



# North American Neuromodulation Society

## NEWSLETTER

### President's Message

## Neuromodulation Has Come of Age



The theme of the 10th Annual Meeting of the North American Neuromodulation Society (NANS) was “Neuromodulation: Coming of Age.” Held at the Wynn Hotel in Las Vegas,

this exciting conference was attended by 447 neuromodulators, in addition to more than 200 industry representatives. This meeting demonstrated that, in fact, neuromodulation has come of age. All sessions were well attended; many of them had standing room only. The level of enthusiasm was perceptible.

Congratulations to Ali Rezai, MD, Program Chairman, on an extraordinary job of putting this meeting together. NANS was formed more than a decade ago by a handful of physicians sitting around a table with two industry representatives. In the last year our membership has grown to more than 500 individuals. There are now three major medical companies that manufacture devices that are implanted for the control of pain, movement disorders, and an ever-growing list of applications. Estimates vary on the penetration of these modalities in the patient population that could potentially benefit from them. These estimates are consistently small—less than 10%. Thus, 10 times the number of patients who are being considered for neuromodulation could potentially benefit from these modalities.

The two largest impediments to greater adoption of these technologies are ignorance and lack of insurance coverage. Ignorance can be overcome by creating greater awareness through a variety of means. Coverage obstacles present a greater challenge. The ever-expanding use of evidence-based medicine has created greater difficulties for authorization of neuromodulation because of the lack of class 1 data.

Smith and Pell (2003) wrote an article in the *British Medical Journal* titled “Parachute

### Parachute Use to Prevent Death and Major Trauma Related to Gravitational Challenge: Systematic Review of Randomised Controlled Trials

**Objectives:** To determine whether parachutes are effective in preventing major trauma related to gravitational challenge.

**Design:** Systematic review of randomised controlled trials.

**Data Sources:** Medline, Web of Science, Embase, and the Cochrane Library databases; appropriate internet sites and citation lists.

**Study Selection:** Studies showing the effects of using a parachute during free fall.

**Main Outcome Measure:** Death or major trauma, defined as an injury severity score >15.

**Results:** We were unable to identify any randomised controlled trials of parachute intervention.

**Conclusions:** As with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomised controlled trials. Advocates of evidence based medicine have criticised the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence based medicine organised and participated in a double blind, randomised, placebo controlled, crossover trial of the parachute.

**Source.** Smith, G. C., & Pell, J. P. (2003). Parachute use to prevent death and major trauma related to gravitational challenge: Systematic review of randomised controlled trials. *British Medical Journal*, 327, 1459–1461. Reprinted with permission.

Use to Prevent Death and Major Trauma Related to Gravitational Challenge: Systematic Review of Randomised Controlled Trials” (see abstract above). The article concludes that “as with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomised control trials. Advocates of evidence based medicine have criticised the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence based medicine organised and participated in a double blind, randomised, placebo controlled, crossover trial of the parachute.”

This is more than black humor. The reality is that it is nearly impossible, both ethically and methodologically, to perform a randomized, placebo-controlled crossover trial of an implantable device. One cannot subject patients to either sham implantations or implantations of placebo devices. Thus, the literature supporting the use of neuromodulatory procedures does not predominantly stand up to Cochrane criteria. Insurers are using this phenomenon to deny coverage using evidence-based criteria alone.

Currently, Richard B. North, MD, and Jane Ball Shipley are completing a comprehensive review of the literature regarding spinal cord stimulation for neuropathic pain. This review points out the strengths  
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4700 W. Lake Avenue  
Glenview, IL 60025

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Oren Sagher, MD

### NANS Newsletter

#### Editor in Chief

Jaimie M. Henderson, MD  
henderj@stanford.edu

### NANS Staff

#### Executive Director

Vanessa Mobley, CMP

#### Senior Manager,

#### Professional Relations

Sheila Lee

#### Associate Editor

Angela Grayson

#### Senior Graphic Designer

Sonya L. Jones

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## Members in the News

# NANS Member Receives Founders Award



**N**ANS is pleased to announce that Richard B. North, MD, one of our members and the Immediate Past President, received the prestigious Founders Award at the American Academy of Pain Medicine's 23rd Annual

Meeting in February. The Founders Award is presented to an individual for outstanding contributions to the science or practice of pain medicine. The award is given for continued contributions to the basic or clinical science of pain medicine or for demonstration of clinical excellence or innovation in the practice of pain medicine.

