

THE GAS PIPELINE
ANESTHESIA QUARTERLY GAZETTE
Department of Anesthesia, Stanford, CA 94305



Patricia I. Rohrs, Editor, rohrs@stanford.edu

February 2007



PEDIATRIC PALLIATIVE CARE OFFERS HOPE¹
by Patricia Rohrs

Hope is not the conviction that something will turn out well but the certainty that something makes sense, regardless of how it turns out. —Václav Havel²

Unfortunately, children with pain often go unheard, but in some places, including Lucile Packard Children's Hospital, their voices are being lifted.

Whereas end-of-life and hospice care for adults are long-standing fields, in the US comprehensive, pediatric, palliative care for children and adolescents is a relatively new but burgeoning, interdisciplinary area that seeks to “ensure that seriously ill children and their families get the compassionate medical, emotional, and spiritual support they need to hold on to hope—whatever form hope takes—whether it be hope for a cure, a family vacation, time with family and friends, finishing the school year, graduation, or relief of pain and a peaceful death.”³

Many factors distinguish pediatric palliative care: the existence of less professional expertise than in

adult care, the involvement of many disciplines and specialists, the possibility that more than one child in a family is affected, the variable and long time course of some illnesses, and the fact that children undergo many developmental stages.⁴

Over the last six years, Stanford's departments of Anesthesia (Pediatric Pain Management Service under Dr. Elliot Krane) and Pediatrics (Pediatric Palliative Care Program under Dr. Barbara Sourkes and Dr. Lorry Frankel) have been at the forefront of this critical, developing field.

To get some insight into these overlapping areas, I interviewed Julie Good, MD, DABMA, Clinical Assistant Professor of Pediatric Pain and Symptom Management and Palliative Care, who is trained in pediatrics, pediatric pain management, pediatric palliative care, and acupuncture.

Continued on page 2

Pediatric Palliative Care Offers Hope	1
Chairman's Update	5
Teaching Scholars Awards	6
ACGME-Mandated Residency Program Changes	7
Deputy Chief's Column	9
WARC Conference and CSA/WARC Competition	11
Residents and Attendings of the Month	11
Annual Golf Tournament	12
Letters to the Editor	13
Alumni Corner	14
Faculty Corner	15
International Medical Missions	16
Upcoming Events	17
Babies	17
2007-2008 Chief Residents	18

¹ In Part I (November 2006), I wrote about the pediatric pain service team's compassionate, passionate mission to “hear,” alleviate, and manage children's pain and suffering:

http://med.stanford.edu/anesthesia/newsletter/GP_11-06/pediatric.html
http://dying.about.com/od/pediatricnicuhospice/a/children_hospice_2.htm

Accessed 2/18/07

³ Ibid.

⁴ Sourkes B et al. Food, Toys, and Love, *Curr Probl Pediatr Adolesc Health Care*, October 2005, 35; 9:350-386.

PEDIATRIC PALLIATIVE CARE OFFERS HOPE (CONT)

I also went on pediatric pain rounds with Sandy Sentivany-Collins, RN, MS, CNS, a pioneer in this area, who specializes in inpatient pain management and palliative and end-of-life care. Sentivany-Collins' golden retriever, Carly the pain dog was also with us. I observed Sentivany-Collins' careful, compassionate approach to sick kids in various intensive care units, which often includes "a dog fix." See how the two of them work by copying and pasting this link:

<http://www.ktvu.com/video/9626857/detail.html#/index.html>

What is pediatric palliative care?

According to Dr. Good, a common misconception is that palliative care is only for the end of life. In the past, pediatric patients deemed "incurable" were referred to practitioners of spiritual, physical and psychological symptomatology for the last 24–48 hours of life. These patients and their families felt abandoned by their treatment teams, and struggled to connect to new caregivers at a time of crisis.

Today, palliative care pursues a cure, but it also seeks to mitigate the violent physical, emotional, and spiritual impact of a patient's life-limiting or life-threatening disease or condition on the patient and her family. It seeks to improve quality of life as defined by the child and her family members, including siblings. Palliative care begins from the moment of diagnosis— whether at the end of life or much earlier in the illness' trajectory. We focus upon intensively managing pain and other symptoms, and we pursue curative treatments.

Importantly, we also address a patient's existential suffering. For example, western biomedicine may brilliantly cure a disease or fix an injury, but the process of wounding and repair may have broken a child's will to live. Good remembers a young teenaged girl who had survived a severe motor vehicle accident that had claimed the lives of several family members. She lay mute for weeks in her hospital bed, despite regular family visits, warm nursing care, psychiatric

intervention, and attentive psychotherapy, including play therapy. Responding to a tip about the patient's interest in dogs, we brought Carly to her. The response was dramatic: the patient began to talk, which resulted in her being able to grieve her losses and reengage in life.

What kinds of patients do you see?

Good and other pediatric palliative care staff work with children with a broad spectrum of painful illnesses: cancer, incurable organ failures or failures leading to transplantation, HIV disease, cystic fibrosis, muscular dystrophy, neurodegenerative diseases, and brain and spinal cord injury.⁵

How did you get into this field? What keeps you in it?

Good's passion for pediatric palliative care is unmistakable. Trained initially as a pediatrician, she developed her interest in pediatric pain management while in her residency. She and Dr. Yuan-Chi Lin shared a patient, whose back pain and asthma symptoms he was relieving with acupuncture. Subsequently, Good took electives with Sentivany-Collins, and then presented a poster summarizing treatments for CRPS. After becoming a staff physician in Pain Management, Good provided pain management, sedation for whirlpool baths, and dressing changes for a young woman with epidermolysis bullosa (80-90% of the patient's skin was involved with super infection of her underlying painful skin disease). Initially, she refused medications and screamed most of the time. However, Good was able to gain her trust and form a supportive connection that enabled the patient to face and confront the frustrating limits of her congenital illness, and she and her family were able to resolve old hurts and say good-bye by the time she died peacefully two months later. Good felt that the dedication this patient brought out in her doctoring made a difference to the patient and her family;

Continued on page 3

⁵ Ibid.

PEDIATRIC PALLIATIVE CARE OFFERS HOPE (CONT)

while it also infused Dr. Good's work with great personal significance, by showing her how her ongoing presence and support could heal more than physical wounds. Dr. Good realized that her value as a doctor rested upon her own humanness. In effect, patient, family, and physician were healed by the patient-doctor relationship.

