

# Society for Pediatric Anesthesia



education • research • patient care

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## Editor's Note



*Jayant K. Deshpande, MD*

I am delighted to welcome the newest members of the Publications Committee, Drs. Allison Kinder-Ross (Duke University) and Brenda McClain (Yale University). These capable folks bring fresh perspective to the Committee and will enhance this publication in future issues. At the same time, I want to thank Drs. Howard Gutstein, Frank McGowan and Mehernoor Watcha for their active support and contributions for the past two years. Although they are rotating off the Committee we look forward to contributions from them in future editions. Finally, thanks to Dr. Tom Mancuso (Children's Hospital, Boston) for his active participation and leadership in the Committee and for his willingness to serve as the Editor of the *Point/Counterpoint* section of the Newsletter.

All this comes at an exciting time in the Society. Dr. Steven C. Hall (Children's Memorial Hospital, Chicago) assumes the helm as President of the Society. The elections at the Business Meeting bring more new leaders to the Society: Dr. Frank McGowan, Treasurer and three new Board Members at Large (Drs. Patty Davidson, Lynne Maxwell and Jerry Lerman). Their leadership will build on the significant advancements in Pediatric Anesthesia made under Dr. Mark Rockoff's tenure for the last two years.

In this issue, we include three articles of special importance. The *Hot Topic* addresses the issue of Pediatric Sedation and who should manage it. The two articles on Manpower are timely as we face a national staffing crunch while at the same time begin the formal accreditation of training programs in Pediatric Anesthesia. My thanks to Drs. Hackel and Orkin for their commentaries.

Jayant K. Deshpande, M.D.

*Editor*

# President's Message



One of the most famous lines by Groucho Marx came when he sent a note to an exclusive Beverly Hills club. "I don't want to belong to any club that would have me as a member." Finding oneself as President of the SPA brings new meaning to this line. The SPA has grown dramatically since its inception thanks to the foresight and leadership of many dedicated individuals. Our Immediate Past President, Mark Rockoff, has contributed to our growth in many different ways - we are a stronger and more vibrant Society because of his contributions and those other members who have contributed their time and talents.

Please welcome five new members to our Board - Drs. Frank McGowan (Treasurer), Raafat Hannallah (Chair of the American Society of Anesthesiologists' Committee on Pediatric Anesthesia), Jerrold Lerman, Patricia Davidson, and Lynne Maxwell. We look forward to the energy and new ideas they bring to us. Thanks is due to our three retiring Board members, Drs. Raeford Brown, David Nichols, and James Viney, who have brought so much to the Society. As part of the start of this new year, the Board is setting out new goals to stretch our efforts to bring our membership and the public-at-large the best in education, research, and patient care.

Elsewhere in this issue, you will find comments on the Fall SPA meeting. It was a wonderful combination of new basic science and clinical knowledge, coupled with (occasionally controversial) clinical forums. Lynn Martin and his Education Committee worked intensely to bring the Society the best in a one day venue. We anticipate that our Winter Meeting at the

Desert Inn in Las Vegas will be equally worthwhile, so please plan on attending February 18-21.

I would like to comment on the recent ASA meeting. This meeting is always bigger than one would like, meaning that it is impossible to see every poster, clinical forum, and lecture that is of interest. One thing that is not widely discussed, however, is the activity of the ASA's House of Delegates. Important discussions about standards, practice parameters, statements of ethical principles, and others go on at the House and its Reference Committees, with the ASA then often taking definitive positions on important issues. Pediatric anesthesiologists are not widely represented in this process. The SPA has one seat and vote in the House. Several pediatric anesthesiologists have votes as delegates from their state delegations, but it appears to me that we do not have a representation equivalent to our number of members. Because of the significance of positions taken by the House, in the name of all anesthesiologists, it is important that we understand and participate in the process. Several issues of note from this year's House include:

**NEW STANDARDS** - The Standard for capnography was changed. Remember that a "standard" is a position that the Society feels strongly about, such that the position is part of the "standard of care". It is our highest level of recommendation. Guidelines and practice parameters, for instance, involve suggestions of good care, but are not considered mandatory. The standard on capnography was changed to read that, "Every patient receiving general anesthesia shall have the adequacy

of ventilation continually evaluated. Qualitative clinical signs such as chest excursion, observation of the reservoir breathing bag, and auscultation of breath sounds are useful. Continual monitoring for the presence of expired carbon dioxide shall be performed unless invalidated by the nature of the patient, procedure, or equipment. Quantitative monitoring of the volume of expire gas is strongly encouraged." The change is that "continual monitoring for the presence of expired carbon dioxide" for all general anesthetics, including those done with a mask, is now mandated.

Once again, it was proposed that temperature monitoring become a standard, instead of strongly recommended, for all except short cases. Of note, the definition of a "short case" was quantified at 45 minutes. The reason for this is that there is now good evidence, in adults, that there is a drop in core temperature over the first 45 minutes of a general anesthetic as there is a redistribution of blood flow into the periphery. Consequently, 45 minutes was used as the definition of a period of time below which monitoring was viewed as potentially not of as much use. In any case, the vote was whether to make temperature monitoring a standard for all except short cases. As in the past, it was defeated.

**STATEMENT ON CLINICAL PRIVILEGES** - A new statement on "Criteria for Delineation of Clinical Privileges in Anesthesiology" was proposed by the Ad Hoc Committee on Performance-Based Credentialing. This statement replaced a previous one of the same name. The guidelines cover many aspects of granting and reappraisal of clinical privileges in anesthesiology. It is composed of suggestions about what components could be part of a privileging process for a given institution. Credentials based on training and experience, such as ABA Board certification, are discussed. Of interest, there is some mention of subspecialty work and appropriate assessment of privileges.

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## President's Message

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### The new criteria state:

The following items are for organizations granting physicians clinical privileges to practice in a subspecialty of anesthesiology.

\* Completion of a fellowship approved by the ACGME (Critical Care Medicine, Pain Medicine, Pediatric Anesthesia) or by the AOA, or a fourth clinical year (CA-4) or fellowship of at least 12 months duration not accredited by the ACGME or by the AOA (e.g., Obstetric or Cardiac Anesthesia).

I would stress that this DOES NOT mean that the ASA is saying that a fellowship is needed to practice pediatric anesthesiology. It says that if an individual institution wants to set specific criteria for anesthesiologists given privileges to care for children, that one criteria that could be used is completion of additional training. Other criteria, such as experience, can also be used. The Criteria are proposed only as suggestions for the basis of privileging and should be modified according to the needs and resources of the individual institution.

DNR ORDERS - The Committee on Ethics proposed some revisions of the guidelines for do-not-resuscitate orders or other directives that limit treatment. They further clarify the many different options that can and should be discussed with the patient and/or family or surrogate. It adds the option of discussing limited attempts at resuscitation with regard to the patient's goals and values. The language and concepts are timely, and I would suggest that you look at them when formally published.

Lastly, I would like to congratulate one of our own, Dr. Roger Moore, who was elected Assistant Treasurer of the ASA. This gives him a seat on the Executive Council, an important and influential body for all of anesthesiology.

Change is often slow with a large organization such as the ASA. As the aligned subspecialty organization devoted to the advocacy of children, the SPA has an opportunity and an obligation to interact with the ASA. We need to understand the issues discussed by the larger organization and provide counsel about the implications for the care of children. The Board welcomes your advice and counsel on these issues.

Steven C. Hall, M.D.

*SPA President*

*Children's Memorial Hospital*

*Northwestern University*

*Chicago, IL*

## New Members

**Abdulhadi**, Ar M., MD, Belleville, IL  
**Balakrishnan**, Guruswamy, MD, Bloomfield Hills, MI  
**Bhatt**, Vimala P., MBBS, DABA, Yorktown Heights, NY  
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**Desparmet**, Joelle, MD, Montreal, PQ, Canada  
**Finder**, Richard, DMD, MS, Pittsburgh, PA  
**Fine**, Bradley A., MD, Morton Grove, IL  
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**Garg**, Govind P., MD, San Antonio, TX  
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**Gullberg**, Ninna, MD, Stockholm, Sweden  
**Habre**, Walid, MD, Geneva, Switzerland  
**Hawley**, Virginia, MD, Hillsboro, OR  
**Heleniak**, Stanley J., DMD, Harleysville, PA  
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**Kareti**, Mohan Y., MD, Middle-Berg Heights, OH  
**Kee**, Spencer S., MD, Houston, TX  
**Lau**, Lilian, MBBS, FANZCA, Pearl Island, Hong Kong  
**Lee**, Jeremy S., MD, El Paso, TX  
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# 12th Annual Meeting Review

Orlando, Florida • October 16, 1998

Gail E. Rasmussen, M.D.

Associate Editor

Vanderbilt Children's Hospital, Nashville



The 12th Annual Meeting of the Society for Pediatric Anesthesia was held on October 16, 1998, preceding the ASA meeting in Orlando, Florida. It was a full and informative day and Lynn Martin, MD the program Chair should be commended for organizing such a successful meeting with more than 350 participants from varying countries.

The morning session began with introductory remarks by Drs. Mark Rockoff, SPA President and Lynn Martin, Program Chair. The first session entitled *Scientific Advances in Pediatric Resuscitation* was moderated by Dr. Alvin Hackel of Stanford University.



Dr. Donald H. Shaffner, Johns Hopkins University gave the first talk on the *Advances in Cardiopulmonary Resuscitation*. He presented the scientific evidence, mostly in animal models and adults supporting some recommendations for changes in the practice of pediatric CPR. These included flushing peripherally given medications with a saline bolus to enhance effectiveness and the use of the intra osseous route as an alternative to

intravenous access in order to not delay resuscitative efforts. Dr. Shaffner also discussed the controversy of endotracheally administered drugs in resuscitation and the need to use 2.5 to 10 times the dose used IV doses of epinephrine and the utility of supplying larger doses with each subsequent dose. He summarized the data on the use of ETCO<sub>2</sub> monitoring to gauge the effectiveness of CPR; higher ETCO<sub>2</sub> indicate improvement in pulmonary blood flow (<20 mmHg; ineffective CPR). Absence of an increase in the ETCO<sub>2</sub> supports the idea of ineffective CPR and, therefore, the decision to discontinue CPR. He also discussed the technique of CPR itself with simultaneous compression ventilation CPR (SCV-CPR) and interposed

abdominal compression CPR (IAC-CPR) and active compression decompression (ACD-CPR) and whether these changes can ultimately improve outcome.