In 1977, 10 years after the first report on the use of spinal cord stimulation (SCS) to control pain, Dr. North, who was then a biomedical engineer fellow at Johns Hopkins University (JHU), published his first report on SCS. As a consultant to the JHU Space Development program, Dr. North helped apply satellite technology to implanted electronic devices. Dr. North's interests and abilities came together in his work with SCS—its optimization demands expertise in diverse fields.

In the ensuing 30 years, Dr. North has addressed many of SCS's challenges, confirming the advantages of multicontact, programmable systems and inventing a patient-interactive

computerized system to optimize stimulator adjustment and extend battery life. His work has facilitated technical studies of SCS, including comparisons of electrode types and configurations and of pulse-delivery methods.

After documenting the positive outcome of SCS in a series of patients with failed back surgery syndrome (FBSS), Dr. North reported in his seminal crossover randomized controlled trial (RCT) that SCS is more effective than

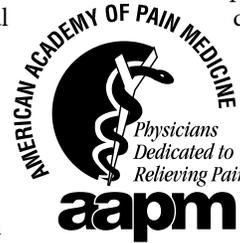
reoperation in patients with primary radicular pain. His conclusion that an SCS trial should precede reoperation in selected FBSS patients and his documentation of the cost-effectiveness of SCS have widened the applicability and availability of the treatment.

Dr. North has conducted RCTs to compare the technical and clinical results of SCS treatment choices

for primary radicular pain and for primary axial low back pain. He also devised a simple method that eliminated the persistent and costly problem of longitudinal electrode migration. His work on other surgical procedures for chronic pain, including the specificity of diagnostic nerve blocks, has been widely published.

As professor of neurosurgery, anesthesiology, and critical-care medicine at the Johns Hopkins University School of Medicine, Dr. North generously shares his experience and expertise by training physicians in multiple specialties. In the mid-1990s, he coordinated an important consensus conference on the neurosurgical management of pain, and he

is preparing to publish practice parameters for the use of SCS to treat neuropathic pain. **N**



◀ Richard B. North, MD, spoke at the AAPM Annual Meeting about his 30 years of experience in spinal cord stimulation.



▶ AAPM Immediate Past President Frederick Burgess, MD PhD, presented Dr. North with the AAPM Founders Award.

▼ NANS President Joshua Prager, MD MS, presented the Decade of Pain Lecture titled "Four Decades of Neuromodulation" at the AAPM Annual Meeting.

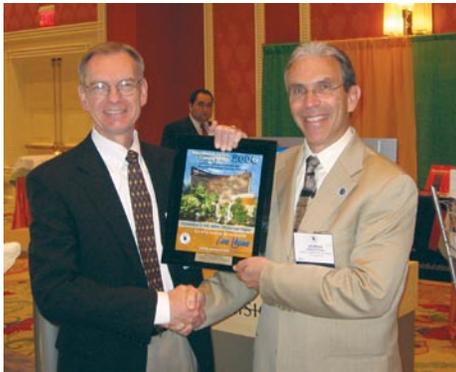




# 10th Annual Meeting

## Celebrates Neuromodulation Achievements

The 10th Annual Meeting of the North American Neuromodulation Society was held December 2006 at the spectacular Wynn Hotel on the Strip in Las Vegas. The theme of the meeting was “Neuromodulation: Coming of Age,” and this conference truly celebrated the remarkable achievements and continued growth in the field of neuromodulation.