What are the barriers to care for these patients?

Dr. Good referred to the article, *Food, Toys, and Love*⁶, that she and others at Stanford had co-authored. The article points out several barriers to comprehensive care for pediatric pain patients:

- the idea that curative and palliative care are separate domains,
- underestimation of pain,
- parental opiophobia,
- lack of familiarity with pediatric symptom management,
- lack of education in the hospice community,
- cultural/ethnic backgrounds, and
- insurers.

What education is Stanford providing?

- **Preclinical and clinical medical students**—Dr. Good teaches *The Healer's Art*, a course that focuses on how the patient is best served not only by *what* the physician knows, but also by *who* the physician is as a human being. Students and faculty explore the core dimensions of meaning, service, and healing that are exemplified by the outstanding physician.
- **Residents and Fellows**—Dr. Good teaches Stanford residents from various disciplines (pediatric, anesthesia, intensivists, oncologists) and pediatric, adult pain, and VA palliative care fellows in different settings:

⁶ Ibid.

pediatric anesthesia rounds, pediatric anesthesia and palliative care rotations, small groups (case-based teaching in PICU), and lectures. She directs the palliative care teaching curriculum for pediatric residents.

- **Fellowship in Pediatric Pain**

Management—The Department of Anesthesia offers an ACGME-accredited fellowship in pediatric pain management (<http://pedsanesthesia.stanford.edu/fellowship/>) Dr. Good pursued this fellowship, as part of her training.

How have Stanford people been involved in advancing this field?

- **1993–4** The pediatric pain management service was established by Dr. Yuan-Chi Lin, MD and Sandy Sentivany-Collins, RN, MS, CNS. Upon Dr. Lin's departure for Harvard, Elliot Krane, MD, was recruited to further develop pediatric anesthesia and the pediatric pain management service.
- **2000–2001** The LPCH-Stanford staff interviewed families and surveyed staff as to how to improve the quality of end-of-life and pediatric palliative care, publishing their results in two articles,^{7, 8} one in 2002 and the other in 2004. These articles highlighted the maelstrom of emotions involved in this field: love, helplessness, hopelessness, despair, anger, compassion, honesty, and hopefulness.

LPCH hired Barbara Sourkes, PhD, Associate Professor of Pediatrics and Psychiatry and Kriewall-Haehl Director, Pediatric Palliative Care Program to found and direct Pediatric Palliative Care.

The Department of Anesthesia hired Dr. Julie Good as its first pediatrician, after she has pursued both a pediatric residency and pediatric pain fellowship at Stanford.

Continued on page 4

⁷ Contro NA, Larson J, Scofield S, Sourkes B, and Cohen HJ. Family Perspectives on the Quality of Pediatric Palliative Care. *Arch Pediatr Adolesc Med.* 2002; 156: 14–19.

⁸ Contro NA, Larson J, Scofield S, Sourkes B, and Cohen HJ. Hospital staff and family perspectives regarding quality of pediatric palliative care. *Pediatrics* 2004; 5(114): 1248–52.

PEDIATRIC PALLIATIVE CARE OFFERS HOPE (CONT)

- **2003** Using the two LPCH studies⁹ as input, the Institute of Medicine of the National Academies (<http://www.iom.edu/>) published its seminal report: *When Children Die: Improving Palliative and End of Life Care for Children and their Families*.
- **2004** George Mark Children's House opened in San Leandro, CA, "the first residential pediatric respite **and** end-of-life program of its kind in the United States."
<http://www.georgemark.org/> LPCH became its partner and refers some of its patients.
- **2005** *Food, Toys, and Love*,¹⁰ written by the LPCH-Stanford team, was published. The article gives a comprehensive overview of the field and describes pediatric palliative care and its practice at LPCH.
- **2006** The Northern California Collaborative for Pediatric Palliative Care¹¹ was formed (LPCH is a member) and AB 1745, the Nick Snow Act, was passed in California.¹² The Act mandates that the California Department of Health Services work with the federal government on a pilot Medi-Cal hospice benefit—to allow children to receive palliative hospice services **and** curative treatments concurrently, without their having to obtain and be limited by a six-month prognosis.

What are the biggest challenges going forward?

The Institute of Medicine Report¹³ recommended strengthening the research base for effective care (quality of life, symptom management, impact on parents, siblings and professional caregivers, bereavement interventions, etc.); improving the organization and delivery of care; reforming the

⁹ Ibid.

¹⁰ Sourkes B et al. op.cit.

¹¹ http://www.georgemark.org/news_BAON_News_08_2006.pdf Accessed February 14, 2007.

¹² <http://dying.about.com/b/a/000156.htm> Accessed February 20, 2007.

¹³ Institute of Medicine. *When Children Die: Improving Palliative and End-of-Life Care for Children and their Families*. Washington DC: National Academy Press; 2003.

financing of palliative services and hospice care; and better preparing health professionals. *Food, Toys, and Love*¹⁴ added this: "As they face the extraordinary challenges of illness, it is our challenge to give them in the words of a 6-year-old child "aliveness"¹⁵ for however long the child's life may last.

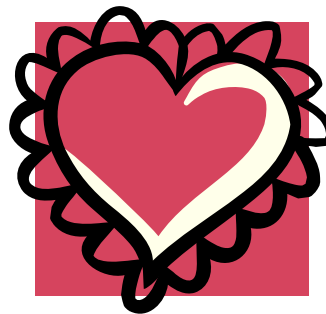
Overall, what message should we convey to Gas Pipeline readers?

Alumni, Attendings, and residents in Anesthesia should be aware that pediatric palliative care exists within LPCH and that current residents and fellow are training in this significant field. We hope readers will appreciate the complexity, impact, and great emotional rewards of this specialty and support its growth.

Hope is not the conviction that something will turn out well but the certainty that something makes sense, regardless of how it turns out. —Václav Havel¹⁶

One patient, Emily K., expressed her hope this way:

...My goal is to counsel and research children with chronic illness and teach medical students about the chronic illness experience. I've been inspired to take this path by the help I received from you and the rest of the pain management team, when I was sick. You cared for the parts of my illness experience that the oncologists ignored—my pain and my life outside of my diagnosis. I have always felt the oncologists had the science to save my life, but you had the compassion to give me my life back. I hope I can thank you for all of this in person the next time I'm in town!



