AUA
Association of University Anesthesiologists
Update
Spring 2010

Contents

ASA President's Message to AUA
ASA Has Been Working on Multiple Fronts

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Virtually since the day I assumed the position of ASA President, the pace of activity on health care reform in Washington has been quickening. Considering the enormous number of critical and highly charged issues that relate to health legislation – including immigration, abortion, tax policy, big government versus little government – it has been a challenge to focus on ASA's key priorities, recognizing that the scope of our advocacy needs to be strategic and based on those items most important to the medical specialty of anesthesiology.

During the prior year, ASA's message to its members and to lawmakers was solitary and crystal clear – our specialty would not survive proliferation of Medicare's payment framework to other health plans. On our key issue, we remain vigilant and recognize that because this is much less critical for other specialties, we are always vulnerable. However, we emerged from months of Congressional deliberations with our key concern satisfactorily addressed in both the House and Senate versions of the legislation.

We have built important coalitions with a diverse group of organizations, especially surgical specialties, but also consumer groups as diverse as B'Nai B'rith, various AIDS advocacy groups, hospice organizations and others. These collaborations have amplified our advocacy, particularly as we addressed shortcomings in the Senate's version of health legislation.

The upheaval in the control of the Senate has re-opened a variety of issues and renewed some threats. With an emphasis on limiting the cost of health care reform legislation, how providers are paid will likely be re-examined, and our key financial concerns – Medicare rates, SGR relief and autonomous payment boards – will again require focused attention. On the other hand, increased leverage of the minority party may allow new consideration of medical liability reforms.

Alexander A. Hannenberg, M.D.

> "It is testimony to the deep-seated culture of professionalism in the specialty that the concept of benchmarking and improvement has been so readily embraced. I believe that AQI is poised to rapidly emerge as a vital resource to anesthesiology."

In early November, anesthesia practices nationwide began contacting ASA to report difficulty in obtaining adequate supplies of propofol for their clinical needs. These reports coincided with known shortages of thiopental, etomidate and methohexital. Thus, most intravenous induction agents were simultaneously in short supply. We regarded this as a critical situation

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and began working with the U.S. Food and Drug Administration to monitor and address the problems. ASA hosted a national teleconference to develop strategy and collaborated with both the FDA and the American Society of Health System Pharmacists. As a result of this work, the FDA provided emergency authorization for importation of 200,000 doses of propofol to mitigate the impact on clinical care.

In October, the FDA expressed an interest in convening a public-private partnership to break through the impediments to development of improved analgesics. Since that time, ASA has been in regular dialogue with the FDA to explore a role as the convener of such a partnership, assuming administrative, fundraising and scientific management roles. I believe that promoting new research in the treatment of pain will be beneficial to the anesthesia research community and that it will demonstrate ASA's central place in the field of pain medicine. Drs. James Rathmell and James Eisenach are guiding us through the process of understanding our options in this project.

I believe that this multifaceted relationship with a key federal agency is a model for ASA advocacy in the regulatory (executive) arena that we've sought to develop in recent years. ASA's Chip Amoe, J.D., our regulatory affairs lead in the Washington office, was instrumental in coordinating this work.

Last fall, I commented on the need for ASA to support our members' interest in global humanitarian outreach. Little did I know that January's devastating events in Haiti would accelerate our work in this area.

Within days of the Haitian calamity, ASA assembled a roster of reputable organizations in need of financial support on our Web site. We contacted multiple well-established international relief organizations and offered to support their efforts to recruit volunteer anesthesiologists through our Web site and e-mail network. A very beneficial collaboration developed with the American College of Surgeons' Operation Giving Back Project **www.operationgivingback.facs.org**. Our outreach to humanitarian organizations has been extremely well received by our members and the relief organizations, and our ASA volunteers have undoubtedly saved lives and reduced suffering in Haiti.