*NANS President Joshua Prager, MD MS, thanks Ed Northrup of Advanced Bionics, A Boston Scientific Company, for Founding Corporate Member Support.*



*Best Oral Abstract Winner: Krishna Kumar, MBBS MS FRCS(C), University of Saskatchewan, Canada.*



*Best Poster Abstract Winners: Brenda Lemus, MD, Elan Biopharmaceuticals, San Diego, CA, and Lynn Webster, MD, Lifetree Pain, Salt Lake City, UT.*



*Innovative Abstract Award Winner: Sandra Machado, MD, Cleveland Clinic Foundation, Cleveland, OH.*



*Exhibit Hall networking at the NANS 10th Annual Meeting.*



*NANS President Joshua Prager, MD MS, thanks Scott Drees of Advanced Neuromodulation Systems for Founding Corporate Member Support.*



*Shirley and Rebecca Oakley accepted the Lifetime Achievement Award on behalf of John C. Oakley, MD, 1946–2006.*



*NANS President Joshua Prager, MD MS, thanks Dan Schlewitz and Tom Morizio of Medtronic for Founding Corporate Member Support.*

# 2007 INS-NANS Joint Meeting

Elliot S. Krames, MD, INS President and Editor-in-Chief of *Neuromodulation*

It is with great pleasure that I offer this update on the progress of the 8th World Congress of the International Neurostimulation Society (INS) and the 11th Annual Meeting of the North American Neurostimulation Society (NANS) in Acapulco, Mexico, December 7–12, 2007. The theme is “Neuromodulation: Technology at the Neural Interface.” This exciting meeting will be held at the breathtaking Fairmont Acapulco Princess hotel with its own private beach and two golf courses. There will be full- and half-day seminars, plenary sessions, presentations of papers, poster sessions, breakout sessions, and industry-sponsored seminars.

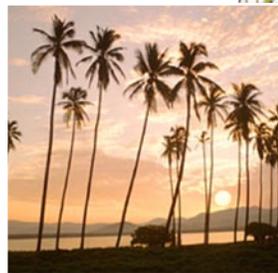
The following leaders in neuromodulation will serve as meeting chairs:

- Joe Pancrazio, PhD, National Institutes of Neurologic Diseases and Stroke (NINDS) of the National Institutes of Health (NIH), Bethesda, MD
- Dominique Durand, PhD, Neural Engineering Center, Case Western Reserve University, Cleveland, OH
- Christopher Colburn, Cleveland Clinic Foundation, Cleveland, OH
- Ali Rezai, MD, Cleveland Clinic Foundation, Cleveland, OH
- Bart Nuttin, MD PhD, Benelux Neurostimulation Society, University of Leuven, Belgium
- Joshua Prager, MD MS, NANS President
- Paul Meadows, PhD, International Functional Stimulation Society, Glendale, CA
- Timothy Deer, MD, Center for Pain Relief, Charleston, WV
- Leo Kapural, MD, Cleveland Clinic Foundation, Cleveland, OH
- Robert Foreman, PhD, University of Oklahoma Health Science Center, Oklahoma City, OK

This exciting event begins on Friday, December 7, with a full-day seminar covering various topics including

- Bioelectrical Basis for Neuromodulation (Warren Grill, PhD, Duke University)
- Design and Implementation of Interfaces for Neuromodulation (Dominique Durand, PhD, Case Western Reserve University)
- Modeling Neural Networks and Fields: Implications for Neuromodulation (Cameron McIntyre, PhD, Cleveland Clinic Foundation)
- Assessing Safety of Electrical Stimulation for Neuromodulation (Douglas McCreery, PhD, Huntington Medical Research Institutes)
- Material Biocompatibility for Implanted Devices (Ravi Bellamkonda, PhD, Georgia Tech)
- Applied Science of Biomaterial Coatings (speaker to be determined)
- Regulatory Issues for Neuromodulation Devices (speaker to be determined)
- Working Lunch—Neural Engineering Partnerships: Bridging the Clinical and Engineering Divide (Ali Rezai, MD, Cleveland Clinic Foundation; Hunter Peckham, Case Western Reserve University)
- Principles of Drug Delivery in the Nervous System (Charles Nicholson, PhD, New York University)
- Convective Drug Delivery in the Spinal Cord: Implications for Neuromodulation (Malisa Sarntinoranont, PhD, University of Florida)
- Research and Funding Opportunities for Neuromodulation (Joseph J. Pancrazio, PhD, National Institutes of Health).

On Saturday, December 8, there will be two half-day seminars chaired by Dominique Durand, editor-in-chief of the *Journal of Neural Engineering*, and Christopher Colburn of the Cleveland Clinic Foundation. Professor Durand will chair the first half-day



Photos courtesy of Acapulco Office of Conventions and Visitors

session, “Neuralengineering for Non-Engineers,” and Christopher Colburn will chair the second half-day session, “Turning Neuromodulation Innovations into Effective Medical Products.”