¹⁴ Sourkes B et al. op.cit.

¹⁵ Sourkes B. *Armfuls of Time: The Psychological Experience of the Child with a Life-Threatening Illness*. Pittsburgh, PA: University of Pittsburgh Press; 1995, page 167.

¹⁶ http://dying.about.com/od/pediatricnicuhospice/a/children_hospic_2.htm Accessed 2/18/07

CHAIRMAN'S UPDATE

by Ron Pearl, MD, PhD



In my first column of 2007 I want to highlight how the combination of new facilities, faculty development, high-quality residents, and improved educational programs will present unprecedented opportunities for Stanford's Department of Anesthesia to advance all of its missions.

New Ambulatory Surgery Center (ASC)—

Opened this month, the new ASC on the Stanford campus is the largest in the nation with twelve, large operating rooms designed to incorporate endoscopic procedures and modern information technology; two large treatment rooms; and an interventional radiology complex. Originally planned 15 years ago, several barriers delayed the ASC's actual construction: the City of Palo Alto's approval process, obtaining funding during the hospital crisis years of the late 1990s (reimbursement from managed care in California had decreased), and then uncertainties regarding whether academic medical centers could attract patients requiring ambulatory (as opposed to life-saving) surgery. Built almost 50 years ago, the old ASC was the only operating room suite at that time. As someone who trained at Stanford in the old facility, I can attest that the new, state-of-the-art ASC has brought us into the 21st century.

Even as we open the new ASC, however, because the hospital has enjoyed record, operating-profit margins and record surgical volume, we already need additional block time beyond the current capability.

Other planned expansion—Lessons learned as we overcame obstacles to create the new ASC should help us plan for new hospital and medical school buildings that will completely revamp our clinical, educational, and research facilities. In two years, we will open new operating rooms at Lucile Packard Children's Hospital and at our new ambulatory campus in Redwood City. Within ten years, far-reaching changes will occur on the existing campus: Stanford Hospital will build a new tower with 24 operating rooms, Packard Children's Hospital will build a new tower with expansion of their new operating rooms, and the medical school will build a Learning and Knowledge Center and three or more research buildings. These expanded facilities are essential for Stanford to remain a leader as a medical school.

Faculty development initiatives—New facilities alone do not make a great program. Faculty development is also a key to our success, as evidenced by new and ongoing awards and programs both within and outside of our department.

Teaching Scholars Awards: This year within the Department of Anesthesia, Alex Macario and Alice Edler created the Teaching Scholars Award (See article on page 6). Our seven faculty selected for this award (Aileen Adriano, Michael Chen, Jeremy Collins, Tara Cornaby, Kyle Harrison, Daryl Oakes, and RJ Ramamurthi) will attend numerous sessions that focus on teaching (both at Stanford and at the Society for Education in Anesthesia meeting) and they will each complete a project aimed at improving resident and fellow education at Stanford. The Teaching Scholars program will help develop our cadre of truly outstanding clinicians and educators.

Continued on page 6

CHAIRMAN'S UPDATE (CONT)

Other awards and degree programs will continue to develop our cadre of equally outstanding clinical and basic science investigators.

- **Anesthesia Resident Research Career-Development Award:** The department funded this new award this year.
- **Masters in Clinical Epidemiology:** Over the past few years, several faculty members have completed the Masters in Clinical Epidemiology degree program.
- **NIH Career-Development Awards:** The department has doubled its NIH funding over the last four years, and many of our faculty members have received NIH career-development awards.
- **FAER-Mentored Research Training Grant Awards:** Several of our faculty members have received FAER awards.

Clearly our investment in faculty development is succeeding. Moreover, the fact that NIH now emphasizes large, multidisciplinary programs combined with the fact that our department possesses expertise in perioperative care, critical care, and pain management positions our faculty to play a major role in interdisciplinary research at Stanford.

Quality of Residents—The quality and quantity of applicants for anesthesia residency and for subspecialty fellowship training continues at record levels.

Changes to educational programs—Major changes include expanded core competencies, increased teaching opportunities for residents and fellows, expanded small-group sessions, and better-defined progression with emphasis on new responsibilities and expectations with each additional rotation. The 2008 ACGME and RRC-mandated residency requirements (See article on page 7) will require significant changes to the structure of our rotations. The Education Committee is actively planning this transition.

Given the strengths of our faculty and residents, I am confident that these new facilities, increased faculty development, and improved educational programs will strengthen our missions: to improve clinical care; to educate medical students, residents, and fellows; and to advance knowledge relevant to anesthesia and its subspecialties.

Professor and Chairman
Department of Anesthesia
rpg@stanford.edu

SIX TEACHING SCHOLARS WIN AWARDS

Do you really enjoy teaching?

Would you like to improve your teaching skills?

Would you like to meet other faculty members also interested in teaching?

Six faculty members who successfully answered these questions are the department's first winners in the new Teaching Scholars Program.

Supported by Dr. Pearl, the program's overall purpose is to further train and empower faculty to improve residency education. In sponsoring this initiative, the department recognizes that faculty members charged with teaching aspire to achieve the same high level of expertise (in education) as that expected in research and clinical care.

The winners of these two-year career-development awards and the projects they plan to pursue are as follows:

- Aileen Adriano, Clinical Assistant Professor, will develop a focused-feedback form to aid first-year residents during their transition into the practice of anesthesia.
- Michael Chen, Clinical Assistant Professor, will develop a monthly pediatric anesthesia simulation course for CA3s, using the Simbaby located at Stanford/LPCH.

Continued on page 7

SIX TEACHING SCHOLARS WIN AWARDS (CONT)

- Jeremy Collins, Clinical Assistant Professor, will develop a post-rotation exit exam for residents who have completed OB and ENT rotations.
- Tara Cornaby, Clinical Assistant Professor, will explore the resident-selection process.
- Kyle Harrison, Clinical Instructor, will explore how to best use simulation to teach regional anesthesia with ultrasound guidance.
- Daryl Oakes, Clinical Instructor, will develop a curriculum for teaching transesophageal echocardiography (TEE) to cardiac anesthesia fellows and residents, to meet requirements for our newly-accredited cardiac anesthesia fellowship.
- R. J. Ramamurthi, Clinical Assistant Professor, will improve core curriculum teaching in the OR for pediatric anesthesia residents and fellows.

