sets was set at Oct. 16, 2002 (45 Code of Federal Regulations, parts 160, 162). But with the enactment of the Administrative Simplification Compliance Act (ASCA) on Dec. 27, 2001, the compliance date was extended one year to Oct. 16, 2003. In order to qualify for this extension, all neurosurgeons who use electronic means to transmit healthcare data, must submit a compliance plan to the Centers for Medicare and Medicaid Services (CMS) by Oct. 15, 2002.

The sample compliance plan can be obtained from CMS at http://cms.hhs.gov/hipaa/hipaa2/TCSFormInstructions.asp. You can submit the form electronically or on paper, and you will receive a confirmation number from CMS after the forms are submitted. The plan must include:

- reasons additional time is needed;
- budget, schedule, and plan to achieve compliance;
- whether an outside vendor will be used; and
- a time frame for testing which begins no later than April 16, 2003.

If you are a HIPAA-covered neurosurgeon and do not submit a compliance plan, you must be compliant with the HIPAA Electronic Healthcare Transactions and Code Sets by Oct. 16, 2002.

Transaction Standards. The ANSI ASC X12N standard has been adopted for all transactions except pharmacy. ANSI (American National Standards Institute) ASC (Accredited Standards Committee) is an organization that accredits various standards-setting committees. HIPAA prescribes that the standards mandated under it are to be developed by ANSI accredited bodies. An ANSI accredited group that defines Electronic Data Interchange (EDI) standards for many American industries, including healthcare insurance, is X12. Most of the electronic transaction standards mandated under HIPAA are X12 standards and the most current release format is X12N. For ASC X12N transaction standards, implementation guides and data dictionary, an excellent overview is available at www.wpc-edi.com.

Code Sets Adopted. The HIPAA Standards Rule also specifies the code sets that are to be used for HIPAA-compliant transactions. Code sets that are of interest to neurosurgeons include:

- Diagnosis codes (ICD-9-CM) as updated and distributed by HHS.
- Combination of procedure codes HCPCS and CPT-4 for physicians and other health-related services.
- All local codes will be eliminated.

Benefits to Your Practice. If you submit claims electronically, or plan to do so in the future, you will need to implement the new national transaction standards. While converting to the new stan-

dards will incur an initial cost, once they are implemented you will be able to submit a claim, in the standard format, to all health plans—including Medicare and Medicaid—and the plan will be required to accept it. Plans will no longer be able to customize the claims submission to suit their specific needs. Therefore, the initial implementation costs for neurosurgeons will be offset over time by savings through significantly increased administrative efficiencies and reduced hassles. For the first time, all health plans and other payers will be required to accept the same single form without any additional or local variations. Instead of more than 400 variations in claim forms there will only be a few, one for each type of transaction. There will be uniform code sets that cannot be changed by local practice. This should mean substantial savings for neurosurgeons who will not have to supervise a staff devoted to properly filling out multiple varieties of claim forms and attachments. According to one estimate based on a survey of 20 medical groups, the average potential benefit was $7,200 per physician. How these savings were allocated can be obtained from Stephen Lazarus, Ph.D., HIPAA Tips for Physician Office at www.hipaainfo.net/ahima040601.htm.

Physicians who implement HIPAA now will be able to reap the most benefit from the new rules on uniform transactions. You will show your patients that you are genuinely concerned about the safety and confidentiality of their medical records, and you will be prepared for the many health plans that will begin to require neurosurgeons to submit claims electronically. For example, beginning Oct. 16, 2003, all Medicare claims must be submitted electronically in HIPAA-compliant transactions unless no method is available to do so or the provider (including physicians) making the claim has fewer than 10 full-time equivalent employees.

According to the AMA, over 30 percent of claims are rejected nationally. Of that number between 30 percent and 40 percent are rejected for incorrect or missing ID. Half are never resubmitted. The new HIPAA rules allow real time eligibility determination including IDs. Under HIPAA you will be able to submit electronic eligibility inquiries directly to the health plan to promptly determine eligibility. Each plan will have to provide this service and there will be no more long waits while your staff tries to check eligibility! The rules also will allow electronic documentation of claims receipts so that the excuse "We never got it" won't be heard. Current estimates reveal that manual referrals cost primary care providers about $40 each and specialists about $20. Going online with standard 278 (Referral Certification and Authorization) will result in large savings.

What Should Neurosurgeons Do Now? A number of consultants state that you should begin by evaluating the savings you could realize from utilizing electronic transactions. If you decide to use electronic transactions, there are two options to develop the capacity for small- or medium-sized practices. Your practice management software vendor should be able to handle the standard transactions. If you use a clearinghouse you may want to use their supplied capability to turn your data into HIPAA-compliant transmittals.

Identify the transactions you currently send and receive electronically. Recall that HIPAA does not require you to use electronic transactions now or ever—neurosurgeons retain the full right to conduct transactions by phone, fax and U.S. mail—it is up to you (although some health plans, including Medicare, are requiring this). Identify your "trading partners"—the organizations with which you share "protected health information" electronically for purposes of conducting transactions—such as health plans, clearinghouses, labs and software companies and any other vendors used to prepare or submit such transactions—and determine if they are HIPAA compliant. Be alert when purchasing new software or hardware, and be aware that many details of the HIPAA transaction rules and other regulations have yet to be established.

Second Stop: Compliance With the Privacy Rule, April 14, 2003
Once you are a HIPAA-covered entity, the Privacy Rule, which takes effect April 14, 2003, will apply to all "protected health information" whether in paper or electronic form. Thought should be given now to developing a privacy policy for your practice that includes notice to the patient of their privacy rights and reviews your privacy practices. Read more about the rule at www.hhs.gov/ocr/hipaa/finalreg.html and in an upcoming issue of the *Bulletin.*

Details for the other Administrative Simplification provisions are yet to come. For the present, the unique health identifiers have been put aside, and the security standards have yet to be written. ∎

John A. Kusske, MD, is chair of the Department of Neurological Surgery at the University of California-Irvine, chair of the AANS Professional Liability Committee, and a member of the AANS/CNS Washington Committee.

IMPORTANT DATES FOR HIPAA IMPLEMENTATION

Aug. 21, 1996 HIPAA becomes law.

Dec. 28, 2000 Final rule "Standards for Privacy of Individually Identifiable Health Information" (Privacy Rule) is published in the Federal Register.