The regular sessions will begin on Sunday and continue through Wednesday, December 12. These all-day sessions will include morning plenary sessions and presentations of papers followed by an afternoon of choice of three breakout sessions. There is something for everyone—neuromodulation for the brain, pain, functional electrical stimulation, intrathecal therapies, and much more.

We expect approximately 1,000 attendees from Asia, Australia, Europe, the Middle East, North America, and South America, for this exciting meeting. The days are full, and the evenings will be enchanting and exciting. There will be time for intimate dinners and networking with friends and colleagues from the four corners of the world. We will highlight all the newest innovations in our field. Our sponsors include Advanced Bionics (Boston Scientific), Advanced Neuromodulation Systems, and Medtronic, and each sponsor has planned major events for our attendees and their families.

Don't miss this stimulating meeting. You are invited to submit abstracts for paper presentations or posters. Visit [www.neuromodulation.com](http://www.neuromodulation.com) for more information and to register or e-mail [INS@neuromodulation.com](mailto:INS@neuromodulation.com).

## Call for Article Submissions

The North American Neurostimulation Society is seeking experts to submit articles for the 2007 newsletters.

Suggested article topics:

- local and regional challenges
- ethical dilemmas and controversy in the field
- informed consent
- new technology
- members in the news
- determining risks and benefits
- treatments, surgery, and therapy options for various disorders
- tips and strategies
- conflicts of interest
- clinical trials
- case studies
- best practices in neuromodulation
- respecting the rights of patients and families

Suggested length for newsletter articles is 500–1,500 words. To submit an article or suggest topics for upcoming issues, please contact Jaimie Henderson, MD, at [henderj@stanford.edu](mailto:henderj@stanford.edu).

# Implantable Therapies and Reimbursement Woes

Daivd S. Kloth, MD, Founder and Medical Director, Connecticut Pain Care, Danbury, CT



**R**eimbursement issues continue to plague physicians in all areas of medicine, but especially in the area of implantable technologies. Reimbursement difficulties most

significantly affect the use of implanted spinal drug delivery systems, and many physicians have abandoned this therapeutic modality in favor of other techniques. Some physicians do not offer implanted spinal drug delivery systems as a treatment for their patients, choosing to use alternative methods such as high-dose medications or to not treat the patient when implanted spinal drug delivery systems become the only remaining option. In some areas of the United States almost no physicians will implant spinal drug delivery systems. Every week I speak to another physician who has stopped implanting pumps or will no longer manage existing pumps. Certain crisis areas have developed, and in the state of Washington, physicians have discharged their patients and referred them to a tertiary teaching center for long-term management. This situation has placed a tremendous burden on teaching centers to manage these intrathecal drug delivery systems, often at a reimbursement loss with each refill.

No universal policy for reimbursement of pump refills exists. Local Medicare carriers have the power to choose how they want to reimburse organizations for these procedures. Although there is consistency in the actual reimbursement for the technical component (Current Procedural Terminology® [CPT] 95990 and 95991), there is no uniformity in how associated evaluation and management (E/M) visits are handled or, more important, in how the medications are reimbursed. This latter problem has significantly affected physicians. In some states the Medicare intermediary has decided to reimburse physicians only for the cost of the powdered medication and not for the actual act of compounding. This decision makes the physicians responsible not only for the cost of compounding the medication but for the shipping cost to obtain the medications. Because of this significant loss of revenue to the physician—combined with the severe

reductions in the reimbursement for the refill and reprogramming—many physicians have abandoned this therapeutic modality. This situation is obviously problematic for patients in need of this service. The loss of implantable therapies affects many types of patients including, sadly, the cancer patient population.