I am enormously proud of the generosity of our members with their money and their time. It is testimony to the professionalism of anesthesiologists that the response has been both abundant and expert. We will continue to find ways to support such volunteerism on an ongoing basis.

Over the past 18 months, ASA has invested heavily in augmenting an inadequate education staff. We have grown from a one-person department to five talented individuals, poised to meet the growing needs of a growing membership. Even in the past months, evidence of our enhanced capability has appeared: a webinar series, live streaming video from our annual meeting, a close collaboration with the ABA on MOCA® materials and other clear signs of progress. Stay tuned for an exciting "growth spurt."

In early January, Anesthesia Quality Institute (AQI) Executive Director Richard Dutton, M.D., M.B.A. took up permanent residence in ASA's Park Ridge office, and the Institute shifted into high gear. Key employees have been hired, the first database participation agreements with anesthesia practices have been executed and multiple external grant applications have been submitted. The AQI Board meets regularly by teleconference, and a diverse and robust advisory panel has been constituted.

The outpouring of interest in the clinical registry from anesthesia practices large and small has been gratifying. The "alpha" group of practices enrolling in AQI is diverse and includes private and academic groups and those with and without electronic anesthesia information systems.

It is testimony to the deep-seated culture of professionalism in the specialty that the concept of benchmarking and improvement has been so readily embraced. I believe that AQI is poised to rapidly emerge as a vital resource to anesthesiology.

A rather stark illustration of the payment implications of "comparative effectiveness research" emerged as Noridian Administrative Services, Medicare Part B contractor in nine states, issued a non-coverage policy statement on lumbar facet joint injections.. These services have seen very dramatic growth in volume and consequently have been under Medicare's microscope. The underlying basis for Noridian's action was the paucity of legitimate data supporting the efficacy of these procedures. ASA had the opportunity to collaborate with more than 10 specialty organizations interested in pain medicine to achieve amendment of Noridian's policy. The need for clinical data aggregation could not have been more powerfully demonstrated than by these events.

Reports from the Federal Election Commission for 2009 have recently become available. On this basis, I'm delighted to report that our ASAPAC is officially the largest health professional political action committee in the nation, surpassing all other medical specialties, AMA and all non-physician provider groups. This is a remarkable achievement, and I extend my congratulations and gratitude to the ASAPAC Board and its staff in Washington, D.C., particularly Ronald Szabat, Manuel Bonilla, Scott Barnes and Moriah Merkel. Most of all, it is evidence of the commitment of ASA members across the nation to effective advocacy in the interests of our profession, specialty and the patients we serve.

Academic Anesthesiologists Provide Medical Support in Haiti

W. Andrew Kofke, M.D., M.B.A.
University of Pennsylvania
AUA Update *Editor*

The January 2010 earthquake in Haiti created a massive humanitarian disaster. Medical needs were significant. The *AUA Update* became aware of two academic anesthesiology departments, from Penn and Duke, that supported sending some of their faculty and staff to provide support. Other academic anesthesiologists from other departments probably also contributed. An interview follows of two anesthesiologists from Penn who participated.

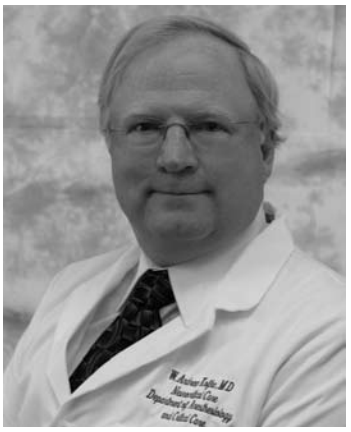
Anesthesiologist volunteers in Haiti, in their own words:

1. What single case stands out in your mind?

Michael Ashburn (MA): It is easy to forget the patients that did well and focus on the patients that had a bad outcome. During our time in Haiti, we did 76 operations and about 40 anesthetics outside of the O.R. for dressing changes and casts. We had no major adverse events related to the anesthesia, something I am delighted to report. I believe that the care the team provided was excellent, and I feel we were successful in improving the lives of those we cared for. In addition, I am hopeful that we left the institution we worked in a bit better than when we arrived.