Dec. 27, 2001 The Administrative Simplification Compliance Act becomes law, providing a means by which the administrative simplification provisions of HIPAA may be extended by one year.

April 14, 2001 Effective date for the Privacy Rule.

March 27, 2002 Health and Human Services proposes changes to the Privacy Rule (www.hhs.gov/ocr/hipaa/propmods.txt).

March 29, 2002 CMS issues a model compliance plan for filing a one-year extension to comply with the rule governing electronic health care transactions (www.cms.hhs.gov/hipaa/hipaa2/ASCAForm.asp).

Oct. 15, 2002 Date by which a compliance plan for a one-year extension must be postmarked or filed electronically.

Oct. 16, 2002 Original compliance date for Electronic Health Transactions and Code Sets.

April 14, 2003 Compliance date for the Privacy Rule.

Oct. 16, 2003 Compliance date for Electronic Health Transactions and Code Sets for those with a compliance plan filed by Oct. 15, 2002.

Questions and Answers

Follow-Up: Professing Professional Conduct

Professing Professional Conduct: AANS Raises the Bar for Expert Testimony" (cover story, Spring 2002), which describes the development and current status of the AANS professional conduct program, raised some interesting questions. Those questions, and their answers, are as follows:

Q The article stated that "all members of the Professional Conduct Committee and many members of the AANS' Board of Directors have served as plaintiffs' experts in the past in appropriate cases." Appropriate cases? How is that decided? It would appear that the fox is in the hen house; no responsible neurosurgeon should be testifying as a plaintiff's expert against another neurosurgeon. How can the AANS have a policy favoring neither the plaintiffs nor defendants?

A This question, perhaps reflecting the potency of the professional liability crisis in some states, suggests that any AANS member who testifies as a plaintiff's expert is in some fashion disloyal to the profession. The logical extension of this position would be that the AANS should adopt a policy making it unethical to testify as a plaintiff's expert against a fellow neurosurgeon.

Both the American Medical Association and the AANS have adopted resolutions

recognizing that, since our court system requires the presentation of expert testimony in professional liability cases, physicians have an obligation to make themselves available to testify in matters pertaining to medical practice. Those resolutions are not simply noble platitudes; they reflect the law. No one will deny that occasionally patients are injured as the result of surgical negligence (although certainly not as often as the plaintiffs' bar would assert). In those rare cases of negligence, it is "appropriate" for a physician to step forward and so advise the court. However, the resolutions of both the AMA and AANS go on to state that, when doing so, physicians have an absolute ethical obligation to testify competently and impartially, and that, if they fail to do so, they should be subject to disciplinary procedures.

Our courts will not tolerate any system or set of rules that is designed to prevent or discourage physicians from testifying as experts for injured patients. Any such system or set of rules would be viewed by the courts as constituting a conspiracy by physicians to protect themselves collectively, to the detriment of patients who may be injured by physicians. In the past, several medical societies adopted rules declaring it to be unethical for a member to testify against another member in a medical malpractice suit, and all of those rules were thrown out by the courts as being illegal.

The AANS professional conduct program goes beyond AMA mandates, and is the only active program in organized medicine which regularly disciplines physicians for testifying unprofessionally in medical malpractice cases. The majority of physi-

cians disciplined through the AANS program are individuals who testified inappropriately as plaintiffs' experts. If, as suggested in the above question, the AANS tried to prohibit testimony of a neurosurgeon as a plaintiff's expert against another neurosurgeon, that not only would be illegal, but almost certainly would result in the elimination of the professional conduct program.

Q Is the AANS professional conduct program designed to deal only with cases in which neurosurgeons violate the Expert Witness Guidelines while testifying as experts in litigation?

A No. The program is designed to deal with complaints of unprofessional conduct of any nature brought by one member of the AANS against another member. These can include cases of false advertising, unscrupulous business dealings, substance abuse, failure to retain qualifications necessary to maintain AANS membership, or any other instances that might constitute unprofessional conduct. The complaining member has the responsibility of assembling the evidence necessary to support the charges and presenting it to the Professional Conduct Committee.

Q How does one initiate a charge of unprofessional conduct?

A The AANS Bylaws provide in Article II that a charge of unprofessional conduct should be raised by identifying the neurosurgeon being charged and the general nature of the allegations in a letter sent to the Secretary of the AANS at the headquarters office. All such letters are then forwarded to the General Counsel. The General Counsel is responsible for advising the respondent of the charges being brought, advising both parties of the procedural guidelines to be followed, and forwarding supporting documentation of both sides to the Professional Conduct Committee. After reviewing all documen-

tation, the committee will determine whether a *prima facie* case of unprofessional conduct has been laid out, warranting a hearing. If the committee believes that a hearing is called for, one will be scheduled in conjunction with the next annual meeting of either the AANS or CNS.

If the Professional Conduct Committee concludes, after reviewing filings of both sides, that a *prima facie* case of unprofessional conduct has not been established and that the charges should be dismissed, it will so advise both parties. At that point the complainant may still insist that a hearing be held, in which case one will be scheduled. However, if the ultimate result of that hearing is substantially the same as the committee's initial conclusion, the complainant will be responsible for all the actual costs incurred by the AANS in conducting that hearing. The purpose of this provision is to minimize the likelihood of holding hearings on charges that are essentially baseless or which, even if proven, would not warrant sanctioning a respondent.

Q Can a complaint of unprofessional conduct be filed against a neurosurgeon based on his or her testimony in a case that is still in litigation, or on appeal?

A No. The committee will not hear any complaint based on testimony in ongoing litigation, including cases on appeal; considerable law suggests that hearing a complaint based on ongoing litigation could be considered to be an improper intimidation of trial witnesses, which would be severely frowned upon by the courts. Only after a case has been completed, either through settlement or through trial and exhaustion of all post-trial procedures, should a complaint based on testimony given in that case be filed with the AANS Professional Conduct Committee. A complaint based on ongoing litigation will be returned to the complainant as premature.

Q Is the AANS professional conduct program considered a statutory peer review program, thereby prohibiting subsequent discovery in civil litigation of the Professional Conduct Committee's records or the details of the charges proven?

A No. The AANS professional conduct program is not a statutory peer review program, and the committee's records and the details of any charges proven are subject to discovery by subpoena in civil litigation.