In July 2006, the American Medical Association (AMA) released vignettes describing the appropriate use of E/M services with pump refills. The use of E/M codes is appropriate when a separate and identifiable service is performed at the time of a pump refill. If the patient is seen only for back pain, no change of medications or dosages is needed, and if the patient's pain level is stable, an E/M service cannot be billed. However, if a patient is seen with a coexisting disease in other areas (e.g., arthritis of the shoulder in addition to a failed back syndrome or chronic headaches), the patient can be billed for an E/M service, provided that a separate and identifiable service is performed. In addition, the chronic management of medications and the requirement of the physician to deal with side effects from the intrathecal medications are billable E/M services (e.g., if a patient has hypogonadism from intrathecal narcotics or urinary retention from intrathecal narcotics and this condition must be managed, then an E/M service can be billed). These E/Ms that I provided to the AMA CPT panel for review and publication have been carefully edited and should, I hope, help physicians with denials for concurrent E/M services.

I have spent the last 3–4 years working with the Centers for Medicare & Medicaid Services (CMS) to handle the global reimbursement for pump refills. One of the glaring problems that we discovered was that CPT 95991 did not include the cost of the refill kit. After lengthy discussions with CMS we were able to get this cost added to the relative value units (RVUs) for this CPT code; however, this addition resulted in minimal change because of offsets from practice expense and other complicated Medicare formulas. During the next several years we will see that money put back into this code; however, it will take a number of years, and we will see this money only as long as Medicare reimbursement does not continue to decrease.

The AMA also stated that there is a need

to reprogram the pump every time the pump is refilled. Because reprogramming of the pump requires the pump to be reset with a new volume, this step indeed correlates with reprogramming of an implanted intrathecal delivery system. However, if a pump is interrogated following a magnetic resonance imaging (MRI) scan and no changes are made to the pump, then this procedure is billed with CPT code 62367 rather than the reprogramming code 62368.

A committee of physicians representing multiple professional societies including NANS, the American Society of Interventional Pain Physicians, the International Spine Intervention Society, the American Pain Society, the American Academy of Pain Management, and the American Society of Anesthesiologists has been working with CMS to correct some of the glaring inadequacies in pump refill reimbursement. These inadequacies have led to an access problem for this treatment modality across the country, affecting certain regions more significantly where the reimbursement is lower than other areas. In certain states the reimbursement continues to be good. For example, physicians in Texas and California have worked closely with their Medicare intermediaries to achieve a better policy. Unfortunately, most of the policies have been instituted unilaterally without input from physicians. At this juncture our committee is working with CMS to discuss a national Medicare reimbursement policy for these devices.

In regard to spinal cord stimulation, many problems are occurring with this treatment modality as it relates to reimbursement. Perhaps one of the most significant problems today is with Aetna, which has recently released a policy precluding reimbursement for spinal cord stimulation in the cervical region. Their rationale is that these devices are not FDA approved for the cervical region. A committee of physicians is planning to meet with Aetna in the near future to discuss this policy.

Members of the leadership committee continue to work very hard for members of their organizations to ensure appropriate reimbursement for these treatment modalities. It is incumbent upon our physician members to support their leaders and keep them informed when these reimbursement issues arise. **N**



# Meetings of Interest

NANS members are encouraged to attend these meetings of interest presented by other pain, spine, and neurological associations. Please visit their Web sites for more information.

## June

### Radiofrequency Workshop

International Spine Intervention Society  
June 2–3, Pittsburgh, PA  
[www.spinalinjection.com](http://www.spinalinjection.com)

### ASIPP 9th Annual Meeting and Legislative Session

American Society of Interventional Pain Physicians  
June 23–27, Washington, DC  
[www.asipp.org](http://www.asipp.org)

## July

### AANS Practice Management Workshop

American Association of Neurological Surgeons  
July 1, Chicago, IL  
[www.aans.org](http://www.aans.org)

### Comprehensive Imaging Review in Interventional Pain Management and Competency Certification in Fluoroscopic Interpretation and Radiation Safety

American Society of Interventional Pain Physicians  
July 13–16, Las Vegas, NV

### Training Examination

American Society of Anesthesiologists  
July 14, various locations  
[www.asahq.org](http://www.asahq.org)

### ISIS 15th Annual Meeting

International Spine Intervention Society  
July 15–21, Baltimore, MD

## August

### Phase 3 Cervical Workshop

International Spine Intervention Society  
August 4–5, Charlotte, NC

### Comprehensive Pain Medicine Board Review Course and ASIPP Part 1 Examination

American Society of Interventional Pain Physicians  
August 5–11, Nashville, TN

### 5th Annual Comprehensive Pain Board Review Symposium

American Pain Society  
August 7–11, Middleton, WI  
[www.ampainsoc.org](http://www.ampainsoc.org)