The second speaker of this session, Dr. Patrick M. Kochanek of Safar Center for Resuscitation Research in Pittsburgh, addressed the *Frontiers in Cerebral Resuscitation: Lessons Learned from Human Head Injury*. He discussed the poor prognosis with early hypoperfusion after traumatic head injury, the biochemical and molecular mechanisms of secondary injury, which include: excitation and the release of excitatory amino acids (seen commonly in child abuse cases), inflammation cascade with both beneficial and detrimental aspects with IL-6 and IL-8 and cytokines, apoptosis with DNA cleavage products and the expression of cellular death indicating that therapeutic strategies may need to be aimed at necrosis and apoptosis in future studies.



The second morning session was entitled *Clinical Update of Pediatric Resuscitation* and moderated by Dr. Randall C. Wetzell of Children's Hospital, Los Angeles. The first speaker was David Zideman, M.B.B.S. of Hammersmith Hospital Trust, London, whose talk was *Paediatric Resuscitation: The European Perspective*, was informative and entertaining. He outlined the work of the European Resuscitation Council and the International Liaison Committee on Resuscitation (ILCOR) in conjunction with the American Heart Association in establishing guidelines and protocols for pediatric resuscitation and how they differ from previous guidelines in terms of chest compression depth rate and the change at age eight to 15:2 rate of compressions to



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## SPA Annual Meeting Review

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breaths. He reviewed the four H and four T causes of PEA which included: Hypoxia, Hypovolemia, Hypothermia, Hypo/Hyperkalemia and Tension pneumothorax, Tamponade, Toxic Causes and Thromboembolism.

The next speaker was Dr. Jeremy M. Geiduschek of Children's Hospital, Seattle who presented the *Lessons Learned from the POCA Registry; Causes and Outcomes of Pediatric Perioperative Cardiac Arrest*. In this study a total of 262 cases of pediatric cardiac arrest were reviewed and demographics reviewed and categorized. In the participating institutions there was a cardiac arrest rate of 2.7 per 10,000 anesthetics and that children under one year of age represented 61% of all cases entered into the registry. Several other interesting points were noted, only 30% of the cases were emergency cases, most common procedure was exploratory laparotomy, only 8% of the cases were attributable to respiratory causes whereas 37% were attributed to cardiovascular causes and 50% of the mortality was with ASA class IV and V. This study is well worth reviewing in the continued analysis of causes of pediatric cardiac arrest and outcome, particularly in the operating room.



The morning session ended with a luncheon that also included the SPA Business Meeting and election of new officers. Please see the President's Report for more details.

The afternoon meeting was more clinically oriented. The first session was **Office Based Anesthesia — The Next Frontier for Pediatric Anesthesia**, moderated by Mark Helfaer of Children's Hospital Philadelphia. The first speaker was Stephen Wilson, DMD, MA, Ph.D. of Children's Hospital of Columbus whose talk was entitled: *Office Based Anesthesia--A Dentist's Perspective*. He reviewed practice issues and the practicality issues of being able to provide General Anesthesia for pediatric dentistry cases. There is a clear difference in the training that pediatric dentists receive compared to that of



oral maxillofacial surgeons who receive extensive experience in the administration of anesthesia. He also reviewed his practice and how the patients are medicated and monitored to provide a safe alternative to the OR. The next speaker was Dr. Richard A. Berkowitz of the University of Illinois College of Medicine whose spoke on *Office Based Anesthesia: An Anesthesiologist's View*. He discussed the growing need and



pressure to supply office based anesthesia particularly for pediatric patients and the inherent difficulty in meeting this need from the personnel standpoint. He also talked about the establishment of an office based practice and the essential communication between anesthesiologist and procedure practitioner and the selection of appropriate patients and procedures for such a practice and the establishment of safe practices with regulation and accreditation of such practices. The final speaker in this session was Dr.

Charles Coté of Children's Memorial Hospital, Chicago speaking on *Outcomes of Office Based Anesthesia: A Historical Review*. He reviewed the present information on "sedation disasters" and the subsequent guidelines that were published by the American Academy of Pediatrics in 1985 and revised in 1992 with emphasis on appropriate post sedation observation and the establishment of strict discharge criteria. It appears that appropriately trained personnel in the recognition of cardio-respiratory issues is of paramount importance in dealing with sedation difficulties appropriately and to avoid potential disasters from sedating a child. He cautioned that the push for office based care imposed on us be carefully examined particularly in regard to training and supervision of those providing sedation.



There was a lively debate about those issues of course led by Dr. Charles Coté and a discussion of the recent article in Pediatrics about the establishment of a Pediatric Sedation Unit (see *Hot Topic* by Dr. John Algren, this issue).

The next session *Contemporary Management Issues* was moderated by Dr. Karen S. Bender of Arnold Palmer Hospital for Children and Women, Orlando. Dr. Zeev Kain of Yale-New Haven Hospital spoke on *Perioperative Anxiety--The Patient, Parents and Anesthesiologist*. He discussed the various aspects



contributing to perioperative anxiety in the child and what preventions and interventions can be undertaken to reduce the anxiety as much as possible. He showed data on Parental Presence during induction of Anesthesia (PPIA). He indicates that routine use of PPIA may not be beneficial overall, there must be selection of children and parents in which PPIA may actually help with perioperative anxiety. PPIA does place stress and anxiety on the anesthesiologist and the

fact that the parent may distract the practitioner from the primary responsibility of the child. In addition, the legal ramifications of PPIA with the hospital having a legal responsibility for the non-patient invited into the operating room. He also discussed the pharmacologic interventions to reduce perioperative anxiety and the need for continued ongoing evaluation in terms of postoperative outcome and potential beneficial effects of decreased anxiety.

The final speaker of the day was Dr. Rhea Seddon of Vanderbilt Medical Group, and a former NASA Astronaut, whose talk *Medicine on the Final Frontier: A Microgravity Environment*, gave a fascinating perspective of an astronaut physician. She discussed the Space Shuttle missions dedicated



to the study of life sciences in space and subsequently the medical equipment needed for medical care aboard the International Space Station. She looked at what is needed in terms of medical care in the closed environment of the Spacelab and how certain aspects of these studies may have impact also in the future of medical technology.

One couldn't expect a group of Pediatric Anesthesiologists to be in Orlando without somehow interfacing with Disneyworld. Therefore, the SPA buffet reception was held this year at EPCOT Center's American Adventure Pavilion and was complete with music and fireworks to culminate the meeting experience.



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SPA Annual Meeting Review  
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# Out and About the ASA

Notes From the 1998 Annual Meeting, Orlando, FL

## Monday Morning Poster-discussion Session

Various issues in regional anesthesia for infants and children were highlighted in this scientific papers session. Raux and colleagues (A1252) hypothesized that Clonidine may be used to lengthen the effects of a bupivacaine spinal anesthetic in newborns. Seventy-five neonates undergoing inguinal hernia repair were allocated to four study groups that received spinal bupivacaine + clonidine at 4 different doses (0.25mg/kg, 0.50 mg/kg, 1.0 mg/kg and 2.0 mg/kg). The authors found a significant lengthening in the duration of the spinal block in the 1.0 and 2.0 mg/kg groups. It should be noted, however, that a significant (40%) decrease in blood pressure was observed among most of the study subjects. Thus, more information about the hemodynamic effects of spinal clonidine in infants must be obtained before we consider incorporating this drug to our routine clinical practice.

The potential use of epidural ropivacaine and S-(+) ketamine was evaluated by investigators from Australia, Austria and the United States. McCann et al. (A1251) examined uptake and clearance of ropivacaine following epidural bolus in children (1.75mg/kg) and adolescents (62.5 mg, fixed dose). Venous samples were drawn at 0, 10, 20, 30, 60 and 90 minutes and at 2, 6, 12 and 24 hours. The investigators reported a slow uptake, with peak concentrations at 56±36 mins in children and 63±28 mins in adolescents, respectively. Clearance normalized to weight appeared faster in children than adolescents, un-normalized clearance appeared slower in children than in adolescents, with wide variability. The investigators concluded that peak concentrations were well below the toxic threshold reported in adult human and animal studies. Clearances appeared somewhat lower than reported for ropivacaine in adults, thus there may be a need for higher infusion rates in children. In a similar investigation, Habre and colleagues (A1245) examined the pharmacokinetics of ropivacaine after caudal administration in children. The caudal blockade was performed using 1ml/kg of ropivacaine 2.5 mg/ml. Serial blood was collected immediately before and at multiple time points after completion of the ropivacaine injection. The investigators found that maximum venous plasma concentrations after caudal ropivacaine were achieved much later than reported previously for bupivacaine in children, and were much lower than the toxic threshold for ropivacaine in adult volunteers (0.72±0.24 vs. 2.2±0.8). As in the investigation above, the authors conclude that ropivacaine pharmacokinetics following caudal analgesia in children differ significantly from ropivacaine kinetics in adults after epidural administration. Plasma concentrations after 2.5 mg/kg appeared to be, however, below the threshold for CNS and cardiac toxicity.

Campos et al. (A1250) evaluated the quality and duration of analgesia, motor effects, and time to first micturition with caudal anesthesia in 38 children who were scheduled for urologic or lower abdominal procedures. The children were randomized to receive either ropivacaine 0.25% or bupivacaine 0.25% at 1 ml·kg<sup>-1</sup>. The investigators found that there were no differences between the two groups in quality or duration of intra and postoperative pain relief, motor effects, sensory level, lower limb or abdominal reflexes, or time to first micturition. The authors suggest that considering the similar analgesic profile and the fact that ropivacaine is less cardiotoxic than bupivacaine, ropivacaine may be a superior drug for pediatric caudal anesthesia. Obviously, more pediatric pharmacokinetic and pharmacodynamic data are needed prior to adopting this drug for wide use. Finally, Mahofer et al. evaluated the postoperative analgesic efficiency and hemodynamic and respiratory safety of S-(+) Ketamine as compared to bupivacaine 0.25% for caudal blockade in 18 children undergoing hernia repair. The authors found no significant differences between the two groups with regard to intraoperative hemodynamics or postoperative analgesia. The authors suggest that caudal S-(+) Ketamine may be an alternative caudal agent to Bupivacaine. Further investigations involving S-(+) Ketamine are needed.