Q Are disciplinary actions taken by the AANS pursuant to its professional conduct program reported to the National Practitioner Databank (www.npdb-hipdb .com/npdb.html)?

A In accordance with the databank's rules and regulations, expulsions and suspensions from AANS membership are to be reported; reports of censures are not. In the past, one neurosurgeon expelled from the AANS for giving unprofessional testimony as a plaintiff's expert objected to the filing of that report with the databank. After requesting legal briefs from both sides, the Secretary of Health and Human Services concluded that it was not only appropriate, but required, for professional associations such as the AANS to report suspensions and expulsions of members based on unprofessional testimony as expert witnesses in litigation. ∎

Russell M. Pelton, a partner in the Chicago law firm of Ross & Hardies, is the AANS general counsel.

LETTERS

Letters to the editor are welcomed, as are comments and suggestions regarding the *Bulletin*. Send correspondence to bulletin@aans.org or to 5550 Meadowbrook Drive, Rolling Meadows, IL 60008. Letters are assumed to be for publication unless otherwise specified. Correspondence selected for publication may be edited for length, style and clarity.

The PLI Problem: Current Data

CSNS Survey Explores the Professional Liability Insurance Crisis in Neurosurgery

Professional liability insurance (PLI) premiums have been increasing at an alarming rate. As reported in the Fall 2001 issue of the *Bulletin,* the most obvious reason for increasing premiums is the increase in jury awards for medical malpractice claims. From 1996 to 1999 jury awards increased 76 percent, according to Jury Verdict Research. Between 1999 and 2000 the median medical malpractice award increased another 43 percent—reaching the $1 million mark in 2000, nearly doubling from the 1996 median award of $503,000.

The problem has continued to grow unabated, impacting not only physicians, but patient care. On June 12, 2002, the House Judiciary subcommittee on commercial and administrative law held a hearing to answer the question, "Does Limitless Litigation Restrict Access to Health Care?" Donald Palmisano, MD, president-elect of the American Medical Association, testified:

Emergency departments are losing staff and scaling back certain services such as trauma units. Many obstetrician-gynecologists and family physicians have stopped delivering babies, and some advanced and high-risk procedures (such as neurosurgery) are being postponed because surgeons cannot find or afford insurance.

How significantly has the PLI problem affected neurosurgery? The Council of State Neurosurgical Societies determined to explore the issue through a nationwide survey.

Survey Documents Significant 2000, 2001 PLI Problem

On Feb. 2, 2002, a single-page survey was faxed to U.S. neurosurgeons, with a total of 2,410 successfully sent. The survey requested data on annual premiums for 2000, 2001 and 2002 coverage information, PLI costs per operative case, insurer and insurance type, as well as general demographic information. Data was accrued over one month and was analyzed using the Kruskal-Wallis test, correlation analysis and ANOVA.

A total of 563 surveys were returned for a 23.3 percent response rate. There were respondents from 49 states and the overall number of respondents per state correlated with the population distribution in each state. Further validity of the survey's representative nature was obtained by analysis of the respondents' distribution in terms of practice type and location.

The results of the survey indicate that indeed there is a significant problem of increasing PLI premiums in neurosurgery. Although at the present time the PLI crisis is regionalized, affecting some states more than others, all of the states have been affected by significant increases in annual premiums.

Some important implications of the survey relate to the impact that PLI increases may have on the neurosurgical workforce. Almost 20 percent of the respondents indicated that they plan to retire as a result of PLI increases, and 6 percent are serious-

CHANGE IN NEUROSURGEONS' PLI COSTS, 2000-2001		
Action	**Frequency**	**Percent of Change**
Decrease	35	9.7
No change	67	18.6
Up to 50% increase	217	60.2
51% to 100% increase	27	7.5
Over 100% increase	14	3.8

NLDC Grooms Agents of Change

2nd Neurosurgical Leadership Development Conference, July 21-23

For the second year the Council of State Neurosurgical Societies presents the Neurosurgical Leadership Development Conference in Washington, D.C. This year the conference is slated for July 21-23 and features a practical practice management seminar for which CME credit is available, in addition to a multi-faceted advocacy training for practicing neurosurgeons that culminates in a visit to Capitol Hill.

"I urge you to attend this politically significant program whose goal it is to train individual neurosurgeons to become effective grassroots leaders," said David Jimenez, MD, chairman of the CSNS. "It is imperative that we continue to expand our influence on Capitol Hill as critical issues in medicine such as EMTALA, HIPAA and malpractice culminate in nothing less than crisis situations."

The program begins with a one-day practice management course (July 21) that focuses on practicing medicine in a regulatory environment. Topics such as coding and reimbursement, EMTALA, HIPAA, and Stark II are on the agenda. Faculty includes Samuel J. Hassenbusch, MD, PhD, John A. Kusske, MD, Gregory Przybylski, MD, and Art Votek, a consultant with Conomikes & Associates. Day two (July 22) focuses on grassroots advocacy training sessions and a review neurosurgery's key legislative issues in preparation congressional visits on July 23. Conference details are available at www.neurosurgery.org/csns/nldc.html.

ly considering doing so. Given the limited number of neurosurgeons entering the workforce, a retirement of 20 percent of practicing neurosurgeons will have a significant negative impact on the delivery of neurosurgical care.

The data also indicates that the median cost of PLI premiums per operative case rose by 21 percent from 2000 to 2001, to a median of $200 per case. However, for those in the 95th percentile the increases ranged from $553 in 2000 to $800 in 2001. Given the low reimbursement rate by some carriers (TriCare, Medicaid and Medicare),

some neurosurgeons are at risk of actually losing money when performing certain procedures.

2002 PLI Data Needed

This survey is the first attempt at obtaining data on neurosurgical professional liability insurance problem. So far the data obtained was for 2000 and 2001. Given the fact that the survey was sent at the very beginning of 2002, the premium data for many neurosurgeons was not available. It is critical that we obtain further data as the problem appears to have worsened from 2001 to 2002. There-

fore, neurosurgeons are requested to complete the survey at www.neurosurgery .org/csns with 2002 PLI information, and fax it directly to CSNS. This is vital information as it will help organized neurosurgery develop a strategic plan in order to appropriately address this significant problem for practicing neurosurgeons. ■

David F. Jimenez, MD, is chair of the Council of State Neurosurgical Societies.