These Teaching Scholars will receive recognition, tuition funds, a formal title to add to their CVs, and three days of non-clinical time to attend meetings.

Meetings include these:

- Society for Education in Anesthesia Workshop on Teaching,
- Dr. Kelley Skeff's seminars at Stanford in medical education,
- the ACGME Annual Educational Conference, and
- The Teaching ACGME Core Competencies to Anesthesia Residents.

The Teaching Scholars will report on how their projects improve resident education, and the department will evaluate the projects' impact on residency program graduates.

The Teaching Scholars initiative is part of the department's broader education mission, which also includes building a medical education collection in our library and inviting two Grand Rounds speakers per year to present on clinical teaching, learning theory, and evaluation.

MANDATED CHANGES TO ANESTHESIOLOGY PROGRAM FOR 2008

by Alice Edler, MD, MA (Education), MPH
 Director, Pediatric Anesthesia Fellowship
edlera@aol.com

Effective July 2008, the Accreditation Council for Graduate Medical Education (ACGME) and the residency review committee (RRC) have mandated program changes, several of which will impact residents' choices of rotations for the next academic year. These changes will occur in phases over two years, beginning with the upcoming lottery.



The table below highlights only the changes pertaining to rotation requirements.

2008 vs. Current ACGME Rotation Requirements

Specialty Area	# Months 2008	# Months currently
Neuroanesthesia	2	1.2
Obstetric anesthesia	2	1.8
ICU	4 (1 as intern)	3 (excluding intern year)
Pediatric anesthesia	2	3
Pre-op Clinic	1	0.6
Acute Pain	1	0.6
Chronic pain	1	0.6
Regional analgesia in Pain Medicine	1	1.2

Continued on page 8

PROGRAM CHANGES FOR 2008 (CONT)

Other ACGME-mandated changes are these:

- **Academic Project or Clinical/Laboratory Investigation**—Each resident, with faculty supervision, must complete an *academic project* or a *clinical or laboratory investigation*—recommended for the final 24 months of training, but earlier at the program director’s discretion. *Academic projects* may include preparation and/or publication of grand-rounds presentations, review articles, book chapters, manuals for teaching or clinical practice, and similar academic activities. Outcomes of *clinical or laboratory investigations* should be presentable at local, regional, or national scientific meetings and publishable in peer-reviewed abstracts or manuscripts.
- **Instruction and Clinical Experience**—The program must provide appropriate didactic instruction and sufficient clinical experience in managing the specific needs of the following patient populations: geriatric patients, ambulatory surgical patients, and outpatients undergoing diagnostic or therapeutic procedures outside of the surgical suites. Additional rotations will address these areas of anesthesia practice.
- **Goals and Objectives**—All rotations must have goals and objectives statements; each statement should be formulated in core-competency format.
- **Evaluation**—At least semiannually the program directors must write a program evaluation that documents the following:
 - A review of accomplishments listed in the program’s goals and objectives,
 - Individual action plans to address any deficiencies noted,
 - A description of how any necessary educational changes will be effected, and
 - Opportunities for planned educational research and experimentation.

- **CBY Requirements**—At least 6 months of the CBY rotations must include experience in caring for inpatients in the following specialties and subspecialties: internal medicine, pediatrics, surgery (or any of the surgical specialties), obstetrics and gynecology, neurology, and family medicine, or any combination of these. In addition, CBY rotations should include at least one month (but not more than two months) in both critical care and emergency medicine. Up to one month of the CBY may be taken in anesthesiology. The Stanford anesthesiology program director must review all quarterly evaluations of CBY residents accepted into the program. These written evaluations provided by the CBY program director will determine a resident’s acceptance into the CA-1 year.

Although the new requirements at first blush seem daunting, they will be phased in, beginning with the rotation changes. In the end, meeting these requirements will support our goals for residents’ best professional development: to provide an environment in which residents are learners, to offer clinical settings that embody the highest standards of medical practice and patient safety, and to develop competent, effective, humanistic anesthesiologists.

For more complete information, please click http://www.acgme.org/acWebsite/RRC_040/040_prIndex.asp or http://www.acgme.org/acWebsite/downloads/RRC_programReq/040pr07012008.pdf or speak with Drs. Edler and Macario or Janine Roberts.



DEPUTY CHIEF'S COLUMN

by Rick Novak, MD



Clinical Case of the Month: A 5-year-old boy is scheduled for general anesthesia for a cochlear implant. On your pre-operative phone call to the mother, she tells you that after the same surgery on the other ear, the child was severely agitated in the Recovery Room. The last anesthesiologist told her that agitation was a common side effect for the sevoflurane anesthetic that was used.

What will you do?

Discussion: How about this plan? You obtain the old anesthesia record, duplicate the technique exactly, and give earplugs to everyone within ten yards of the Recovery Room? Don't buy it? Read on.

Before you begin a colleague says, "Who cares about crying? As long as the anesthetic care is safe, crying in the PACU is no big deal. It's a sign of an adequate airway." He continues, "Why, I went on an Interplast trip fixing cleft palates in South America, and all the kids screamed in the Recovery Room. They all survived."

I've got news for him—a screaming child in the Recovery Room is a problem for several people: the nurse, the mother of the child (she's freaking out herself), the attending anesthesiologist (who, by inference, looks like he doesn't know how to

finish an anesthetic), and every other PACU patient within earshot. I'd submit that the goals of a 21st Century anesthetic go beyond safety—patients or their families feel entitled to wake up as pain-free, nausea-free, and side-effect-free as possible.

Sevoflurane was introduced in Japan in the late 1980s and in the United States in the 1990s (*Miller's Anesthesia*, 2005, p.18). Because of its low solubility, sevoflurane represented a significant advance over isoflurane, which had dominated the inhaled anesthetic market prior to that time. In addition to its low solubility, sevoflurane was less pungent than isoflurane, and it could be used instead of halothane for inhalational induction in children. As well, sevoflurane inductions caused a lower incidence of cardiac arrhythmias than those with halothane. These properties made sevoflurane the drug of choice for inhalation induction in children (Johannesson GP, *Acta Anaesthesiol Scand*. 1995 May; 39(4):546-50).