### Practice Management

International Spine Intervention Society  
August 18–19, San Diego, CA

## September

### PAIN Week 2007

American Pain Society  
September 6–9, Las Vegas, NV

### Phase 1 Lumbar Workshop and Fri Fluoroscopy

International Spine Intervention Society  
September 7–9, Memphis, TN

### XXVI Annual Congress on the European Society of Regional Anaesthesia and Pain Therapy

American Pain Society  
September 12–15, Valencia, Spain

## 57th CNS Annual Meeting

Congress of Neurological Surgeons  
September 15–20, San Diego, CA  
[www.neurosurgeon.org](http://www.neurosurgeon.org)

## October

### Radiofrequency Workshop

International Spine Intervention Society  
October 13–14, Phoenix, AZ

### ASA Annual Meeting

American Society of Anesthesiologists  
October 13–17, San Francisco, CA

### NASS 22nd Annual Meeting

North American Spine Society  
October 23–27, Austin, TX  
[www.spine.org](http://www.spine.org)

## November

### Clinical Imaging Course

International Spine Intervention Society  
November 3–4, New Orleans, LA

### 2007 Annual Pain Medicine Meeting and Workshops

American Society of Regional Anesthesia and Pain Medicine  
November 15–18, Boca Raton, FL  
[www.asra.com](http://www.asra.com)

## December

### 11th NANS Annual Meeting Neuromodulation: Technology at the Neural Interface

December 7–12, Acapulco, Mexico  
[www.neuromodulation.org](http://www.neuromodulation.org)

## President's Message *continued from page 1*

and weaknesses of a large body of literature that is convincing in its entirety despite the fact that there is a paucity of class 1 data. This study is being disseminated and reviewed by a variety of medical organizations for publication in a major medical journal. We congratulate Dr. North and Ms. Shipley on a job well done. (For more information about Dr. North's work with spinal cord stimulation, see the "Members in the News" section on page 2.)

The next NANS annual meeting, a joint meeting with the International Neuromodulation Society, will be held December 7–12, 2007, in Acapulco, Mexico. We are enthusiastic about this upcoming meeting titled "Neuromodulation: Technology at the Neural Interface." For more information, visit the NANS Web site at [www.neuromodulation.org](http://www.neuromodulation.org). Because the International Neuromodulation Society continues to grow at a rate similar to that of our

society, we expect a large attendance from the entire world. I hope to see you there. Sincerely,

Joshua P. Prager, MD MS  
President

# 2007 Intrathecal Drug Treatment Group

Timothy Deer, MD, President and CEO, The Center for Pain Relief; Clinical Professor, West Virginia University, Morgantown, WV



For the third time in the last decade, an international group of distinguished experts met to address the evolving practice of intrathecal drug delivery. The discussions from the

January 2007 meeting held in Miami will result in the publication in peer-reviewed journals of three papers addressing various aspects of neuraxial medication administration, including an algorithm for polyanalgesia, a discussion of reimbursement issues, and an update on intrathecal granulomas.

In 2000, a group of experts gathered to review the world literature on the use of intrathecal agents for the treatment of pain. This panel, chaired by Dr. Samuel Hassenbusch and Dr. Russell Portenoy, conducted a survey of users of intrathecal agents in the United States, Europe, and Australia. Based on the reported use of medications by those surveyed, an extensive search for published literature was performed. The consensus group ranked the articles according to the quality of data and their clinical importance. Using this information and their own clinical experience, the diverse group of physicians developed an algorithm to guide physicians in the use of intrathecal agents.

This algorithm recommended beginning treatment with an opioid (morphine) and then making changes by substituting other opioids such as hydromorphone. Other recommendations of the algorithm were to add nonopioid agents such as bupivacaine or clonidine to the infusion to overcome side effects and improve efficacy. This algorithm further informed physicians of the possible treatment alterations that could be made on the basis of the scientific criteria until eventually the options included drugs that should be used only in research settings or by physicians in end-of-life clinical situations.