Complete the survey at www.neurosurgery.org /csns with 2002 professional liability insurance information and fax it directly to CSNS.

Thoughts and Travels

LYAL G. LEIBROCK, MD, FACS

I recently traveled to Colorado for an informative exchange of ideas and information with neurosurgeons there. After serving as the guest speaker at the Colorado State Neurosurgical Society Meeting in Denver on March 13, I was able to spend the following day visiting the University of Colorado neurosurgery program with its new chairman, Issam Awad, MD, and the Colorado Neurological Institute with Gary Vander Ark, MD, and John McVicker, MD.

First I had the privilege of touring the new campus of the University of Colorado Health Science Center being built on the site of the decommissioned Fitzsimons Army Medical Center in the eastern part of Denver. This is a truly remarkable effort by the University of Colorado to construct a front-line health science center that features innovative clinical service, research, and educational efforts. I also was able to review the university's impressive computer-generated virtual anatomy facility, the new ICU, and the combined neurology and neurosurgery ward facilities.

Then I was able to visit the Colorado Neurological Institute, which has a major impact on the delivery of neurosurgical care for the front-range area of Colorado

plus some of the western part of Nebraska. The CNI has 10 neurosurgeons and more than 20 neurologists, three or four neuro-otologists, and an innovative and very well-maintained microsurgical neuro-otology laboratory facility. The institute features an ongoing research effort regarding cellular injury and death that I was able to visit under the capable guidance of Dr. Vander Ark, who is a member of the AANS Board of Directors.

The CNI is a very well-organized, aggressive and expanding private practice group that enjoys positive and productive interrelationships with the university program. I think this is very important, as are the continuing efforts to involve the practice community in the educational, bench research and clinical research efforts of all neurosurgeons in training. In this regard, CNI is exemplary.

It is apparent that neurosurgery in Colorado, led by the Colorado State Neurosurgical Society—an exemplary model for all of the state and regional societies—is in a positive mode.

Attend the NLDC

I encourage as many neurosurgeons as possible to attend the Neurosurgical Leader-

ship Development Conference, July 21-23 in Washington, D.C., to gain skills as proponents of neurosurgery in your local and state communities. The reason for this is significant. First, a physician is not licensed by the federal government, but by a state. Second, a major issue facing us, the malpractice insurance crisis, can best be addressed through the desire of the population to deal with healthcare cost. State legislatures deal with healthcare cost and can be approached much more effectively than Congress. To be effective requires political activism by individuals in each state who work locally with their insurance commissioners, state societies and governing bodies to achieve some redress for our current crisis.

The NLDC was established to help you learn how to be effective representatives of neurosurgery, particularly at the local and state levels. My plea is that you will participate in this important activity, and I encourage every state and regional society to have representation at this important meeting. ■

Lyal G. Leibrock, MD, FACS, is immediate past president of the Council of State Neurosurgical Societies and chairman of neurosurgery at the University of Nebraska Medical Center.

Proteomics and Bioinformatics Are Born

Human Genome Project Spawns Technology Advancement

The Human Genome Project promises to provide us with a molecular fingerprint of an individual. Pursuit of this ultimate goal has been the impetus for additional benefit to science: advancement of technology that provides powerful tools used in the analysis of gene expression.

High-throughput or array technology is continually being refined, providing us with important descriptive information of disease processes through mRNA-based analyses of gene expression. However, it is becoming clear that gene-based analysis is not sufficient for complete understanding of the phenotypic expression at the molecular level. The field of proteomics, in which the protein structure and function are determined from the genetic blueprint, is the next frontier that may add substantially to our understanding and management of diseases. With the advancement in high-throughput technology, rigorous demands are being placed on the procurement of tissue and providing of homogeneous cell populations, a circumstance that has lead to the development of tools such as microarray technology and laser capture microdissection (LCM).

Microarray Technology

Microarray technology, also known as "genechip" technology, has been an area of great interest particularly in differential analysis of gene expression. It allows for rapid quantitative measurement of gene expression in a tissue sample that is of interest on a large scale. Its advantage over blot techniques is its high degree of automation, parallelism and resolution. This technology takes advantage of the highly selective binding of nucleic acid molecules to complementary sequences.

The chip is composed of large numbers of DNA probes repeated in each location of the array. The probes may include the genome of an entire organism (or a subset of interest) which then is deposited on a glass or other material surface. The use of robotics has automated this process and increased its efficiency and consistency. RNA derived from the tissue is then added to the surface of these chips and then binds to the complementary DNA probes on the chip. The result is a highly parallel sorting process, and the binding can be quantified using a laser to detect the fluorescence-labeled RNA sample. Although the principle is not new, the high degree of automation and parallelism afforded by this technique has revolutionized biomedical discovery. A detailed review of DNA microarray gene expression analysis technology, including its applications to neurological disorders and its limitations, is available in Steven A. Greenberg's article published in *Neurology* (2001).

> **These powerful technological tools … are being used to study brain tumors, neuropathies and myopathies.**

Laser Capture Microdissection

LCM, a relatively new technology developed by the National Institutes of Health, has been commercially available through a collaborative effort with Arcturus Engineering Inc. LCM is a method for procuring cells from specific microscopic regions of tissue sections. Its advantage is the reproducibility and accuracy of selecting specific cells from complex tissue samples for subsequent analysis. Cells of interest are identified by microscopy and targeted. A variety of immunohistochemical stains can be used to identify cell populations of interest and thin sections of tissue can be fixed and embedded in paraffin or frozen. At the push of a button, a laser beam focally activates a special transfer film which bonds specifically to the cells targeted. The transfer film with the bonded cells is then lifted and separated from the unwanted cells. This process provides a homogeneous sample of cells that can then be used to procure DNA, RNA or protein.

There has been an explosion in the use of these powerful technological tools in basic science research, and for neurological disorders they are being used to study brain tumors, neuropathies and myopathies. Differential gene expression analysis between diseased and normal tissue is providing insight into the molecular pathogenesis of these neurological disorders. In addition to molecular phenotyping (expression profiling), other applications for neurological disorders include functional genomics (gene function in gene regulatory networks), pharmacogenomics (drug development and prediction of efficacy and toxicity) and developmental biology (gene function in the control of development).