Pereira and colleagues (A1246) sought to evaluate the efficacy of topical anesthesia for newborn circumcision obtained with EMLA cream or iontophoresis against dorsal perineal nerve block (DPNB). The investigators randomized 24 healthy full-term neonates to one of three study groups: DPNB vs. EMLA vs. iontophoresis with 2.0% mepivacaine. The investigators report no significant differences in pain scores between the EMLA and DPNB groups. The investigators also report a partial thickness thermal burn in a child treated with iontophoresis and higher pain scores in this group of patients. The authors encourage routine use of EMLA for all elective newborn circumcisions and discourage the use of iontophoresis for this procedure.

Meunier and colleagues (A1248) evaluated whether bupivacaine concentrations are elevated in infants with biliary atresia (BA) following epidural injection. The investigators examined 12 infants with biliary atresia and compared them to 10 infants with no BA who were scheduled to undergo urologic procedures. All infants received an epidural (L3-L4 or L4-L5) bolus injection of 1.25 mg/kg 0.25 % Bupivacaine followed by 0.375 mg/kg/h 0.125 % Bupivacaine during 48 h. The authors report no differences between the two groups. Unfortunately, the control group was significantly older than the BA group thus the conclusion of the study may be related to an age phenomena and may be invalid.

## Out and About ASA

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Finally, Gouiard et al. (A1249) evaluated the use of intravenous epinephrine containing test-dose with and without atropine in children anesthetized with sevoflurane. The investigators studied 72 children who were randomly assigned to receive atropine (10 mcg/kg) followed by a test dose of 0.1 ml/kg 1% lidocaine *or* atropine followed by 1% lidocaine with 0.5 mcg/kg epinephrine *or* no-atropine before a test dose of 1% lidocaine *or* no-atropine before a test dose of 1% lidocaine with epinephrine. The investigators found that intravenous test dose without epinephrine had no effect on heart rate and blood pressure. Test doses with epinephrine resulted in significant changes in heart rate, blood pressure and T-wave amplitude. In the group that was given atropine prior to receiving lidocaine and epinephrine, changes in heart rate, blood pressure and T-wave amplitude were greater than all other groups. The investigators conclude that in sevoflurane anesthetized children, atropine improves the response to an epinephrine containing test dose.

Zeev N. Kain, M.D.

Yale University School of Medicine

## American Academy of Pediatrics Section on Anesthesiology Breakfast Panel

Over 340 people jammed into Grand Ballroom A-B at the Omni Rosen Hotel to attend the American Academy of Pediatrics Section on Anesthesiology Breakfast Panel Discussion on Anesthetic Management of the Severely Injured Child. Alvin Hackel M.D. convened a distinguished panel of experts, which included Drs. Peter Davis, Timothy Martin and Elliot Krane.

Dr. Davis began with a discussion of the preoperative preparation and evaluation of the injured child. He emphasized the team approach to the care of the critically ill child from the field to the emergency department to the operating room to the pediatric intensive care unit and beyond. He discussed selected topics in the assessment of the injured child including airway management of the child with presumed cervical spine injury. The acronym SCIWORA *or*, subclinical injury without radiographic abnormality was used to remind practitioners that c-spine injury should be assumed even if it is not evident in this group of patients. Dr. Davis provided some graphic illustrations of difficult pediatric airways due to traumatic injury.

Dr. Martin continued with an overview of the intraoperative management of the acutely injured child. He emphasized the spectrum of care from operating room to intensive care unit to the ward. He also raised the issue of continual reassessment of the patient. As is all too frequent in trauma care, associated injuries can be overlooked in the primary survey. Continual assessment and intervention are important components of the pediatric anesthesiologists role in the care of the injured child. The importance of normothermia as well as appropriate blood and blood component therapies were also mentioned.

Dr. Elliot Krane closed the program with an excellent review of post operative analgesic therapy in the critically ill. He provided specific examples of dosing regimens and techniques. He also discussed the use of adjuvant agents such as non-steroidal anti-inflammatory drugs as well as the role of anxiolysis in the acutely injured child. Krane closed with case examples of controversies in the care of the severely injured child such as the use of regional anesthetic techniques which might mask the clinical manifestations of spinal cord compression due to an enlarging epidural hematoma.

The discussion from the audience that ensued was quite lively. Question raised included the safe use of succinylcholine following crush injuries, and fluid resuscitation (including the use of hypertonic saline) in pediatric shock. Audience members flooded the podium to ask the panelists more questions following the formal conclusion of the program.

Scott Schulman, M.D.

Duke University Medical Center

### Society Ties & Totes

Lovely ties and bags featuring the SPA logo in full color are available for sale from SPA headquarters. All profits support the Society's activities. They make great gifts for all occasions

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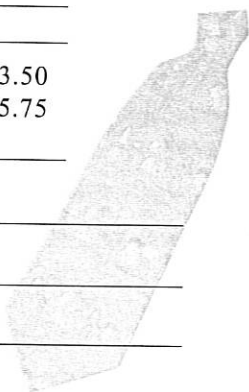
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# Hot Topic

## Sedation Suites ...

### The Way to Go or a Dangerous Trend?

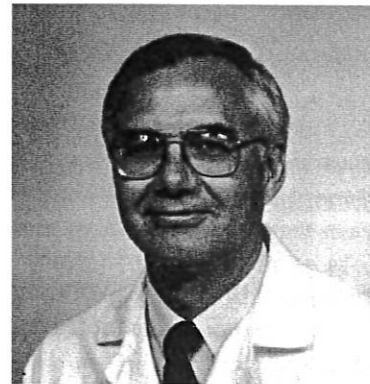
(See Electronic article: Lowrie L, Weiss AH, Lacombe C. *The pediatric sedation unit: A mechanism for pediatric sedation. Pediatrics* 1998; 102: e30.)

The Joint Commission of Accreditation of Healthcare Organizations (JCAHO) requires hospitals to establish uniform policies and procedures for sedation of patients undergoing therapeutic and diagnostic procedures.<sup>1</sup> Lowrie *et al.*<sup>2</sup> describe the operation of the Pediatric Sedation Unit (PSU) at Rainbow Babies and Children's Hospital and report their early experience. Some aspects of the described PSU procedures are contrary to usual practices or accepted standards of care, however, and should be critically evaluated.

Lowrie *et al.*<sup>2</sup> state that the sedation guidelines issued by the American Academy of Pediatrics Committee on Drugs<sup>3</sup> suggest that an anesthesiologist should be present during the sedation of all children. The guidelines actually state that practitioners should be knowledgeable about drugs administered for sedation and analgesia, familiar with appropriate monitoring modalities, and capable of managing potential complications, e.g., respiratory depression, airway obstruction, and cardiopulmonary arrest.<sup>3</sup> Thus, the guidelines address general competencies that are shared by but are not unique to anesthesiologists.

Routine procedures in the PSU include induction of sedation in the PSU followed by transportation of patients by PSU nurses to other units for invasive and diagnostic procedures. PSU physicians remain available by "radio communication" or, when in the MRI suite, by the "hospital pager system." This practice may increase the number of patients that can simultaneously undergo sedation, but it limits the availability of PSU physician(s) and may expose patients to additional risk during transportation. Moreover, PSU nurses are responsible for subsequent administration of propofol, an intravenous anesthetic agent, as well as midazolam, fentanyl and ketamine.

Lowrie *et al.*<sup>2</sup> state that propofol became their agent of choice for sedation because of the familiarity of PSU staff with its use as a sedative agent for patients undergoing mechanical ventilation and because of its rapid recovery time and low incidence of nausea and vomiting. Despite the "familiarity" of PSU physicians and nurses with the effects of propofol, complications occurred in 54 (12%) of 458 sedation episodes. Transient hypotension and hypoxemia were the most common problems. Apnea occurred in seven patients, however, and was "prolonged" in six. Eleven procedures were canceled due to complications. Sedation of patients with disease severity consistent with ASA Class 3 may have contributed to the high rate of complications.



The propofol (Diprivan) package insert warns that, for either general anesthesia or monitored anesthesia care sedation, propofol should be administered only by individuals trained in the administration of general

anesthesia. This warning emphasizes the significant risk of respiratory and circulatory depression associated with the administration of propofol, both in doses expected to produce sedation and in doses used for general anesthesia. Although experienced in pediatric critical care, PSU nurses are neither trained nor qualified to administer anesthetic agents to non-intubated patients. The administration of propofol by physicians not trained in the administration of general anesthesia appears to be imprudent as well.

When confronted with the AAP guidelines and JCAHO standards regarding sedation, some physicians, like those at Rainbow Babies and Children's Hospital, may elect to have other specialists provide sedation for their patients. If anesthesiologists are unable or unwilling to provide this service, hospitals and their medical staffs may choose to develop alternative means to do so. Pediatricians and anesthesiologists must continue to critically evaluate both established and innovative approaches to pediatric sedation to assure that sedation procedures protect patient safety and conform to accepted standards of medical and nursing practice.

#### References:

1. Commission on Accreditation of Healthcare Organizations. *Accreditation Manual for Hospitals*. St. Louis, MO: Mosby-Year Book, Inc; 1993.
2. Lowrie L, Weiss AH, Lacombe C. The pediatric sedation unit: A mechanism for pediatric sedation. *Pediatrics* 1998; 102: e30.
3. American Academy of Pediatrics Committee on Drugs: Guidelines for monitoring and management of pediatric patients during and after sedation for diagnostic and therapeutic procedures. *Pediatrics* 1992; 89: 1110-1115.

John T. Algren, M.D., F.A.A.P.  
*Associate Professor of Anesthesiology and Pediatrics*  
*Baylor College of Medicine, Houston*  
*Staff Anesthesiologist, Texas Children's Hospital*

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## Invited Article:

# A Revisionist Look at Anesthesiology GME Positions

Undoubtedly, many anesthesiologists now believe that the mid-1990s' concern about an anesthesiologist oversupply "crisis" was in error. Perhaps, they may argue, the difficulty graduating residents faced in securing jobs in 1994, especially severe, and 1995 was due to an exaggerated response of both university and community hospital practices to an expected Clinton Health Plan. Once that health care reform foundered, hiring resumed, and now jobs seem plentiful. That our workforce situation is more complicated (and still worrisome) is apparent as we consider several questions briefly (due to space limitations).