Soon after sevoflurane's introduction into clinical practice, reports of sevoflurane and post-operative agitation delirium in preschool patients began to appear in the anesthesia literature. The described agitation was unrelated to pain, was inversely related to age, and was most frequent in children 5 years of age or younger. (*Miller's Anesthesia*, 2005, p.2373). The rate of emergence delirium with sevoflurane exceeded that of halothane. Aono reported a 40% incidence of delirium during recovery in preschool boys aged 3 to 5 years old, who underwent urologic surgery under sevoflurane, vs. a 10% incidence of delirium for those who were anesthetized with halothane (*Anesthesiology*, 1997 Dec; 87(6):1298-300).

A variety of remedies appeared in the peer-reviewed literature over the ensuing years. A complete discussion of all reported techniques is beyond the scope of this short column.

I refer you to *PubMed* with the keywords *sevoflurane*, *agitation*, where you'll find multiple references to support multiple techniques.

Continued on page 10

DEPUTY CHIEF'S COLUMN (CONT)

Statistical significance was obtained in controlled studies with the following techniques either before or after sevoflurane induction: use of oral midazolam prior to induction; use of a single dose of fentanyl 1 mcg/kg ten minutes prior to emergence; conversion to propofol infusion anesthesia after induction; conversion to isoflurane anesthesia after induction; conversion to desflurane anesthesia after induction; use of IV dexmedetomidine 0.3 - 0.5 mcg/kg after induction; use of PO clonidine premedication 4 mcg/kg before induction; or use of IV clonidine 2 mcg/kg immediately after induction.

Upon polling my private practice Stanford Adjunct Clinical Faculty colleagues on their preferred methods to minimize pediatric emergence delirium, three strategies prevailed:

1. the use of a heavy midazolam premedication (up to 0.8 mg/kg),
2. the use of titrated doses of intravenous fentanyl or other narcotic prior to emergence, and
3. discontinuance of sevoflurane after inhalation induction—instead substituting isoflurane or propofol for maintenance anesthesia.

No one used dexmedetomidine or clonidine.

Let's return to your 5-year-old patient. You decide to utilize all three options described above. You begin with the oral midazolam premedication 20 minutes prior to induction. (Because the duration of this surgery is estimated to be 90 minutes, you realize that most of the effect of the midazolam premed will have dissipated by emergence.) After an uneventful sevoflurane mask induction, you place an I.V. and intubate the trachea. At this point you turn off the sevo and switch to isoflurane. Cochlear implant surgery involves drilling into the skull, and despite use of local anesthesia by the surgeon, you can anticipate post-operative pain. It seems prudent to use a narcotic to treat both pain and delirium. At the conclusion of the anesthetic, you administer doses of 5 mg of

meperidine, titrated to the child's respiratory rate. After extubation, you supplement with additional narcotic, if needed, to effect comfort and tranquility. Because both the surgery and the anesthetic technique may stimulate post-operative nausea or vomiting, you administer doses of I.V. ondansetron and metoclopramide for nausea prophylaxis. As soon as the child begins to reawaken, you request the mother to sit at the PACU bedside as a humane, non-pharmacologic method of easing the child's emotional discomfort.

There are no trophies given for rapid wake-ups in the pediatric PACU. Your technique produces a gradual, calm emergence characterized by safe maintenance of the airway and a relaxed, comfortable child. The 5-year-old's mother is thrilled with the improvement over the last anesthetic, and the PACU nurses respect that you care about the quality of your patient's wake-up.

Clinical case for next month: You are medical director for a busy outpatient surgery center. Preoperative screening is routinely done by an RN, who telephones each patient two days prior to surgery. The RN pages you with this question: A 48-year-old patient scheduled for anterior cruciate ligament (ACL) reconstruction surgery takes hydrochlorothiazide for hypertension, and he has not had electrolytes checked for six months. His last potassium was 3.6. The nurse asks you whether this patient needs to have his potassium rechecked now, before surgery.

What will you do?

Rick Novak, MD

Associated Anesthesiologists Medical Group
rjnov@yahoo.com

**MAY 4–6 WESTERN ANESTHESIA
RESIDENT/FELLOW CONFERENCE (WARC)**
by John G. Brock-Utne, MD, PhD

It's that time of the year when we ask residents, fellows, and medical students who have done research in this department to present their research or case reports at the 45th Annual Western Anesthesia Residents Conference (WARC). The last day to submit abstracts is April 2, 2007. To register and send abstracts, click <http://www.ucdmc.ucdavis.edu/anesthesiology/calendar/warc.html>

This year's venue is the Hyatt Regency Hotel, 1209 L Street, Sacramento, CA 95814. Telephone 916 443-1234 to book your room; say you are with WARC to receive a discount). Feel free to contact suzanne.gaskins@ucdmc.ucdavis.edu or me jsbu@yahoo.com with questions.

—John

**JUNE 2 CSA/WARC RESEARCH
COMPETITION**

The Resident Research Competition will be held June 2, 2007 at the California Society of Anesthesiologists (CSA) Annual Meeting in San Diego. The candidate papers will be selected from those presented at WARC (see above). The entries will be judged on the basis of scientific merit and the quality of the presentation. Winners will receive cash prizes of \$1,500 for first place, \$1,000 for second, and \$500 for third.

The CSA meeting will be held at the San Diego Sheraton Hotel & Marina, CA, May 31–June 3, 2007. For eligibility requirements and application, please see <http://www.csahq.org/xtpl.php?tpl=internal.xtpl§ion=residents&name=residents> See www.csahq.org for additional meeting details.