In 2003, Dr. Hassenbusch, Dr. Portenoy, and Dr. Michael Cousins reconvened the group to update the algorithm. The panel

surveyed previous information as well as all significant peer-reviewed articles published since the previous meeting and developed several new recommendations. The first line of drug therapy was changed to include both morphine and hydromorphone. Second-line therapies continued to include substitution of opioids or the addition of nonopioid adjuvants. The other major change from the previous algorithm was the addition of recommended doses and concentrations for opioids. These numbers added to the increasing awareness of the risk of granuloma with high concentrations of opioid. The group also made recommendations regarding safety and compounding.

In 2007, Dr. Hassenbusch and Dr. Timothy Deer reconvened another group to update the algorithm. This panel included a diverse group of anesthesiologists, neurosurgeons, and physiatrists from academic and private clinical settings. The group updated the literature search and reviewed new clinical issues that had developed during the past 4 years. The proceedings and conclusions of that meeting are now being submitted for publication in the journals *Neuromodulation* and *Pain Medicine*.

The highlights of the new consensus statement include a change in the first line of therapy to include morphine, hydromorphone, and ziconotide. The second line of therapy recommendations will also include ziconotide as an adjuvant option along with clonidine and bupivacaine. The group also ranked other drugs in order of scientific support and clinical utility. An important new component including special recommendations for end-of-life care was also developed for the 2007 version of the consensus statement.

The group created a separate document to give a consensus on the prevention, diagnosis, and treatment of inflammatory masses at the catheter tip. This document represents the first major consensus on this issue since 2002, and this consensus is greatly needed to improve clinical care and patient safety. Included in the statement are the recommended drug concentrations for opioids, recommended screening

techniques, and recommended algorithms for treatment of this problem. The panel also made recommendations for the priorities for future intrathecal drug research and development.

The other critical issue that the 2007 group reviewed and made recommendations on was patient access to intrathecal therapies. Dr. Deer, Dr. Hassenbusch, Dr. Robert Levy, and Dr. Elliot Krames developed a new survey to analyze the issues that limit patient access to intrathecal drug infusion systems. The factors that were felt to have an impact on this major public health problem included education of the public and the physician referral group, physician education on implanting and managing pumps, physician reimbursement for implanting and managing intrathecal drug delivery systems, facility reimbursement for devices and infusion drugs, and insurance coverage for patients who see pain physicians. The group made recommendations to address these issues and help patients receive proper care.

The complete proceedings of the 2007 consensus group will be published during the next several months, and the important components of this work will be presented at the December 2007 joint meeting of the International Neuromodulation Society and NANS in Acapulco, Mexico. See page 4 for more information about the joint meeting. **N**

## Suggested Reading

- Bennett, G., Burchiel, K., Buchser, E., Classen, A., Deer, T., Du Pen, S., et al. (2000). Clinical guidelines for intraspinal infusion: Report of an expert panel—Polyanalgesic Consensus Conference 2000. *Journal of Pain and Symptom Management*, 20(2), S37–43.
- Hassenbusch, S., Burchiel, K., Coffey, R., Cousins, M., Deer, T., Hahn, M., et al. (2002). Management of intrathecal catheter-tip inflammatory masses: A consensus statement. *Pain Medicine*, 3(4), 313–323.
- Hassenbusch, S., Portenoy, R., Cousins, M., Buchser, E., Deer, T., Du Pen, S., et al. (2003). Polyanalgesic Consensus Conference 2003: An update on the management of pain by intraspinal drug delivery—Report of an expert panel. *Journal of Pain and Symptom Management*, 27(6), 540–563.

*Save the date!*



## Neuromodulation: Technology at the Neural Interface

The 8th World Congress of the  
International Neuromodulation Society

The 11th Annual Meeting of the  
North American Neuromodulation Society

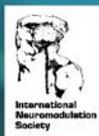
- Pre-conference on The Fundamentals of Neuromodulation  
Faculty: Joseph J. Pancrazio PhD - Program Director, Extramural Research, NIH
- Implantable Technology for Pain
- Functional Electrical Stimulation
- Deep Brain Stimulation for Movement and Psychiatric Disorders
- Emerging Indications for Neuromodulation

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North American Neuromodulation Society  
4700 W. Lake Avenue  
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