### What has happened to residency slots?

Data collected by the American Board of Anesthesiologists each July document trends in our graduate medical education (GME) positions, including the seemingly unlimited growth of GME slots that began in 1980, the peak in PGY2 and PGY3 slots before 1994, the near free-fall beginning in 1995, and the apparent plateau reached this summer, albeit at a lower level (Figure 1). (ABA tabulations do not include several hundred PGY5 and PGY6 fellows, in large part because only programs in a few subspecialty areas are tracked.) Whether the current total number of trainees is "low," "high," or "about right" depends more on when the assessor finished training than any objective assessment of need for anesthesiologists and one's beliefs about what types of personnel should be administering anesthesia services.<sup>1</sup>

### Why did GME slots increase so rapidly?

The "market" for GME slots has always been at the local hospital, rather than the national level. Not unexpectedly, perceived unmet local needs for services, coupled with Medicare (principal external support for GME) paying more than the costs related to trainees, has led to substantial growth in GME slots throughout medicine since 1980. (Residency review committees have generally been fairly lenient in approving GME increases.) In addition to an expanded array of exciting clinical demands, anesthesiology has been blessed with a relatively short training period and especially favorable income growth during much of the past 20 years (Figure 2). Although Medicare support for pediatric anesthesia training is very limited — in relation to the proportion of "disabled" children treated in a given facility — resident and clinical fellow costs in these sites are still very low compared with those of alternative anesthesia providers.

### Why was a decrease in residents inevitable?

Historically, anesthesiology had long been a "shortage" specialty, thus clearly warranted aggressive recruitment. Yet, it was inevitable that *at some point*, even if difficult to identify, the shortage would be repaired and continuing a very high rate of production of new practitioners would overwhelm the marketplace. Whereas in the early 1970s residents could find

jobs at their training site or the local community, over the years residents approaching graduation have been traveling progressively greater distances to find jobs. Anecdotes aside, anesthesiologists' mean income, although still high, began to slacken *in relation to other specialties* by the early 1990s, as if to suggest that we could not escape "supply and demand" relationships.

### Why are jobs more plentiful now?

There are many potential explanations, but a few should not be overlooked: With the recent collapse in PGY2 entry, the graduating class has necessarily become smaller. This year's class, about 1100, was less two-thirds the size of those in the mid-1990s, resulting in less competition for available positions. Compensation packages offered to recent graduates lag behind those of the early 1990s but enable groups to hire more new practitioners. Although physicians continue to enjoy enviable longevity, the increasingly competitive marketplace probably has encouraged some late-career practitioners to consider earlier retirement, creating still other opportunities.

### What GME changes are likely in the near future?

Yogi Berra apparently noted that prediction is difficult, especially when it involves the future. The health care marketplace is especially dynamic now, with so many countervailing, unmeasured (possibly unmeasurable?) forces that prediction becomes little more than speculation. However, some trends are worthy of our attention: The job market for young anesthesiologists has improved, but PGY2 entry has not. Especially worrisome is the waning interest among US medical graduates in our specialty, even though the clinical challenges we face are greater than ever (Figure 3).

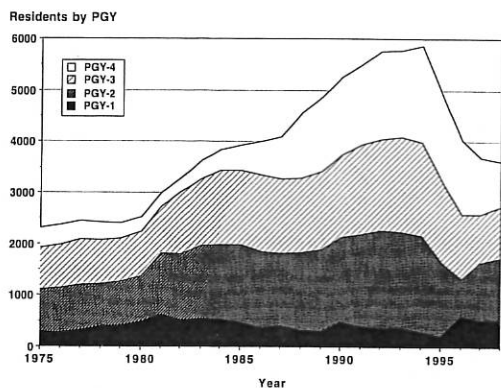
### References

1. Orkin FK: Work force planning in anesthesia care. *Int Anesthesiol Clin* 33(4):69-101, 1995

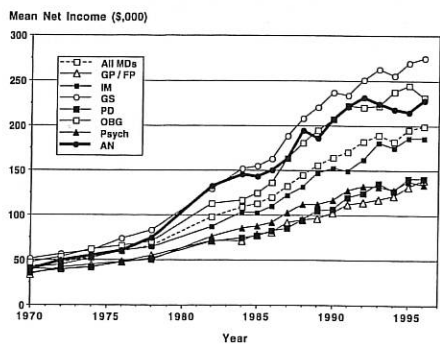
Fredrick K. Orkin, M.D., M.B.A.  
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E-mail: forkin@hes.hmc.psghs.edu

## Invited Article: Manpower Issues in Pediatric Anesthesia

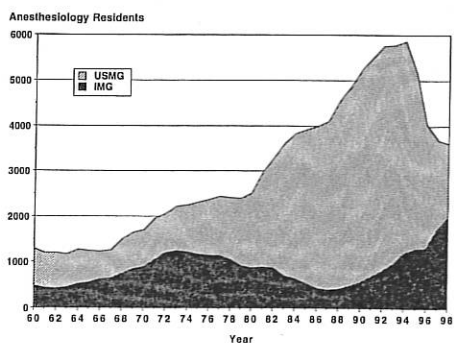
**Figure 1.** Total number of anesthesiology residents by year of training, 1975-98. The first year of postgraduate training (PGY-1) has typically been a year of non-anesthesiology clinical training. PGY-4 was an optional year of clinical anesthesiology or research training until 1988. Source: American Board of Anesthesiology, Raleigh, NC.



**Figure 2.** Mean net income for selected specialties, 1970-96. All MDs = all physicians; GP/FP = general practice/family practice; IM = internal medicine; GS = general surgery; PD = pediatrics; OBG = obstetrics and gynecology; Psych = psychiatry; AN = anesthesiology. No data were collected in 1980. Source: Socioeconomic Characteristics of Medical Practice (multiple editions). Chicago, American Medical Association.



**Figure 3.** Total number of anesthesiology residents, 1960-98. USMG = US medical school graduates; IMG = international medical school graduates. Source: American Board of Anesthesiology, Raleigh, NC.



In order to prepare for the practice of pediatric anesthesiology in the next millennium, a consortium of American pediatric anesthesia organizations (Society for Pediatric Anesthesia, AAP Section on Anesthesiology, ASA Committee on Pediatric Anesthesia, and Study Group on Pediatric Anesthesiology) has been looking at the issues of: 1) patient care facility requirements, 2) the provision of pediatric care by general and pediatric anesthesiology fellowship-trained anesthesiologists, 3) the content of the pediatric anesthesiology fellowship training program, and 4) the anesthesiologist manpower requirements for the practice of pediatric anesthesia. The first three issues have been addressed. The fourth remains to be addressed.

- 1) *What are the patient care facility requirements for the provision of pediatric anesthesia?*
- 2) *Based on the types of care to be provided, is a fellowship-trained anesthesiologist required?* Supported by the consortium, a document entitled, "Guidelines for the Pediatric Perioperative Anesthesia Environment", was prepared by the Committee on Quality Assurance of the AAP Section on Anesthesiology. It has been endorsed by the Academy and will be published in *Pediatrics* in February 1999. The Guidelines address the facility requirements for the provision of pediatric anesthesia. They propose there be a facility policy for pediatric patients designating and categorizing the types of procedures to be performed requiring anesthesia. This policy should be based on the capability of the facility and its medical staff to care for pediatric patients requiring anesthesia. The facility's Department of Anesthesia is to determine the level of anesthesiologist training required, based on the procedures to be performed.
- 3) *How will the pediatric anesthesia training of a general anesthesiologist be differentiated from that of the fellowship-trained pediatric anesthesiologist?* There have been no standard requirements for pediatric anesthesiology fellowship training programs, thus causing confusion between the training of the general anesthesiologist and the fellowship-trained pediatric anesthesiologist. The ACGME, at the request of the consortium, has agreed to accredit pediatric

(Continued on page 14)

## Manpower Issues

(continued from page 13)

anesthesiology fellowship training programs, based on standard requirements for curriculum, faculty, case selection and volume, and fellowship training duration.

- 4) *What will the manpower requirements be?* The actions noted above will provide a more stable structure for pediatric anesthesia practice in the United States. They will cause changes in the demography of pediatric anesthesia. How will it change and by how much? Unfortunately, the databases required for the answers have not been identified. Preliminary information suggests as many as 5 million children receive anesthesia annually in the United States. The number of hospital facilities, and the numbers of anesthesiologists and nurse anesthetists who provide pediatric anesthesia care, is not known. Based on surveys performed in several regions of the country, the majority of pediatric anesthesia cases are cared for in a small percentage of hospitals. But a large percentage of patient care facilities provide pediatric anesthesia care on an occasional basis in environments that may place the patient (and the anesthesiologist) at increased risk.

Our efforts to obtain meaningful data will continue. The participation in this endeavor of anesthesiologists who wish to practice pediatric anesthesia is encouraged. Your participation will make a difference in how and where you practice in the 21<sup>st</sup> century.

Al Hackel, M.D.  
Stanford University

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## Literature Reviews

### *Colonoscopy Under General Anesthesia in Children.*

Dillon M, Brown S, Casey W et al. *Pediatrics* Vol. 102 no. 2 August 1998

**Review:** The authors review their experience over a 30 month period performing endoscopies in children using general anesthesia in an endoscopy suite adjacent to the Operating Rooms. 112 patients underwent 136 colonoscopies during this time. Although no specifics are provided regarding the anesthetic agents or techniques used, the article states that there were no episodes of low oxygen saturation during the procedures, that the average anesthesia time was 42 minutes and that all patients were ready for discharge within 40 minutes. Stewards recovery score was used to assess readiness for PACU discharge. The authors allude to anecdotal reports which imply the possibility of increased complication rates during this procedure in anesthetized children, but in this paper on more than one occasion state that the few complications encountered in this series are in line with what is generally reported. The authors conclude that this procedure is done safely, without the risks inherent in sedation and without the emotional trauma to the children encountered with sedation.

**Commentary:** This paper is authored by pediatricians, not anesthesiologists but the authors conclusions agree with my experience. I am convinced that the child's experience is better AND safer for many procedures such as colonoscopy when an anesthesiologist is involved. I would be interested to know patient and parental opinions regarding their experiences with this procedure when either sedation or general anesthesia is used. Once logistical issues are resolved, it is likely that many pediatric specialists will be consulting anesthesiologists to care for their patients during procedures just as the surgeons do for theirs.