As the performance and technical issues of LCM and expression arrays are being refined, large amounts of data are being generated, giving birth to the field of bioinformatics—finding solutions to biological problems using computer science methodology such as knowledge representation, data storage and retrieval and database management. As the sequencing of the human genome nears completion, advances in proteomics and bioinformatics may ultimately provide a wealth of information to elucidate the pathophysiology of neurological diseases and facilitate the development of effective therapies. ∎

Prithvi Narayan, MD, is a resident at Emory University School of Medicine, Atlanta, Ga.

NEWS.ORG

Section News

AANS/CNS Section on Tumors *(Prepared by Isabelle M. Germano, MD)* James T. Rutka, MD, president, led an outstanding Tumor Section program and Brain Tumor Satellite Symposium at the AANS Annual Meeting in Chicago this past April. The AANS Scientific Program, organized by William C. Broaddus, MD, focused on tumor invasion. The program featured three state-of-the-art lectures: Susan Hockfield, PhD, on CNS tumor cell response to the microcellular environment; Helen Fillmore, PhD, on glioma cell invasion and signaling; and Mark Rosenblum, MD, the founder of the AANS/CNS Section on Tumors, on current and future anti-invasion strategies for patients with malignant gliomas. The Tumor Section's Scientific Session, moderated by Michael McDermott, MD, and Ron Warnick, MD, included six outstanding papers on different aspects of clinical and molecular biology of brain tumors. The section presented five awards—the Farber Award, the National Brain Tumor Foundation Translational Research Award, the Preuss Award, the Young Investigator Award, and the Mahaley Award—and hosted a reception for young neurosurgeons and new members.

The Fifth Biennial Tumor Satellite Symposium, held April 11-12, 2002, in Chicago and organized by Nalin Gupta, MD, was attended by nearly 200 participants. Forty-five scientific papers and 53 posters were accepted to the symposium, which opened with a session on viral gene therapy for brain tumors, presented the advantages and disadvantages of three types of virus vectors currently used for brain tumor therapy. This was followed by a review of biologic targeting of radiation therapy by Ralph R. Weichselbaum, MD. Free papers, poster and exhibit viewing followed in the afternoon.

The keynote lecture delivered by Arturo Alvarez-Buylla enlightened the audience with an outstanding update on the role of stem cell research for primary brain tumors. The second day covered two evolving and controversial topics of neuro-oncology: management of low grade gliomas and treatment of skull base chondrosarchomas and chordomas. The speakers placed special emphasis on the role of surgical techniques and radiation therapy.

AANS News

New AANS Membership Directory on CD-ROM AANS members continue to report that having a simple and accurate means of contacting their peers is important to them, with a membership directory ranking high in value. The new *AANS Membership Directory,* available Sept. 1, 2002, and sponsored by an educational grant from Aesculap, includes members' favorite features, but its new CD-ROM format makes possible many enhancements designed to ensure the directory as an indispensable member benefit in the future. In the CD-ROM format the directory is easy to store and portable, with the option of running the directory from the CD or installing it onto a computer. The digital format makes possible a variety of convenient search features, as well as direct links that allow members to e-mail other members or reach a page on the AANS Web site with a mouse click, and expanded membership listings. It also provides the ability to create "preferred lists" and export them to a personal address book, which then can be synchronized with a handheld computer. To add even more value to the package, the new *Buyer's Guide* will feature listings of neurosurgery companies and resources alphabetically and by product category.

Favorite features of previous directories will remain available in the CD-ROM version: full residency program listings, a complete alphabetical listing of AANS members that is suitable for printing, comprehensive listings of AANS/CNS section members and officers, current information on AANS leadership, and a complete guide to the AANS.

AANS-MediKey Plan Helps Members Stay Compliant AANS introduced a new member benefit during the AANS Annual Meeting in April 2002: the AANS-MediKey Plan. The plan combines two components essential for complete protection of a practice: an effective billing compliance program and comprehensive billing errors and omissions (E&O) insur-

NEWS.ORG

AANS.org: New Look, Same Functionality

If you've gone to www.aans.org lately to order a package of new patient education brochures from the Online Marketplace (www.neurosurgery.org/marketpl), check a *Bulletin* article (www.neurosurgery.org/aans/bulletin), or register online for an AANS meeting or course (www.neurosurgery.org/aans/meetings), you've probably noticed the AANS Web site's new look: it's "gone green" —that's AANS green. The "facelift" is intended to extend AANS' corporate image as expressed through print items such as letterhead to the association's "cyber-self." Behind the updated facade, you'll find the in-depth, up-to-date information about AANS programs, products and services that you've come to expect.

ance designed to protect a practice against allegations of fraud and abuse. Also, ProcedureInfo.com, offered through the AANS-MediKey Plan, provides up-to-date coding information online. Among its features are continuous updating of CPT, HCPCS Level II and ICD-9 codes; Medicare fee information and CCI bundling edits organized by code; and timely bulletins regarding changes that affect Medicare billing and reimbursement. Details of the AANS-MediKey Plan, including discounted cost for members, are available from AANS at (888) 566-AANS or www.neurosurgery.org/aans/membership/benefits.

AANS Tracks Members' CME To maintain membership in the AANS, all Active and Active Provisional members are required to document continuing medical education hours. At least 60 neurosurgical credit hours must be documented within the current continuing medical education cycle, Jan. 1,

2002, through Dec. 31, 2004. As a service for its members, AANS keeps track of CME and currently mails personalized transcripts to AANS Active and Active Provisional members annually to aid them in monitoring their progress and adding applicable credits to their CME file. The AANS automatically records all members' CME hours for AANS annual meetings and professional development courses as well as programs jointly sponsored by the AANS (see meetings listing below).

To add to your record Neurosurgical Category I credit hours that are not obtained from the programs listed, fax certificate(s) of attendance to (847) 378-0638 or contact Kim Loebe in Member Services at kal@aans.org. In the future, the Online CME Transcript Service that is currently under development is expected to expedite the CME tracking process. With this new service all AANS members will be able to print out their transcript at any time throughout the year.

2002 AANS JOINTLY SPONSORED MEETINGS

CME credit is available for the following 2002 meetings. CME information always is available online at www.neurosurgery.org/aans/meetings.