**CONGRATULATIONS TO OUR STELLAR
RESIDENTS-OF-THE-MONTH**

DR. SCOTT JENSEN, NOVEMBER 2006



DR. JIMMY WONG, DECEMBER 2006



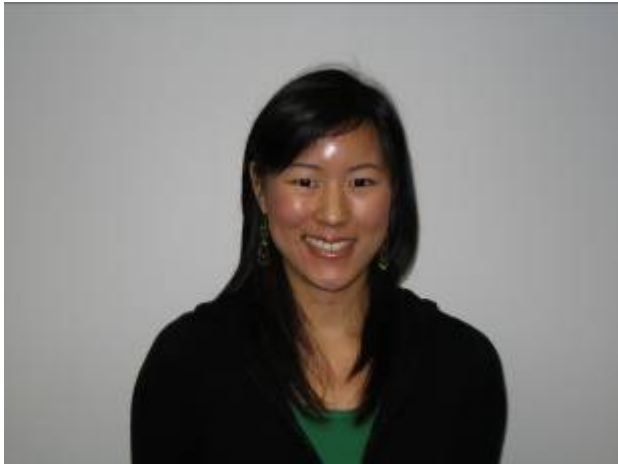
DR. DAMIAN HORSTMAN, JANUARY 2007



Continued on page 12

**CONGRATULATIONS TO OUR STELLAR
RESIDENTS-OF-THE- MONTH**

DR. VICKI TING, FEBRUARY 2007



**CONGRATULATIONS TO OUR STELLAR
ATTENDINGS-OF-THE- MONTH**

DR. MIKE CHEN, NOVEMBER 2006

Lucile Packard Children's Hospital

Resident responses:

"Master peds anesthesiologist. Critical thinker—don't let the happy-go-lucky facade fool you. He forces residents to think about their anesthetic plans and all the potential pitfalls."

DR. CARTER CHERRY, DECEMBER 2006

Santa Clara Valley Medical Center

Resident responses:

"A resident advocate who allows residents to rest during long call days, who teaches a lot while in the OR, and who allows you to read during the day."

DR. CHARLES HILL, JANUARY 2007

Stanford University Hospital

Resident responses:

"Like his initials, he's "c.hill" under fire. He always commends, even after I've missed the art line & central line, "Hey, nice job with the intubation...Look at you with the big brains!"
"Easily the best hair in the department."

ANNUAL ANESTHESIA GOLF TOURNAMENT

John G. Brock-Utne has set Sunday 20 May at 1pm (13:00) as the date and start time for Stanford Anesthesia's annual golf tournament. In his invitation, he states,

At the moment, that start is a shotgun (everyone starts at the same time and hopefully ends at the same time). However, that may change. If it does, we will be going out at 10 min. intervals from about 11 am.



Please let me know if you are interested in playing and if you are bringing a partner (you can only bring one). As you know, the format for the golf tournament is a scramble, so there is very little pressure. Remember that you must carry your own golf bag. No sharing of golf clubs is allowed. Please also tell me if you have a special person you want to play with. I will try and honor your request to the best of my and the computer's ability.

In the middle of May, I will issue to you the tee times and pairings. The cost for residents on the Ann Dohn list is \$25.00. For all others, it is \$110.00 per person, unless you are a University Faculty, in which case you will pay \$60.00. If you want to take a cart, then that is extra.

At the end of the tournament, there will be a prize-giving, drinks, and snacks on the patio overlooking the 18th Green. This will start from about 5:30 pm.

It is essential to understand that if you don't sign up now for this event you can't play. There are a limited number of places, so the first one signed on is the first one served.

Continued on page 13

ANNUAL GOLF TOURNAMENT (CONT)



If you have any questions/concerns, please let me know. Look forward to hearing from you.

John G. Brock-Utne, MD, PhD

Professor of Anesthesia

jsbu@yahoo.com

LETTERS TO THE EDITOR



Dear Rick,

I enjoyed reading your recent case scenario regarding the 62-year-old asthmatic with sleep apnea, who developed hypertension and tachycardia in the PACU, after undergoing a UPPP. While you presented a cogent argument in favor of Beta 1 selective Beta blockers, I would also advance the consideration of alpha-2 agonists.

In deference to my former VA mentor, Stanford alpha-2 agonist legend, and G-protein guru Mervyn Maze, these drugs offer some unique advantages. While we all recall the perils of the “VA clonidine preop,” who can forget the bradycardic and hypotensive vets? There are alternatives.

Dexmedetomidine, which wasn’t available during my training at Stanford, has been demonstrated by the Perioperative Ischemia Research Group to reduce ischemia in vascular patients.¹

Unfortunately, this benefit didn’t appear in a study involving 80 patients undergoing CABG.²

Nonetheless, among other benefits, dexmedetomidine inhibits sympathetic activation, reduces the release of norepinephrine, and decreases myocardial lactate (in intact animals). It is easily titratable and has the added benefit of providing anxiolytic and analgesic effects.

While it is beyond the scope of this letter to discuss all of the theoretical (post junctional alpha-2 receptors in the coronaries, for example) or practical concerns of dexmedetomidine, there may be some role for this alpha-2 agonist in reducing myocardial ischemia. Additionally, mivazerol (available in Europe) and clonidine bear some consideration.

Perhaps the esteemed Dr. Maze will weigh in on this one?

Sincerely,

Adam Rubinstein MD

Department of Anesthesia
Washington Hospital Center
Washington, D.C. 20010
adamjr@comcast.net

1. Talke P, Li J, Jain U, Leung J, Drasner K, Hollenberg M, Mangano DT. **Effects of perioperative dexmedetomidine infusion in patients undergoing vascular surgery.** The Study of Perioperative Ischemia Research Group. *Anesthesiology* 1995; 82:620-633.

2. Jalonen J, Hynynen M, Kuitunen A, Heikkila H, Perttila J, Salmenpera M, Valtonen M, Aantaa R, Kallio A. **Dexmedetomidine as an anesthetic adjunct in coronary artery bypass grafting.** *Anesthesiology* 1997; 86:331-345.

Dear Adam,

Thank you for your reply and your well-written comments. I'll admit that alpha-2 agonists have made almost zero progress into my practice or in those of my private-practice colleagues in Palo Alto. I've heard the lectures and read the papers about the alpha-2 agonists on the market, but the drugs haven't filled any empty niche in my patient care. Maybe this case scenario is such a niche. I have forwarded your letter to Dr. Maze, who I hope will respond, to stimulate further discussion.

Rick Novak

Dear Patricia,

I just received the November issue of the *Pipeline*, but please send back issues, because I post Rick Novak's column in our coffee room for the residents, who love his cases.

Mark Shulman, MD

Program Director

Caritas St. Elizabeth's Medical Center

Boston, MA

Mark.Shulman@caritaschristi.org

Stanford resident 1977–1980; faculty member 1980–1981 and 1982–1988



ALUMNI CORNER

My residency at Stanford has had a great impact on the way I practice anesthesia in particular and medicine in general. The professors of that era (1971–1979) were of the highest quality.