Reviewer: Thomas J. Mancuso, M.D.  
Children's Hospital, Boston

*Continuous Intravenous Terbutaline for Pediatric Status Asthmaticus.* Stephanopolus, DE, Monge R, Schell K et al. *Critical Care Medicine* Vol. 26, No. 10

**Review:** This article is a retrospective report of the clinical effects of IV terbutaline in 18 children, 2- 17 years of age, with status asthmaticus who failed emergency room treatment. ER treatment consisted of aerosolized albuterol, ipratropium IV methylprednisolone in all children and in some IV aminophylline was also given. When the IV terbutaline was begun, albuterol administration was discontinued. Terbutaline was begun at 0.05 mcg/kg/min and increased to a maximum of 10 mcg/kg/min until there was evidence on PE that bronchospasm had decreased. IV epinephrine infusions were used in children who developed lower than normal for age diastolic blood pressures.

IV terbutaline, a selective Beta-2 agonist was used by the authors to replace aerosolized albuterol, another selective Beta-2 agonist because the authors speculated that part of the reason for albuterol ineffectiveness was due to the mode of delivery. The authors monitored the patients for clinical side effects such as muscle twitching and also monitored the ECG, serum CPK-MB fraction and potassium.

The authors conclude that IV terbutaline was well tolerated at the doses used and for durations of up to 305 hours. CPK-MB fractions were increased above normal in some patients but these elevation did not correlate with the doses of either terbutaline used. Terbutaline did lower diastolic blood pressure at doses of 0.4 - 1.0 mcg/kg/min which was treated with epinephrine. At doses above 2.0 mcg/kg/min epinephrine was not needed to maintain diastolic blood pressure.

**Commentary:** Although the authors do not specifically state that the children treated with IV terbutaline in this study demonstrated marked improvement in their condition, it is difficult not to conclude that the treatment provided some relief of bronchospasm. This mode of therapy might be useful for intra operative wheezing in known asthmatics given the difficulty of delivering nebulized medications to intubated patients, especially those who are in the lateral or prone positions. While I am not advocating IV terbutaline as the initial treatment for intra operative wheezing, this paper at least provides some guidelines for its use. I think that an IV agent certainly has some advantages over inhaled bronchodilators in some situations.

*Reviewer: Thomas J. Mancuso, M.D.  
Children's Hospital, Boston*

*Postdural puncture headache and transient neurologic symptoms in children after spinal anaesthesia using cutting and pencil point paediatric needles.* Kokki H, Hendolin H, and Turunen M. *Acta Anaesthesiologica Scandinavica* 1998; 42: 1076-1082

**Review:** The authors of this study set out to compare the clinical utility and characteristics of postdural puncture headache in children who have spinal anesthetics. 200 children aged 2-128 months were studied in an open randomized prospective fashion. Four different needles were used, 2 cutting and 2 pencil point. Two of the authors performed all the spinals themselves. The spinals were done at the lower lumbar interspaces with the children in the lateral decubitus position. Introducer needles were not used, and the children similarly pre medicated. Parents kept a diary (headache, vomiting, muscle weakness, neck stiffness, back pain, vertigo) at home and non responders were contacted by phone. Spinal puncture was successful in 1 or 2 attempts 96% of children. One hundred, ninety-nine of the parental diaries were returned. 17 (9%) of the children developed headache, 10 (5%) of which were classified as postdural puncture headache.

Using a three point scale of mild, moderate and severe, 8 headaches were mild and 2 moderate and none of the children required a blood patch. Three of the children who developed PDPH had spinals with a pencil point needle while the remaining 7 had spinals with one of the two cutting point needles. Ten children developed low back pain, 2-3 in each of the four groups. There were three children with transient leg pain and tingling which resolved completely with no treatment. Among the conclusions reported by the authors are the following: Spinal anesthesia can be used in pediatric day-case surgery with high success rates. All four needles can be used with high rates of success. PDPH occurs in approximately 5% of children, an incidence similar to that seen in adults but the headaches appear to be less severe.

**Commentary:** This series of 200 children who underwent spinal anesthesia provides very useful data on the clinical course, success rate and complication rate for this procedure in the pediatric age group. Since so much depend upon the operator in studies such as this, it is fortunate that there were only 2 experienced people who performed all the spinals. The return rate (199 out of 200) on the parental diaries is nothing short of amazing and I expect that the data obtained therein is accurate.

*Reviewer: Thomas J. Mancuso, M.D.  
Children's Hospital, Boston*

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# HCFA Alert

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March 25, 1998

Nancy-Ann Min DeParle  
Administrator  
Health Care Financing Administration  
ATTN: HCFA-3745-P  
P.O. Box 7517  
Baltimore, MD 21207-0517

Dear Ms. DeParle:

The Society for Pediatric Anesthesia is the largest organization in the United States representing anesthesiologists who care for children. We currently have as members approximately 1,700 physicians, plus more than two thousand additional anesthesiologists-in-training. As the leaders of the Society for Pediatric Anesthesia, we wish to speak clearly and forcefully against the HCFA proposal to allow nurse anesthetists to practice without supervision.

*Why should America's children be targeted to receive second class anesthetic care from unsupervised nurses?* We think this would represent a decrement in the care of children nationwide. Our most disadvantaged and underprivileged pediatric patients would be made further vulnerable to less than optimal care. Whereas some nurse anesthetists suggest that they may be able to practice independently, it is highly unlikely that the same degree of care would be delivered as that which would be provided from a physician anesthesiologist - particularly one with specialty training in pediatrics - or a nurse supervised by an anesthesiologist.

Recent statistics support the above premise. Despite what many nurse anesthetists would suggest, physician anesthesiologists administer or supervise at least 90% of the anesthetics in this country. Anesthesia-related adverse events have decreased enormously over the past twenty years under the present conditions requiring physician supervision. Undoubtedly, the present system of an anesthesia team, led by a physician, has contributed to this decrease in anesthesia-related problems.

*On a global perspective, this is not an economic issue.* Medicare and Medicaid reimbursement is the same for anesthesia whether performed by an anesthesiologist, a nurse anesthetist, or a combination of the two. Therefore, it is inconceivable that the care of children will be improved either from a cost-effective standpoint or from a quality assurance standpoint by eliminating physician supervision. Rather, the proposal to eliminate physician supervision will only serve to enhance the risk of adverse perioperative events (without increasing the benefits) in a population of patients that are vulnerable to a greater degree than adults.

In summary, we believe the idea that nurse anesthetists can provide the same quality of anesthesia care as physician anesthesiologists is WRONG and is, in reality, undeserving of discussion. However, the issue has been raised by the American Association of Nurse Anesthetists (AANA). Furthermore, the information the AANA is disseminating is misleading to both the public and Congress. This information should not be used to convince HCFA to eliminate physician supervision of patients. We believe this proposal, if passed, would have a profound negative impact on the safety of millions of American infants and children who need anesthesia.

*We feel strongly that accepting a proposal to eliminate physician care of infants and children is authorizing a degree of second class care for disadvantaged pediatric patients and should be recognized as such.* As the Officers and Directors of the Society for Pediatric Anesthesia, we urge HCFA to reject the notion of independent practitioner status for nurse anesthetists and maintain the current policy mandating physician supervision of all anesthesia care provided to children.

Sincerely,

Mark A Rockoff, M. D.  
President  
(for the Officers and Directors of the Society for Pediatric Anesthesia)



# Pediatric Anesthesiology

February 18-21, 1999



The Desert Inn  
Las Vegas, Nevada

Presented by the  
Society for Pediatric Anesthesia and  
the American Academy of Pediatrics -  
Section on Anesthesiology

## Meeting Notice

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of The Society for Education in Anesthesia and the Society for Pediatric Anesthesia. The Society for Education in Anesthesia is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

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- J. Christian Abajian, MD**  
Fletcher Allen Health Care  
Williston, VT
- Rita Agarwal, MD**  
Children's Hospital  
Denver, CO
- Corrie T.M. Anderson, MD**  
UCLA Children's Hospital  
Los Angeles, CA
- Steve M. Auden, MD**  
Kosair Children's Hospital  
Louisville, KY
- Ann G. Bailey, MD**  
University of North Carolina  
Chapel Hill, NC
- Dorothy Becker, MD**  
University of Pittsburgh  
Pittsburgh, PA
- Ruth E. Bennie, MD**  
Riley Children's Hospital  
Indianapolis, IN
- Frederic A. Berry, MD**  
UVA Health Sciences Center  
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- D. Ryan Cook, MD, MBA**  
Children's Hospital  
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- Scott D. Cook-Sather, MD**  
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- Charles J. Coté, MD**  
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- Romulo M. Cuy, MD**  
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- Patricia J. Davidson, MD**  
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Medical Information Technologies, Inc.  
Columbia, MO
- Myron Yaster, MD**  
Johns Hopkins Hospital  
Baltimore, MD

# Scientific Program

## Thursday, February 18, 1999

1:00 - 5:00 pm	Meeting, Executive Committee, AAP, Section on Anesthesiology
3:00 - 7:00 pm	Meeting, Board of Directors - SPA
3:00 - 6:00 pm	Early Registration
6:00 - 8:00 pm	Welcome Reception

## Friday, February 19, 1999

7:00 - 7:50am	Continental Breakfast with Exhibitors
7:50 - 8:00am	Welcome Steven C. Hall, MD, Lynda J. Means, MD
8:00 - 10:30am	<b>SCARY ANESTHETICS</b> Moderator: Steven C. Hall, MD
8:00	<i>The Worst Ventilation Dilemmas</i> Ira Landsman, MD
8:30	<i>The Worst Environment</i> Robert Holzman, MD
9:00	<i>The Worst Neonate</i> David J. Steward, MB
9:30	<i>Third World Anesthesia</i> Quentin A. Fisher, MD
10:00	Questions & Discussion
10:30 - 11:00am	Break / Exhibits / Scientific Posters
11:00am - 1:00pm	<b>ORAL ABSTRACT PRESENTATIONS</b> Moderators: Anne M. Lynn, MD, James P. Viney, MD, Joseph R. Tobin, MD
1:00 - 2:15pm	Lunch with Exhibitors
1:00 - 2:15pm	AAP Business Meeting
2:15 - 3:45pm	<b>GENERAL SESSION</b> Moderator: Peter J. Davis, MD
2:15	<i>Anesthesia Outcomes: Quality of Care and Anesthesia Providers</i> Jeffrey H. Silber, MD
2:45	Questions & Discussion
3:00	<i>Negotiations and Contracts</i> Steven I. Kern, Esq.
3:30	Questions & Discussion
4:00 - 6:00pm	<b>WORKSHOPS</b> (see Workshop Registration Form)
4:00 - 6:00pm	<b>REFRESHER COURSES</b> <ul style="list-style-type: none"><li>• <i>Non-cardiac Anesthesia in the Patient with Cardiac Disease</i> Susan C. Nicolson, MD</li><li>• <i>The Ex-Premie</i> Charles Dean Kurth, MD</li><li>• <i>NPO and Perioperative Fluid Management</i> Frederic A. Berry, MD</li></ul>
6:00 - 7:00 pm	Wine and Cheese Reception with Exhibitors