- Richard Lende Winter Neurosugery Conference
Feb. 2-7, 2002
Snowbird, Utah

- AANS/CNS Section on Cerebrovascular Surgery and the American Society of Interventional and Therapeutic Neuroradiology Annual Meeting
Feb. 3-6, 2002
Addison (Dallas), Texas

- AANS/CNS Section on Disorders of the Spine & Peripheral Nerves
Feb. 27-March 2, 2002
Orlando, Fla.

- Southern Neurosurgical Society
March 6-9, 2002
Savannah, Ga.

- Interurban Neurosurgical Society
Annual Scientific Meeting
March 8, 2002
Chicago, Ill.

- AANS/CNS Section on Pain
April 4-5, 2002
Chicago, Ill.

- AANS/CNS Section on Tumors Satellite Symposium
April 11-12, 2002
Chicago, Ill.

- Neurosurgical Society of America with the SBNS 55th Annual Meeting
April 21-24, 2002
Kiawah Island, S.C.

- Society of Neurological Surgeons Annual Meeting
May 12-14, 2002
Toronto, Canada

- Rocky Mountain Neurosurgical Society, Inc., 37th Annual Meeting
June 15-19, 2002
Santa Ana Pueblo, N.M.

- Interventional Neuroradiology Peer Review Conference 15th Annual Meeting
July 30-Aug. 3, 2002
Jackson Hole, Wyo.

- Western Neurosurgical Society
Oct. 12-15, 2002
British Columbia, Canada

- American Academy of Neurological Surgery
Oct. 16-19, 2002
Scottsdale, Ariz.

- AANS/CNS Section on Pediatric Neurological Surgery Annual Meeting
Dec. 4-7, 2002
Phoenix, Ariz.

AANS-Thieme Publications Partnership As of July 1, 2002, Thieme Medical Publishers is the official publisher of the AANS. Through the AANS-Thieme partnership, AANS experts in neurosurgery combine with Thieme's publishing expertise and worldwide marketing network, delivering the AANS line of neurosurgical publications to a wider audience. AANS members are eligible for a 10 percent discount on titles jointly published by Thieme and AANS. All AANS titles are included in the neurosurgery section of www.thieme.com, and can be ordered directly from Thieme or through AANS at (888) 566-AANS or the AANS Online Marketplace at www.aans.org. The titles published by AANS and now available from Thieme include: *Surgical Management of Lower Back Pain* by Daniel K. Resnick, MD and Regis Haid, MD; *Biomechanics of Spine Stabilization* by Edward C. Benzel, MD; *Treatment of Carotid Disease* by Joshua B. Bederson, MD, and Stanley Tuhrim, MD; and *Intracranial Endoscopic Neurosurgery* by David F. Jimenez, MD. The first AANS book co-published by Thieme—*Intensive Care in Neurosurgery,* edited by Brian T. Andrews, MD—is scheduled for release in August 2002. Among the future titles are *Vertebroplasty & Kyphoplasty* by Daniel K. Resnick, MD; *Controversies in Neurological Surgery* by Michael T. Lawton, MD; and *Acoustic Neuromas* by John G. Golfinos, MD. ∎

State Society News

Compiled by William E. Bingaman, MD, and Ann Warbel, RN

The New England Neurosurgical Society held its winter meeting March 1, 2002, at the Killington Grand Resort in Killington, Vt. A number of ideas were discussed regarding how to improve the value of meetings to encourage greater attendance. The society recommended a slate of candidates for AANS president-elect, vice-president, secretary, member of the Board of Directors, and member of the Nominating Committee. Joseph Phillips, MD, PhD, presented his experience with implanted stimulators for chronic occipital head pain. He is part of a prospective randomized-blinded multicenter trial of this therapy. To refer patients with chronic occipital head pain for consideration in this trial, contact him at (603) 448-0447. At the meeting on June 7 at the Colonial Inn in Concord, Mass., A. John Popp, MD, was the William Sweet lecturer. For the Sept. 13 meeting at the Newport Marriott in Newport, R.I., a free CPT coding course for correct coding of spinal instrumentation is planned for the morning session with the scientific session to be conducted in the afternoon and the Ben Whitcomb lecture to be held at the evening dinner.

The Georgia Neurosurgical Society held its spring meeting at the Cloister resort on Sea Island, Ga. during the Memorial Day holiday, May 24-26, 2002. The honored guest was L. Dade Lunsford, MD, the Lars Leksell Professor and chairman of the Department of Neurological Surgery at the University of Pittsburgh. An additional guest, Ted Turner, addressed the attendees on Sunday morning. For information, contact the GNS Executive Director Tara Morrison at (770) 613-0932.

The Illinois Neurosurgical Society met at the conclusion of the Interurban Neurosurgical Society meeting March 8, 2002, at the University Club in Chicago. Stephen L. Ondra, MD, presented several items for discussion and action and a new delegate was selected for the CSNS meeting. There was discussion on two important topics: political involvement at the state level concerning the appropriate use of monies obtained through the tobacco settlement; and formation of an ad hoc committee to detail the potential options and solutions available to Illinois neurosurgeons concerning the impending malpractice premium crisis.

Simple Solutions

Two Books Tackle a Broken Healthcare System

Crossing the Quality Chasm: A New Health System for the 21st Century by the Institute of Medicine Quality of Health Care in America Committee. National Academy Press, 2001, 337 pp.

Oxymorons: The Myth of a U.S. Health Care System by J.D. Kleinke. Jossey-Bass, 2001, 232 pp.

The fact that this issue of the *Bulletin* is focused on information technology in practice management demands a review of the Institute of Medicine's new book *Crossing The Quality Chasm: A New Health System for the 21st Century;* a review of this book demands the balance of also considering J.D. Kleinke's new work entitled *Oxymorons: The Myth of a U.S. Health Care System.* So let me tell you about both.

Ten Simple Rules

The Institute of Medicine appointed the Committee on Quality of Health Care in America in 1998 to identify strategies for achieving a substantial improvement in the quality of healthcare delivered to Americans. The committee's first report, *To Err Is Human: Building a Safer Health System*, was released in 1999 and focused on patient safety. *Crossing the Quality Chasm*, the committee's second and final report, focuses on designing a new system that will innovate and improve healthcare.