First, department chairman John Bunker fostered an elegant, elitist attitude towards anesthesia; he was part of that Harvard group trained by Henry K. Beecher. He bolstered the image of anesthesia at Stanford, when at most institutions it was still considered a second-class medical specialty. He recruited Ellis Cohen, who most epitomized the clinician/basic researcher. He, more than anyone else, showed that you could be a great practitioner of the art of anesthesia, as well as a first-class basic researcher. Cohen once said to me, “Don, I’ve got an important meeting in a couple of hours. Would it be OK if I gave the anesthetics to show you how it’s done in private practice?” Ellis had six or eight T’s & A’s done in about 3–4 hours. He flew through them, whereas it would have taken me (a resident) all day. When finished, he said, “Now, Don, don’t ever do what you just saw.”

Other notable individuals included Charles Whitcher, Grant Fletcher, Michael Cousins, and Richard Mazze. Whitcher fostered a strict, obsessive-compulsive attitude towards orderliness and patient monitoring; Fletcher, had more pearls of wisdom than anyone else about technique and staying out of trouble. At the VA hospital I had the great fortune to have Cousins teach me block anesthesia—he subsequently emerged as one of the world’s authorities, and he co-authored regional anesthesia’s pre-eminent textbook. Mazze was also a great teacher and researcher.

More than anything, my Stanford residency prepared me for a career where I have always striven for excellence.

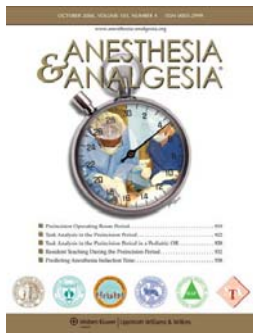
Donald P. Bernstein, MD

Strokevolumedon@aol.com

Resident 1971–1973

FACULTY CORNER

ARTICLES



- ❖ Petroz GC, Sikich H, James M, van Dyk H, Shafer SL, Schily M, Lerman J. A phase I, two-center study of the pharmacokinetics and pharmacodynamics of dexmedetomidine in children. *Anesthesiology*. 2006; Dec; 105 (6):1098-110.
- ❖ Shafer, SL. Did our brains fall out? *Anesth Analg*. 2007; 104 (2):247-8.
- ❖ Shafer, SL. Case scheduling for dummies. *Anesth Analg* 2006; 103:1351-1352.
- ❖ Angst MS and Drover DR. The pharmacology of drugs formulated with DepoFoam™: a sustained release drug delivery system for parenteral administration using multivesicular liposome technology. *Clin Pharmacokinet* 2006; 45:1153-76.
- ❖ Williams GD, Ramamoorthy C, Chu L, Hammer GB, Kamra K, Boltz MG, Pentcheva K, McCarthy JP, Reddy VM. Modified and conventional ultrafiltration during pediatric cardiac surgery: clinical outcomes compared. *J Thorac Cardiovasc Surg* 2006; 132: 1291-8.
- ❖ Taylor CP, Angelotti T, Fauman E. Pharmacology and mechanism of action of pregabalin: The calcium channel alpha2-delta subunit as a target for antiepileptic drug discovery. *Epilepsia* 2007;73:137-150. Angelotti T, Mireles S, McMahon D. Anesthetic implications of a near-lethal sodium azide exposure (letter). *Anesth Analg* 2007; 104(1):229-230.

- ❖ Namath A, Wong J, Agrawal R, Chen C, Weinacker A, Patterson AJ. *Impact of Hydrocortisone Administration on Leukocyte Gene Expression in Patients with Severe Sepsis*. Presented at NIH 4th Symposium on Functional Genomics of Critical Illness and Injury. Bethesda, MD. November 13–14, 2006
- ❖ Patterson M, Walton B, Chow A, Namath A, Wong J, Agrawal R, Patterson AJ. *Catecholamine-induced Stress and Heart Failure: Can beta2 Adrenergic Receptor Activation Protect the Heart and Improve Its Function?* Presented at NIH 4th Symposium on Functional Genomics of Critical Illness and Injury. Bethesda, MD. November 13–14, 2006.

INVITED TALKS

- ❖ Steven Shafer, MD, spoke about *The Future of Anesthetic Pharmacology* to the Brazilian Society of Anesthesiologists in November 2006.
- ❖ Steven Shafer, MD, spoke about *Remifentanyl: Clinical Update 2007* to the Brazilian Society of Anesthesiologists in November 2006.
- ❖ Martin Angst, MD, spoke on *Opioid-Induced Hyperalgesia* at a symposium, The Interface between Pain and Opioids: New Horizons, sponsored by the National Institute of Drug Abuse at the 2006 Meeting of the American Academy of Addiction Society, St. Pete Beach, FL.
- ❖ Martin Angst, MD, spoke on *Opioid- Induced Hyperalgesia* in November, 2006 to the Center for Health Care Evaluation, Department of Veterans Affairs, Menlo Park, CA.
- ❖ Greg Hammer, MD, spoke about *Clinical Trials in Children—The Sodium Nitroprusside Study* to representatives from the FDA and NIH at the Best Pharmaceuticals for Children’s Act (BPCA) Prioritization Meeting in Bethesda, MD on December 5, 2006.

INVITED TALKS (CONT)

- ❖ Steve Lipman, MD, and Kay Daniels, MD, were panelists for *Teams and Risk Management for ObGyn* at the 7th International Meeting for Simulation in Healthcare in Orlando, FL.

WORKSHOP

Steven Shafer, MD and Lindsey Vokach-Brodsky organized a workshop, given December 2, 2006, on *Ultrasound-Guided Imaging in Regional Anesthesia*.

HONORS

In February Juli Barr, MD, received a Presidential Citation Award from the Society of Critical Care Medicine (SCCM) for her Committee and Clinical Guidelines development work at SCCM's 36th Annual Congress in Orlando, FL.

INTERNATIONAL MEDICAL MISSIONS

GITWE, RWANDA

December 2–14, 2006 Stanford faculty, residents, staff, and students responded to the call to provide volunteer medical services for a rural Rwandan community. Sponsored by Medical Missions for Children (<http://www.mmissions.org/>), the mission provided otolaryngology surgeries for children and adults and obstetrics/gynecology services (including deliveries). Participants included faculty member Andrew J. Patterson, MD, PhD; resident Jung Hong, MD; Nicole Cromwell, RN; and undergraduate Ashwin Murthy (biological sciences, class of 2008).