# Scientific Program

## Saturday, February 20, 1999

- 7:00 - 8:00am Continental Breakfast at the Posters
- 8:00 - 9:30am **ORAL ABSTRACT PRESENTATIONS**  
Moderators: Rita Agarwal, MD, Frederic A. Berry, MD,
- 8:00 - 9:30am **POSTER DISCUSSION PRESENTATIONS**  
Moderators: Susan C. Nicolson, MD, James M. Steven, MD, James P. Viney, MD
- 9:30 - 10:00am Break / Exhibits / Scientific Posters
- 10:00 - 10:45am Awards Presentation  
Moderator: Patricia J. Davidson, MD
- 10:45 - 11:30am **STRESS MANAGEMENT**  
Pamela M. Pettinati, MD, MPH, PhD  
Questions & Discussion
- 11:30
- 12:00 - 2:00pm **WORKSHOPS** (see Workshop Registration Form)
- 2:00 - 5:00pm **REFRESHER COURSES**
- *Preoperative Evaluation and Preparation of the Pediatric Patient for Anesthesia*  
Ann G. Bailey, MD
  - *The Difficult Pediatric Airway*  
Ruth E. Bennie, MD
  - *Anesthesia Outside the OR*  
Steven C. Hall, M.D.

## Sunday, February 21, 1999

- 7:00 - 7:30am The Baxter Breakfast
- 7:30 - 8:15am **PAIN MANAGEMENT AND ALTERNATIVE MEDICINE**  
Moderator: Frank McGowan, MD  
*Holistic Remedies for Pediatric Pain — Are You Doing Them Already?*  
Yuan-Chi Lin, MD  
Questions and Discussion
- 8:15
- 8:30 - 9:45am **CO-EXISTING DISEASES**  
Moderator: Anne M. Lynn, MD
- 8:30 *What's New in Seizure Disorder Management?*  
Adre DuPlessis, MD
- 9:00 *What's New in Diabetes Management?*  
Dorothy Becker, MD  
Questions & Discussion
- 9:30
- 9:45 - 10:00am Break
- 10:00 - 10:45am **PRO / CON: Do We Need Halothane?**  
Moderator: James P. Viney, MD  
Pro: Charles J. Coté, MD  
Con: Peter J. Davis, MD  
Questions & Discussion
- 10:45
- 11:00 - 12:00n **PEDIATRIC ANESTHESIA JEOPARDY**  
Moderator: Frank McGowan, MD  
Patricia J. Davidson, MD, Lynne R. Ferrari, MD, James M. Steven, MD, Myron Yaster, MD
- 12:00n Adjourn

# Learning Objectives

Upon completion of this Program, the attendee will be able to ...

## Primary Objectives

- Review and expand current knowledge of pediatric perioperative practices.
- Introduce and incorporate new information and techniques from anesthesiology, surgery, and pediatric medicine.
- Facilitate the exchange of didactic and practical information between practitioners who care for pediatric patients in the perioperative period.

## Secondary Objectives

### Scary Anesthetics

#### Worst Ventilation Dilemmas

- Understand predisposing pathophysiology that leads to airway compromise.
- Describe conditions throughout the respiratory tree that leads to impaired gas exchange.
- Relate techniques to employ when confronted with difficult airways.

#### Worst Environment

- Understand the critical differences between war surgery and civilian trauma.
- Recognize the extent to which children incur war-related injuries.
- Describe three or more different types of war injuries.

#### Worst Neonate

- Recognize common perioperative issues that must be addressed when caring for critically ill neonates.
- Identify specialized equipment useful in the anesthesia management of small infants.
- Describe common anesthesia management techniques for critically ill neonates.

#### Third World Anesthesia

- Identify anesthesia equipment and techniques that are commonly employed in third world countries.
- Learn relevant issues when organizing trips to perform anesthesia in third world countries.
- Understand the necessity for alternative solutions to those typically employed for common anesthesia side effects and misadventures given the limitations of providing anesthesia in third world countries.

### Anesthesia Outcomes: Quality of Care and Anesthesia Providers

- Evaluate data that assesses quality of care found among different anesthesia providers.
- Develop strategies that effectively when advocating for quality anesthesia care for infants and children.

### Negotiations and Contracts

- Recognize different negotiation styles.
- Identify successful strategies to employ when negotiating contracts.
- Understand common pitfalls when negotiating medical contracts.

## Refresher Courses

### Noncardiac Anesthesia in the Patient with Cardiac Disease

- Discuss pathophysiological principles relevant to the management of children with congenital heart disease.
- Develop strategies for the anesthesia management of children with cardiac disease for non-cardiac surgery.

### The Ex-Premie

- Recognize infants who are at risk for perioperative mishaps related to premature birth.
- Develop strategies for the perioperative anesthesia management of former preterm infants.

### NPO and Perioperative Fluid Management

- Discuss current literature that evaluates NPO duration for infants and children.
- Develop strategies for the administration of crystalloid and colloid solutions in the perioperative period.

### Preoperative Evaluation and Preparation of the Pediatric Patient for Anesthesia

- Identify common co-existing diseases that impact on the anesthesia management of children.
- Develop perioperative interventions for children with co-existing disease to decrease adverse outcomes related to anesthesia.

### The Difficult Pediatric Airway

- Evaluate the relevant anatomy of the child with the potential difficult airway.
- Identify several different strategies for management of the difficult airway and discuss the risk and benefits of each.
- Describe equipment for management of the difficult airway.

### Anesthesia Outside the OR

- Identify potential hazards and pitfalls when providing anesthesia outside the OR.
- Describe unique equipment and techniques adaptations necessary for the non-OR anesthesia environment.

## Stress Management

- Understand the scientific basis for the mind body connection.
- Identify stress reduction techniques that can be applied to improve one's own health.



### **Pain Management and Alternative Medicine**

- Relate current clinical and basic science research in complimentary medicine.
- Understand how complementary therapies are being integrated into allopathic medicine.

### **Co-Existing Diseases**

#### **What's New Seizure Disorder Management**

- Identify the newer anticonvulsant agents and their potential side effects which may impact perioperative anesthesia management.
- Recognize new strategies in seizure control including pharmacological and surgical techniques.

#### **What's New in Diabetes Management**

- Understand new issues in monitoring and controlling blood glucose in children with diabetes.
- Identify different perioperative insulin administration strategies and their potential risk and benefits.

### **Pro / Con: Do We need Halothane?**

- Understand the different pharmacological properties between halothane and other inhaled anesthetic agents.
- Relate the potential financial implications among various inhalation agents.
- Identify different physiological effects between halothane and other inhaled agents.

## **Workshop Descriptions / Objectives**

### **Airway Management**

- Use fiberoptic, lightwand, and laryngeal mask airway techniques and understand their indications, contraindications, and potential complications.

### **Computers and Information Access in the Practice of Anesthesia**

- Describe and access relevant anesthesia resources that are available via the participant's personal computer and the Internet.

### **Mind/Body Connection and Stress Reduction Techniques**

- Identify and practice stress reduction techniques that are applicable to improving the participant's own health.

### **Anesthesia Department Management: Faculty Development and Productivity Issues**

- Understand issues relating to administration and management of anesthesia departments and personnel, particularly as they relate to the challenges of the current medical environment.

### **Pain Management**

- Relate the uses, contraindications, and complications of a variety of regional anesthetic techniques, including caudal, axillary, epidural, and other upper and lower extremity blocks, and be able to manage pain in the neonate.
- Organize and administer a Pediatric Pain Treatment Service, including protocols, billing procedures, and quality assurance issues.

### **Invigorating My Career: What Are My Options?** (This workshop is an overview of more detailed workshops to be presented.)

- Discuss issues which lead to professional burnout.
- Understand strategies which may improve career satisfaction.
- Understand how behavioral tendencies impact stress levels in the workplace environment.

### **Strategies for Physician Resilience and Renewal**

- Discuss issues which lead to professional burnout.
- Gain first hand information on advanced degree, extracurricular and volunteer options.
- Create a personal strategy for reinvigorating one's professional career.

### **Leadership Skills for a Changing World**

- Identify potentially useful time management and organizational skills.
- Describe and practice conflict resolution and negotiation strategies.

### **Do You Really Need to Change Jobs or Can the Situation be Saved?**

- Relate personal behavioral tendencies and adult developmental stages to current workplace conditions.
- Define and understand the nature and dynamics of the participant's work environment.
- Identify strategies that help both superiors and staff better understand the participant's needs.

### **Pediatric CPR/Intraosseous Infusions**

- Explain and apply selected pediatric critical care methods, including cardiopulmonary resuscitation, intraosseous infusion, and management of ventilation.

# Workshop Registration

	1st Choice	2nd Choice	3rd Choice	4th Choice	Cost (\$)
Session I Friday, February 19 4:00pm - 5:00pm	_____	_____	_____	_____	_____
Session II Friday, February 19 5:00pm - 6:00pm	_____	_____	_____	_____	_____
Session III Saturday, February 20 12 noon - 1:00pm	_____	_____	_____	_____	_____
Session III Saturday, February 20 1:00pm - 2:00pm	_____	_____	_____	_____	_____

Workshop Total \$ \_\_\_\_\_

Shaded areas reflect 2 hour workshops. Please note that 1 and 2 hour workshop prices are different. One hour workshop prices are \$30 and Two hour workshop prices are \$50. Figure your workshop cost based on your first choice selection, any difference in price will either be billed or refunded at the time of confirmation.

Enter the above workshop total to the reverse side of this registration form.