The report's premise is that healthcare should be supported by systems that are carefully and consciously designed to produce care that is safe, effective, patient centered, timely, efficient and equitable. The authors came up with the new 10 commandments which they call 10 Simple Rules for the 21st Century Health Care System:

- RULE 1: Care is based on continuous healing relationships.

- RULE 2: Care is customized according to patient needs and values.

- RULE 3: The patient is the source of control.

- RULE 4: Knowledge is shared and information flows freely.

- RULE 5: Decision making is evidence-based.

- RULE 6: Safety is a system property.

- RULE 7: Transparency is necessary.

- RULE 8: Needs are anticipated.

- RULE 9: Waste is continuously decreased.

- RULE 10: Cooperation among clinicians is a priority.

The authors acknowledge that these changes will be enormously expensive, but that the changes are both possible and necessary. Taking advantage of new information technologies will be the key catalyst to moving us beyond where we are today. They have recommendations that will facilitate their plan for all healthcare organizations, providers, purchasers, Congress and federal agencies.

Everyone involved in healthcare must read this book. We do work in a flawed system and steps must be taken to improve healthcare in America.

Three Simple Facts

In *Oxymorons* J. D. Kleinke admits that he was wrong about managed care in his 1998 book, *Bleeding Edge: The Business of Health Care in the New Century*. He now acknowledges that managed care organizations were asked to do a job that they could not do.

This book is based on three simple, intractable facts about the financing and delivery of healthcare. First, chaos is the rule in the delivery of healthcare. Second, behavioral inertia among the layers of healthcare administration wrapped around the actual delivery of medicine is the inevitable consequence of fact number one. And third, experts are prone to repeat the same mistakes, which he calls the Twaddle Echo Factor. Physician risk-contracting will not fix everything. Consumerism will not fix everything. "Leadership" will not fix everything. The Internet will not fix everything.

Kleinke is much more cynical than the Committee on The Quality of Health Care in America about fixing our system of healthcare. He has a wonderful chapter entitled "The Chaos Theory and Medicine."

I liked Kleinke's book because he, too, presents a "simple" plan. His solution is not to introduce more bureaucracy but to introduce a simpler plan of taxation. He would have us throw out our system of employer-based health insurance and replace it with individually mandated and purchased insurance. He thinks that we can save 18 cents of every healthcare dollar by simplifying administration and then covering every citizen with a very basic benefit package.

It seems as though most people agree that our present system is broken. We all need to be reading books such as these two so that we can become part of the solution rather than continuing to be part of the problem. ∎

Gary Vander Ark, MD, is a senior partner of Rocky Mountain Neurosurgical Alliance, Englewood, Colo., and past president of the Colorado Medical Society. He is the recipient of the 2001 AANS Humanitarian Award.

AANS Board Holds Election

Committees Carry Forward AANS Objectives

AANS leadership convened at two important meetings held in conjunction with the 70th AANS Annual Meeting.

Board Meeting Highlights

The AANS Board of Directors met on Friday, April 5. Of the several motions discussed and approved, the highlights are:

■ **No Increase for AANS Membership Dues in 2003.** The board voted that there would not be a cost-of-living dues increase for 2003. Invoicing for 2003 membership dues will begin in September and will be at the same rate as 2002. The board and treasurer will consider future dues changes annually.

■ **AANS-Only Membership Directory**—The board voted to independently publish a directory of AANS members beginning in fiscal year 2003 (beginning July 1). The directory will be released in September 2002 on CD-ROM and will accessible from computer workstations as well as printable from the CD. For details on how the new AANS membership directory will benefit you, see AANS News in this issue.

New AANS Leadership Takes Office

The annual business meeting on Monday, April 8, featured the changing of the guard. The AANS Board of Directors recognized outgoing board members and elected board members for the 2002-2003 term. Roberto C. Heros, MD, president; A. John Popp, president-elect; Fremont P. Wirth, MD, vice-president; Robert A. Ratcheson, MD, secretary; Arthur L. Day, MD, treasurer; and Stan Pelofsky, past president comprise the new Executive Committee. A complete listing of the new Board of Directors appears on page 48.

AANS Committees Meet

More than 100 committees and organizations related to neurosurgery met in conjunction with the AANS Annual Meeting. A current listing of AANS committees, including their chairpersons, members, and links to each person's contact information, is available at www.neurosurgery.org/aans/about/committees.asp. ■

EVENTS

**Neurosurgical Leadership
Development Conference**
July 19-23, 2002
Washington, D.C.
(888) 566-2267

**11th World Congress of
Psychophysiology**
July 29-Aug. 3, 2002
Montreal, Quebec Canada
+44 (0) 1865 843691

10th World Congress on Pain
Aug. 17-22, 2002
San Diego, Calif.
(206) 547-6409
www.halcyon.com/iasp/
02cong.html

**World Federation of
Neuroradiological Societies**
Aug. 18-23, 2002
Paris, France
(630) 574-0220
www.meetings@asnr.org

Techniques in Epilepsy Surgery
Aug. 23-25, 2002
Cleveland, Ohio
(216) 445-3449

**4th National Conference on
Shaken Baby Syndrome**
Sept. 12-15, 2002
Salt Lake City, Utah
(801) 627-3399
www.dontshake.com

**Detroit Neurosurgery Symposium:
The Renaissance of Neurosurgery**
Sept. 13-14, 2002
Detroit, Mich.
(313) 745-4523

**9th International Child Neurology
Congress**
Sept. 20-25, 2002
Beijing, P.R. China
86 010 66176 450

**American Clinical Neurophysiology
Society Annual Meeting**
Sept. 20-21, 2002
New Orleans, La.
www.acns.org

**Congress of Neurological Surgeons
Annual Meeting**
Sept. 21-26, 2002
Philadelphia, Pa.
(877) 517-1267
www.neurosurgery.org/
cns/meetings

**American College of Radiology
Annual Meeting**
Sept. 28-Oct. 2, 2002
Miami, Fla.
(800) 227-5463

**Peripheral Markers of Blood Brain
Barrier Failure**
Oct. 4-6, 2002
Cleveland, Ohio
(216) 445-3449

**American College of Surgeons
Annual Meeting**
Oct. 6-11, 2002
San Francisco, Calif.
(312) 202-5244
www.facs.org

Child Neurology Society Conference
Oct. 9-12, 2002
Washington, D.C.
(651) 486-9447
cns@tc.umn.edu