Continued in next column

CONSIDER GIVING A GIFT
TO THE
DEPARTMENT OF ANESTHESIA

<http://pgnet.stanford.edu/goto/AlumniDeptAnesthesiaGift>



MMFC Team with the Hospital Staff at Gitwe, Rwanda December 2006

When asked about the experience, Murthy reported, “Dr. Patterson, along with Medical Missions for Children, gave me the unparalleled opportunity as an undergraduate to travel to Gitwe, Rwanda, where I experienced both excellent medicine and strong people. This trip was definitely a challenge for everyone involved due to the inherent difficulties of the site, but the warmth and kindness shown to us by the Rwandan people made it worthwhile. Each successful operation that brought a new smile to a child or a new life into this world further proved that despite the remoteness and poverty of Gitwe, it is possible to help in the most demanding of areas. This trip exposed me to medicine on a level I did not know possible, and it solidified my desire to pursue medicine.”

TEPIC, NAYARIT, MEXICO

January 20–28, 2007 Stanford doctors, nurses, and residents applied their expertise in surgery, anesthesia, and pediatrics on a DRL Foundation-sponsored mission to Tepic's General Hospital. (<http://www.drlfoundation.org/>)

Participating anesthesia resident Manik Wijesinghe said, “Perhaps the most surprising, fascinating aspect of the medical mission was how quickly my basic skills with pediatric cases were honed, given severely limited resources. We often had to make do with severely limited supplies and faulty equipment, limited

Continued on page 17

INTERNATIONAL MEDICAL MISSIONS (CONT)

monitoring, and a scarcity of drugs. We were creative with tape, syringe caps, and tubing to get things to work. I was also reminded of how much more medical waste is generated in the US than in Mexico, where supplies (i.e., syringes, needles, and suction catheters) were not opened, unless we needed to use them, and circuits and disposable masks were routinely recycled.



Resident Manik Wijesinghe and faculty anesthesiologist Tom Gaston in Tepic, Nayarit, Mexico, January 2007

Overall, the mission was inspiring and life-changing. I had the pleasure and privilege of working with some inspiring individuals on the trip—for example, Drs Donald Laub, David Fogarty, and Tom Gaston. I am now committed to making mission work an essential part of my professional life, which I imagine will then shape the choices I make for the rest of my career.”

Dr. Donald Laub, Adjunct Clinical Professor of Surgery, founder of Interplast, and chairman of DRLF’s board wrote to Dr. Alex Macario: “We formed a great team, did a huge amount of good work, had no complications, had a lot of fun together, and formed a very cohesive group in the process. From anesthesia, surgery, and pediatric standpoints, and from the point of view of doing good in the world socially and politically, we count it a huge success.”

UPCOMING EVENTS

- ❖ March 4–9, 2007. The 20th Annual Anesthesia Update will be conducted by the Stanford University Department of Anesthesia at Copper Mountain, CO.
- ❖ March 23–27, 2007. IARS 81st Clinical and Scientific Congress, Orlando, FL
<http://www.iars.org/congress/congress.shtm>
- ❖ May 4–6, 2007 Western Anesthesia Resident Conference, Sacramento, CA (see related story).
- ❖ May 20, 2007 at 1:00 pm. Stanford Anesthesia Golf Tournament (see related story).
- ❖ May 31–June 3, 2007 California Society of Anesthesiologists Conference, San Diego, CA (see related story).
- ❖ June 8–10, 2007. *Implementing Innovations for the New Century: Educating Adults*, spring meeting of the Society for Education in Anesthesia, Santa Fe, NM. Click <http://www.seabq.org/>

BABIES

Nichollette Roemer and Ian Kasman announce the December 10, 2006 birth of Madeleine Greta Kasman, a beautiful, perfect little girl, weighing 9 pounds 9 ounces and measuring 22.5 inches long. They are grateful to Sheila “one-shot” Rajagopal and Dr. Lemmens for the awesome epidural and sense of safety.



Continued on page 18

BABIES (CONT)

Nate Kelly, CA-1, and his wife, Jamie Kelly, announce the November 8, 2006 birth of Bennett James Kelly, weighing 7 pounds 1 ounce and measuring 19.5 inches. Baby Bennett is doing well. They express their thanks to OB Karen Shin of PAMF, to Nicholette for a very helpful epidural, and to Ben for picking up call on the spur-of-the-moment.



Michael and Cindy Chen announce the January 11, 2007 birth of their son, Timothy Issac, weighing 5 pounds 15 ounces and measuring 20.5 inches.



DUBOIS, KYLER, AND TING VOTED CHIEF RESIDENTS FOR 2007-2008

Alex Macario, Residency Program Director, announced that Josh DuBois, Tom Kyler, and Vicki Ting were voted by residents and faculty to be next year's chief residents (July 1, 2007 through June 30, 2008). "They were selected from a strong group of CA2s, and I know they will function very well in this important role in the department. Congratulations!"



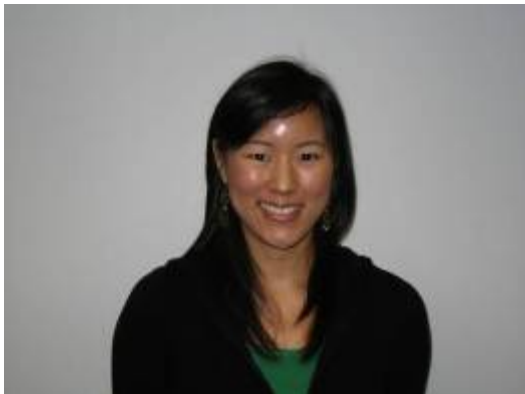
Josh DuBois



Tom Kyler

Continued on page 19

NEW CHIEF RESIDENTS (CONT)



Vicki Ting

GAS PIPELINE IS ONLINE

Danielle deLeon, web content manager, writer, and editor for the departments of Anesthesia and Cardiothoracic Surgery, has put back issues (July 2005 through the present) of *The Gas Pipeline* onto the Anesthesia Department website. Click <http://med.stanford.edu/anesthesia/newsletter/> to read them. Danielle will add issues, as they are published each quarter. Contact her at ddeleon@stanford.edu

Copyright © 2007