Session I • Friday, February 19 • 4:00pm - 5:00 pm							
A1	A2	A3	A4	A5	A6	A7	A8
\$50	\$50	\$50	\$50	\$30	\$30	\$30	\$30
(2hr)	(2hr)	(2hr)	(2hr)	(1hr)	(1hr)	(1hr)	(1hr)

Session II • Friday, February 19 • 5:00pm - 6:00 pm							
A1	A2	A3	A4	B5	B6	B7	B8
Cont.	Cont.	Cont.	Cont.	\$30	\$30	\$30	\$30
				(1hr)	(1hr)	(1hr)	(1hr)

Session III • Saturday, February 20 • 12 noon - 1:00 pm							
C1	C2	C3	C4	C5	C6	C7	C8
\$50	\$50	\$50	\$50	\$30	\$30	\$30	\$30
(2hr)	(2hr)	(2hr)	(2hr)	(1hr)	(1hr)	(1hr)	(1hr)

Session IV • Saturday, February 20 • 1:00pm - 2:00 pm							
C1	C2	C3	C4	D5	D6	D7	D8
Cont.	Cont.	Cont.	Cont.	\$30	\$30	\$30	\$30
				(1hr)	(1hr)	(1hr)	(1hr)

1 hour workshops = \$30.00; 2 hour workshops = \$50.00

## Workshop Selections

### Friday, February 19, 1999

- A1) LMA Lightwands - 2 hrs
- A2) Fiberoptic Technique - 2 hrs
- A3) Invigorating my Career - 2 hrs
- A4) Anesthesia Department Management - 2hrs
- A5) Ped CPR and Intraosseus Infusions - 1hr
- A6) Common Blocks - 1hr
- A7) Upper Extremity Blocks - 1hr
- A8) Computer & Info Access - 1hr
- B5) Pain Service - Academic/Private - 1hr
- B6) Managing the Epidural Space - 1hr
- B7) Lower Extremity Blocks - 1hr
- B8) Neonatal Pain Management - 1hr

### Saturday, February 20, 1999

- C1) LMA Lightwands - 2 hrs
- C2) Fiberoptic Technique - 2 hrs
- C3) Leadership Skills for a Changing World - 2 hrs
- C4) Do You Really Need to Change Jobs? - 2hrs
- C5) Spinal Anesthesia - 1hr
- C6) Options for Physicians Renewal- 1hr
- C7) Upper Extremity Blocks - 1hr
- C8) Computer & Info Access - 1hr
- D5) Ped CPR and Intraosseus Infusions - 1hr
- D6) Managing the Epidural Space - 1hr
- D7) Lower Extremity Blocks - 1hr
- D8) Acupuncture - 1hr

# Scientific Program Registration

## Pediatric Anesthesiology 1999

February 18-21, 1999

If paying by check, please make checks payable to SPA and mail to: P.O. Box 11086, Richmond, VA 23230-1086; Phone: (804) 282-9780; Fax: (804) 282-0090

Please print or type

Name \_\_\_\_\_  
Last First MI

Preferred Mailing Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Office Phone \_\_\_\_\_ Home Phone \_\_\_\_\_ Fax # \_\_\_\_\_

Accompanying Person(s) Name(s) \_\_\_\_\_

	Through 1/8/99	After 1/8/99	= \$
<input type="checkbox"/> SPA Member .....	\$325	\$375	= \$ _____
<input type="checkbox"/> AAP Section on Anesthesiology Member .....	\$325	\$375	= \$ _____
<input type="checkbox"/> Non-Member - US & Canada (MD, DO, PhD, CRNA, RN, etc.)	\$425 <sup>1</sup>	\$475 <sup>1</sup>	= \$ _____
<input type="checkbox"/> Non-Member - International .....	\$375 <sup>3</sup>	\$425 <sup>3</sup>	= \$ _____
<input type="checkbox"/> Resident/Fellow * .....	\$160	\$185	= \$ _____
<input type="checkbox"/> Resident/Fellow (Non-Member) .....	\$230 <sup>2</sup>	\$255 <sup>2</sup>	= \$ _____
<input type="checkbox"/> Workshops (Complete Workshop Registration and Enter Total Amount from that section)			= \$ _____
<input type="checkbox"/> Saturday Dinner .....	\$ 60	\$ 70	= \$ _____
<input type="checkbox"/> Saturday Special Childrens Buffet .....	\$ 15	\$ 15	= \$ _____
<input type="checkbox"/> Accompanying Person(s) # _____ @ .....	\$ 35	\$ 50	= \$ _____
<input type="checkbox"/> SPA Educational/Research Fund Donation <sup>‡</sup>			= \$ _____
	<b>Annual Meeting Total</b>		= \$ _____

(Fee includes: Entrance to Exhibit Hall, Welcome Reception, Continental Breakfasts and Wine & Cheese Reception. Saturday dinner is additional.)

<sup>‡</sup>The SPA is a 501(c)(3) organization and your donations are tax deductible as allowed by law. All voluntary contributions will be acknowledged.

\*When accompanied by a letter from Department Chairperson, verifying Resident/Fellow status.

<sup>1</sup>\$100.00 may be applied towards Active Membership of SPA.

<sup>2</sup>\$70.00 may be applied towards Resident Membership of SPA. (Includes membership in IARS, SCA and SAMBA)

<sup>3</sup>\$50.00 may be applied towards International Membership of SPA.

If applying for Membership, please complete Membership Application (on the reverse side) and forward with this Registration Form to:

SPA, P.O. Box 11086, Richmond, VA 23230-1086  
(Credit Card payments may be faxed to 804-282-0090.)

Personal Check     VISA     MasterCard     American Express

Card No \_\_\_\_\_ Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_ Printed Name on Card \_\_\_\_\_

**Refund Policy:** For Workshops, Annual Meeting, and Social Events a full refund through 1/8/99; 50% refund from 1/9/99 through 1/15/98; no refunds after 1/15/99. Refund will be determined by date *written* cancellation is received.



# Hotel Reservation Form

## Pediatric Anesthesiology 1999 February 18-21, 1999

Complete this Reservation Form and send Deposit to:

The Desert Inn  
Reservations Department  
3145 Las Vegas Boulevard South  
Las Vegas, NV 89109  
Phone: (702) 733-4444 • Fax (702) 733-4676

Please print or type

Name \_\_\_\_\_  
Last First MI

Preferred Mailing Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Office Phone \_\_\_\_\_ Home Phone \_\_\_\_\_ Fax # \_\_\_\_\_

Accompanying Person(s) Name(s) \_\_\_\_\_ Adults \_\_\_\_\_ Children \_\_\_\_\_

Children under 18 are complimentary in the same room with parents.

### Please Reserve

- Deluxe ..... \$215
- Superior ..... \$265
- Mini ..... \$350
- 1 Bedroom Suite ..... \$450

### Occupancy

- Single
- Double
- Triple (\$35 additional charge)

All rates quoted are exclusive of state/local tax, currently 9%.

- Non Smoking
- Smoking
- 2 Queens
- King (Based on availability)

Special Requests: \_\_\_\_\_

My Arrival Date is: \_\_\_\_\_ Arrival Time: \_\_\_\_\_

My Departure Date is: \_\_\_\_\_ Departure Time: \_\_\_\_\_

Check in time is 4:00pm, check out time is 12 noon.

In order to guarantee your reservation, please include the first night's deposit.

Enclosed is my check in the amount of \$ \_\_\_\_\_.

Please charge first night's deposit to my  VISA  MasterCard  American Express  Diners Club  Carte Blanche

Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_ Name Printed on Card \_\_\_\_\_

Reservations must be received 30 days prior to arrival or the Desert Inn cannot guarantee room availability. Please be advised that your credit card will be charged for the first night's room and tax upon receipt.

## Cut-off date: January 21, 1999

All rooms are subject to availability

## Travel Arrangements

**Association Travel Concepts (ATC)** has been selected as the official travel agency for the Society for Pediatric Anesthesia's 1999 Winter Meeting, Pediatric Anesthesiology, February 18-21, 1999 at The Desert Inn, Las Vegas, NV.

By calling ATC, you will receive a 10-15% off airline tickets purchased more than 60 days prior to your travel dates or 5-10% for tickets purchased less than 60 days prior to the convention.

ATC offers the lowest available fares on ANY airline traveling to Las Vegas; advance seat assignments; special advance meal requests on airline flights; frequent flier programs; electronic ticketing; and Email access for convenient booking of your tickets.

To take advantage of these great rates contact Association Travel Concepts: **Phone: 1-800-458-9383; Email: assntravel@aol.com; or fax (619) 581-3988.** ATC is available 6:00 am - 5:30 pm PST Monday through Friday.

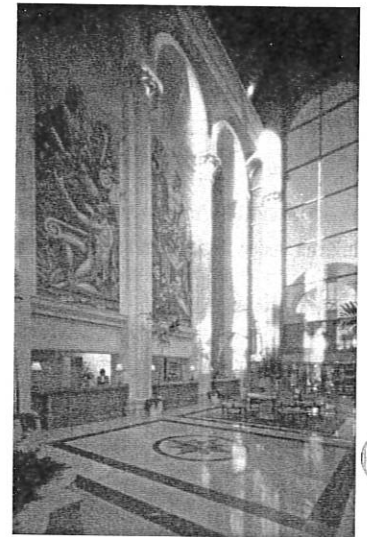
## Resort Accommodations

The Desert Inn Resort & Casino offers an array of luxurious accommodations for the discriminating guest featuring multilingual, five star-five diamond, trained staff.

Standard guest room amenities include: color television with remote control and cable stations; AM/FM radio; hair dryer; refrigerator; iron and board; telephone with voice mail message service and dataport access; upgraded linens and bath amenities.

Our 715-room/luxury resort is composed of five buildings surrounding our exquisitely landscaped lagoon-style swimming pool. Elegantly appointed guest rooms including deluxe, superior, mini-suites, lanai suites, garden suites, penthouse suites and case suites range in size from 406 square feet to 9,300 square feet. Buildings are named for the convenience of our guests: Villas del Lago; The Palms; St. Andrews; Augusta; and Wimbledon.

The remaining inventory of accommodations is comprised of a variety of suite products. From 815 square feet, to a tremendous 10,000 square feet, we have a suite for every occasion. In addition to the lavish decor and amenities, butler service may be arranged for a truly pampered experience.



## Desert Inn Restaurants

### HoWan

Intimate authentic Chinese and Hong Kong style dining featuring Mandarin, Cantonese and Szechwan delicacies.

### Monte Carlo

The only recipient in Las Vegas of the prestigious Mobil Four Star Award for dining excellence. Notable for the finest French gourmet cuisine. Offers a gracious ambience reminiscent of the charm and romance of the world-famous Cote d'Azur.