**American Association of Electro-
diagnostic Medicine Annual Meeting**
Oct. 9-13, 2002
Toronto, Ontario Canada
www.aaem.net/
registration_brochure_online.htm

**Neurosurgical Society of America
Interim Meeting**
Oct. 10-12, 2002
Indianapolis, Ind.
joseph.piepmeier@yale.edu

**American Society of
Anesthesiologists Annual Meeting**
Oct. 11-16, 2002
Orlando, Fla.
(847) 881-2570
www.asahq.org

**American Neurological Association
127th Annual Meeting**
Oct. 13-16, 2002
New York, N.Y.
www.aneuroa.org/annual.html

**Korean Neurosurgical Society
Annual Meeting**
Oct. 16-19, 2002
Seoul, Korea
www.wfns.org/
principal_conferences.html

**European Federation of Neurological
Societies Congress**
Oct. 26-30, 2002
Vienna, Austria
efns-head@magnet.at

**30th Latin-American Congress
of Neurosurgery**
Oct. 26-31, 2002
Lima, Peru
www.30clan.galeon.com

**International Society for Pediatric
Neurosurgery Annual Meeting**
Oct. 27-31, 2002
Kyoto, Japan
81 (3) 3433 1111
www.ispn.org

**Research Updates in Neurobiology
for Neurosurgeons/RUNN Course**
Oct. 27-Nov. 3, 2002
Woods Hole, Mass.
www.societyns.org

North American Spine Society
Oct. 29-Nov. 2, 2002
Montreal, Quebec, Canada
(708) 588-8088

Society for Neuroscience
Nov. 2-7, 2002
Orlando, Fla.
www.sfn.org

**Association of U.S. Military Surgeons
Annual Meeting**
Nov. 10-15, 2002
Louisville, Ky.
www.meetings@amsus.org

**12th International Symposium on
Brain Tissue Injury (Brain Edema)**
Nov. 10-13, 2002
Hakone, Japan
81 (3) 3263-1261
square.umin.ac.jp/edema

**7th International Congress of
Parkinson's Disease and
Movement Disorders**
Nov. 10-14, 2002
Fontainebleau, Fla.
(414) 276-2145
www.movementdisorders.org

**American Board of Neurological
Surgery Meeting**
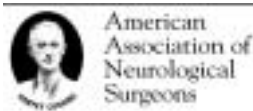Nov. 12-15, 2002
Houston, Texas
(713) 790-6015
www.abns.org

For a frequently updated, comprehensive listing, go to www.neurosurgery.org/calendar

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2002 Education and Practice Management Course Schedule

● **Beyond Residency: The Real World**
Oct. 26, 2002 . . . . .Chicago, Ill.

● **Innovations in Spinal Fixation: An Advanced Course**
July 27-28, 2002 . . . . .Memphis, Tenn.

● **Managing Coding & Reimbursement Challenges in Neurosurgery**
Aug. 23-24, 2002 . . . . .Boston, Mass.
Sept. 6-7, 2002 . . . . .Chicago, Ill.
Nov. 15-16, 2002 . . . . .Washington, D.C.

● **Neurosurgical Practice Management:
Managing Your Practice by the Numbers**
Sept. 8, 2002 . . . . .Chicago, Ill.

● **Neurosurgical Review by Case Management:
Oral Board Preparation**
Nov. 10-12, 2002 . . . . .Houston, Texas

● **Advanced Endoscopic Surgical Procedures**
Jan. 31-Feb. 1, 2003 . . . . .Memphis, Tenn.

For more information or to register call (888) 566-AANS or visit
www.neurosurgery.org/aans/meetings/epm/epmcourses.html.

AANS ANSWERS | THOMAS A. MARSHALL

More Than a Business

Service and Value Are Integral to the Ultimate Product

After a recent meeting of association CEO's, I shared a cab back to the airport with a marketing manager for a large pharmaceutical company. We were speaking of doing business in a world that is reeling from the effects of Enron, recession, terrorism and the threat of military conflicts across the globe.

As he ticked off all the problems his corporation faced, and how the management was nearly paralyzed at the prospect of their anticipated head-on collision with that 800-pound gorilla called "change," he stared out the cab's window and said "You're really lucky. You don't have to deal with it—you're not a business."

Once my jaw finally started moving again, all I could muster was: "Trust me. We're more than a business."

As a professional medical association, AANS members' needs must be addressed on a variety of levels: educational; informational; socioeconomic; legal; clinical training; social. But to identify those needs, fulfill them, and sustain viability, we are subject to the same laws of business and commerce as any for-profit corporation.

And like any business, we must produce an ultimate "product." Service is the product on which we stake our reputation—and the primary benchmark our members use to separate us from other marketplace alternatives. Like any business, the product we produce must be superior. The consumer-physician has the choice of services offered by a variety of other associations-businesses: state, regional, other national and international associations.

There is no difference between AANS and a for-profit business in another very tangible—some would say, brutal—reality: If the economic models of AANS are not kept in exact balance, there is no amount of good intentions or best wishes that will keep the AANS doors open. Once expenses are contained, revenue streams must be realized in order to provide the highest quality services to members. The real world marketplace, dues-paying neurosurgeons, decide with their wallets where they receive the best service for the dollars they spend.

Anyone who doubts how "business trends" affect AANS needs only look to the past 18 months. The downsizing of the AANS infrastructure and cost centers, and the resulting stabilization of its finances presaged what corporate America has gone through since. And that was just to "right the ship." All that has happened up until now at AANS was just repairing damage below the waterline and making us seaworthy.

Of course, ships aren't made to just float in a harbor. AANS must now venture out to fulfill its mission of providing neurosurgeons and their specialty with the best service and value for their dues. The goal of providing superior service is to provide what is best for the member neurosurgeon, not for organizational hubris.

Peter Drucker wrote: "People at the top of an organization are not paid for being clever. They're paid for being right." One ways to be right for AANS staff is to understand what makes us unique in the physician service business, while recognizing the business aspects of serving our physicians.

As a physician-centered organization, AANS must treat its members better than a corporation treats its customers. But when it comes to living up to standards of what you receive for your dues dollar, how to ensure the stability of the association of which you are part owner, and how to increase operating revenue to expand quality services and hold your dues down…we are much more than a business. ■

Thomas A. Marshall is the AANS executive director.