### Portofino

Superb dining offering tableside service, a candle-lit atmosphere, and a grand view of our casino area. Offering Northern Italian and Mediterranean cuisine.

### Pool Bar & Grill

As you bask in the desert sun and walk along our sandy beaches, enjoy specialties from our poolside grill. Offering traditional club sandwiches to our exotic swordfish sandwich; and an array of specialty salads and burgers. For dessert, you can make your own sundaes at our selfserve soft ice cream bar with all the extras.

### Terrace Pointe

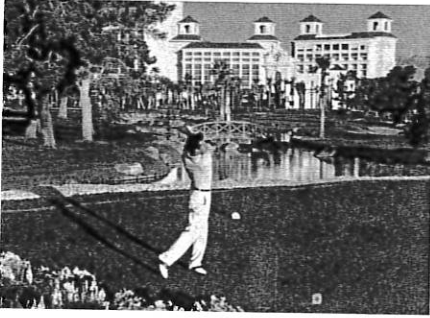
The Desert Inn's 24-hour dining area with a panoramic view of our pool lagoon area. Featuring American/Continental cuisine and specialty selections from the Far East. Both, the buffet and a la carte menu selections, are available for breakfast and lunch. A la carte menu for dinner.

### Country Club Deli

Located adjacent to our infamous championship golf course, our deli is available for everyone to enjoy. For the golfers who are beginning their challenge on the course or just finishing, to the spectator who wants to just take part in a country club setting.

## Childcare

Childcare services can be arranged through the Concierge at (702) 733-4498.

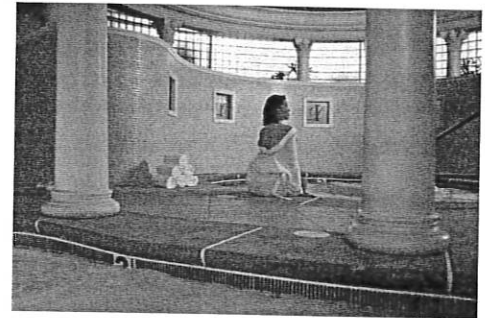


## Golf

With Crenshaw bent grass greens (proven the premier putting surfaces ever for highdesert golf) and an elaborate system of lakes and waterfalls, the Desert Inn course, honored annually by *GolfDigest* as one of its top 75 resort courses, is the **only** course on the Las Vegas Strip. Designed by Lawrence Hughes, you'll feel like you're walking in the inner sanctum of tranquility and recreation. When you play at The Desert Inn Golf Club, you'll see why all three professional tours (PGA, LPGA, and Senior PGA) have chosen us to host their tournaments. The course offers four distinct tees to accommodate all skill levels, but for those who like to match themselves against the best, the 7000+ yard, 72 par gold tees are the ticket.

## World Class Spa

Pressure has never felt so good. With the hands of master therapists, you can relax, unwind and socialize at the finest and largest spa in Las Vegas. The hotel's European style spa is over 22,000 square feet with dual facilities including soft thick robes, slippers, unending supply of fresh fruit and juices, locker rooms, lounges, showers, loofa/salt glow room, steam room, sauna, therapy pools, private whirlpool, massage and skin treatment salons, and a 2,000 square foot state-of-the-art co-ed fitness center with a panoramic overlook of our championship golf course. All you need to bring is your body, they will do the rest!



## Tennis

Game, Set, Match - Day or Night! Just beyond the backdrop of lakes, trees, and the emerald fairways of the golf course, tennis at The Desert Inn is a top priority. Which is why our five lighted championship tennis courts are available with all the amenities. Clinics are conducted for all skill levels daily. Ball machines and racquet rentals are available.

## Pool

Relax in the Desert Inn's lagoon-style pool featuring sandy beaches, adjacent beach volleyball courts, luxury cabanas, bridges and waterfalls.

## Crystal Showroom

Famous entertainers and fabulous acts grace this intimate showroom. Recently refurbished, this extravagant room seats only 636. Every seat is a great seat! Enjoy an evening in the Crystal Showroom which has a rich history of Las Vegas. Call the hotel conceirge for more information.

## Starlight Lounge

Open six nights a week, the Starlight Lounge seats up to 250 people comfortably and will have a variety of entertainment. Live music, dancing, buffets, televised sporting and special event coverage, to name just a few. You never know who or what you'll see, but we're sure you'll enjoy it! Call the hotel concierge for more information.

## Casino

The luxurious, 32,000 square foot, classical French Riviera theme casino offers a variety of table games and slot machines to suit the diverse international clientele. Blackjack, Dice, Pai Gow, Pai Gow Poker, Roulette, Baccarat, Caribbean Stud Poker, Mini-Baccarat, Let-It-Ride, Keno, and Race & Sports Book, plus more than 500 slot and video machines provide gaming alternatives that will delight the novice and serious player.

## Shopping

The Desert Inn currently offers a sundry gift shop and jewelry store, and offer a variety of specialty stores and boutiques.

# Membership Application



Society for Pediatric Anesthesia  
 1910 Byrd Avenue, Suite 100, P.O. Box 11086, Richmond, VA 23230-1086  
 Phone (804) 282-9780 • Fax (804) 282-0090  
 Email spa@societyhq.com

SPA MEMBERSHIP #: \_\_\_\_\_ PLEASE MAKE MY MEMBERSHIP EFFECTIVE: JANUARY 19\_\_\_\_ OR JULY 19\_\_\_\_.

Name (Last) _____ (First) _____ (MI) _____		<input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Ph.D.
PREFERRED MAILING ADDRESS <input type="checkbox"/> This is my Home Address, <input type="checkbox"/> This is my Business Address		<input type="checkbox"/> CRNA <input type="checkbox"/> Other:
SSN#s _____		
CITY _____	STATE/COUNTRY _____	ZIP/POSTAL CODE _____
OFFICE PHONE _____	FAX _____	EMAIL _____
DATE OF BIRTH _____ Month / Day / Year	TYPE OF PRACTICE <input type="checkbox"/> PRIVATE <input type="checkbox"/> UNIVERSITY <input type="checkbox"/> GOVERNMENT <input type="checkbox"/> OTHER:	
HOSPITAL AFFILIATION _____		
ACADEMIC DEGREES AND OTHER PROFESSIONAL CERTIFICATION W/DATES _____		

**I HEREBY MAKE APPLICATION FOR:**

**ACTIVE MEMBERSHIP (PHYSICIAN)\*:**

- SPA Membership ..... \$100.00
- SPA membership with subscription to ANESTHESIA & ANALGESIA, includes joint membership in IARS ..... \$210.00

**AFFILIATE MEMBERSHIP (NONPHYSICIAN)\*:**

- SPA Membership ..... \$100.00
- SPA membership with subscription to ANESTHESIA & ANALGESIA, includes joint membership in IARS ..... \$210.00

**INTERNATIONAL MEMBERSHIP\*:**

- SPA Membership ..... \$50.00
- SPA membership with subscription to ANESTHESIA & ANALGESIA, includes joint membership in IARS ..... \$160.00

\* For additional information on optional joint membership with the Society of Cardiovascular Anesthesiologists and the Society for Ambulatory Anesthesia contact the IARS office at (216) 642-1124.

**RESIDENT MEMBERSHIP:** Residency Membership Requires Endorsement By Program Director (Please complete the below section on Residency)

- INCLUDES MEMBERSHIP IN SPA, IARS, SCA, AND SAMBA ..... \$70.00

Residency Location \_\_\_\_\_

Residency Completion Date \_\_\_\_\_ Signature of Program Director \_\_\_\_\_

**PAYMENT OPTION:**

Check or Money Order Enclosed (US Funds) Made Payable to SPA, P.O. Box 11086, Richmond, VA 23230-1086.

Charge My Membership Fees to:  AMEX  Master Card  Visa

Card # \_\_\_\_\_ Expiration Date \_\_\_\_\_

Printed Name on Card \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

<b>For Office Use Only:</b>	
Check # _____	
Date: _____	
Member: _____	

- International Members receive the journal by surface air lift at no additional charge. Airmail delivery for overseas subscriptions is available for an additional \$167. Canadian members receive the Journal by 2nd Class Mail. Optional expedited delivery for Canadian subscription is available for an additional \$75. (Please Include this amount when paying dues.)

# 1998 Corporate Meeting Sponsors

The Society for Pediatric Anesthesia acknowledges with deep appreciation the following organizations that have provided educational grants.

Audience Response System  
**Abbott Laboratories**

The Baxter Breakfast  
**Baxter Healthcare**

Cook Critical Care

Nellcor Puritan Bennett

Zeneca Pharmaceuticals, Inc

Astra USA

Augustine Medical, Inc.

Cardio Vascular Dynamics, Inc.

Mallinkrodt

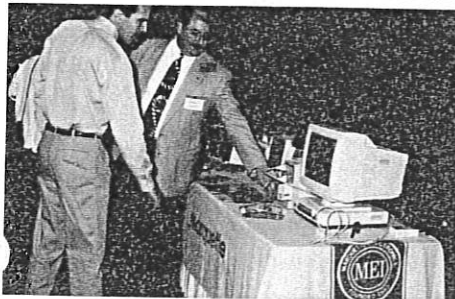
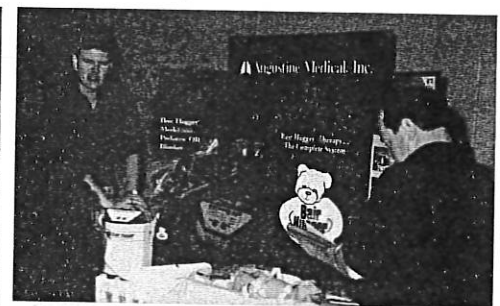
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## Society for Pediatric Anesthesia



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The Society for Pediatric Anesthesia (SPA) was founded in 1987 to promote quality perioperative care for infants and children. Membership in SPA has grown steadily to more than 4000 members. Membership consists of community-based and academic physicians who have an interest in pediatric anesthesia, as well as resident and affiliate members. The goals of SPA include:

1. To advance the practice of pediatric anesthesia through new knowledge
2. To provide educational programs on clinical, scientific, and political issues that are important to pediatric anesthesia practice
3. To promote scientific research in pediatric anesthesia and related disciplines
4. To provide a forum for exchange of ideas and knowledge among practitioners of pediatric anesthesia
5. To support the goals of the American Society of Anesthesiologists and the American Academy of Pediatrics

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