There are several patients that I will remember. One is a young woman we performed a BKA on. She had an uneventful initial recovery overnight, but developed acute dyspnea on the first postoperative day. We had limited laboratory capabilities but were able to find out that her Hb was 3. Yes, I meant 3. Many of the patients we cared for had remarkably low Hbs. Regardless, we did not feel that this represented acute blood loss and that this was the primary cause of her symptoms, which were acute in onset. We believed that she had experienced a PE, although there was no way to confirm the diagnosis. We started anticoagulant therapy. Her respiratory status continued to worsen, and she was ultimately intubated in the early evening of the first postoperative day. As we had no ventilators, she was transported in the back of a truck for a 2.5-hour ride to Port-au-Prince, with ventilation via hand. I am pleased to report that she quickly responded to therapy and was extubated the following day. She was fortunate to have responded to therapy for a potentially fatal complication of surgery.

Thomas Floyd (TF): A 7-year-old boy presenting with a head injury after a fall from a horse. We could offer no intervention, and he was placed in a bed in the ward with all the other patients and allowed to slowly die. His mother told me that his father had died in the earthquake, spent all she had on his burial, and she had no money left now to bury her son. Funerals are taken very seriously in Haiti, even among the poor, and they often spend their entire savings on this. I was able to quietly give the grieving mother the amount in American dollars that this would cost, and she was very grateful.



W. Andrew Kofke, M.D., M.B.A.

2. Now that you are done with your experience providing care in Haiti, could you describe any specific areas where there is a lack of knowledge on how to best manage this sort of situation? Should any research be funded to help deal with the next disaster?

MA: Many anesthesia providers have little experience in providing patient care in an austere environment with limited monitoring and limited treatment options. There are limited resources for physicians and surgical teams to use to prepare for such trips. I think that academic health centers can be a valuable resource in preparing teams in advance to allow for rapid deployment of emergency health care teams to respond to medical emergencies. Such teams would certainly save lives and allow members to gain the knowledge and experience to provide such services locally in the event these emergencies occur closer to home. Nothing can replace planning, preparation and experience.

Dr. Floyd assists in surgery.

TF: It is surprising to me that universities don't have plans in place to deal with such situations more quickly. Universities and individuals should be pre-identified and equipment lists in place, as well as plans for mobilization.

3. Should anesthesiology residents be exposed to third-world technology or disaster conditions to be better able to handle situations like this… which after all could happen anywhere, including the U.S.?

MA: Absolutely. Anesthesiology and surgery residents can gain valuable experience in participating in these efforts. Hopefully, many of these individuals will continue to provide care in the developing world during their careers. I think that exposure to this sort of experience early in one's professional development can be an extremely important part of the training we provide.

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TF: Absolutely. It would make them more cognizant of the utter waste that goes on in our medical care. We had no more than a pulse oximeter and blood pressure monitoring and had no anesthetic mishaps. This should be part of all university missions.

4. ***What sort of teaching did you do while you were there of local practitioners, other docs from the U.S. and so on? Did anyone teach you?***

MA: We worked at a hospital in Cange. This hospital had a CRNA training program, so we worked almost every day with CRNA students. I was delighted to have an opportunity to provide hands-on education to these individuals, although these efforts were a bit more difficult due to my inability to speak their language. I learned a great deal from each and every member of my team.

Dr. Floyd demonstrating a train of four device, apparently on himself.

TF: I taught CRNA students who spoke only French or French Creole. We were able to get our message across, but we had to keep it simple. The language barrier was of great concern to me. Lack of familiarity with non-depolarizing muscle relaxants also created some uneasiness on my part. These students were not familiar with ventilators as they had no driving gas available to them. Nearly all patients who were intubated were induced with succinlycholine, and spontaneous ventilation quickly occurred.

5. ***How much non-anesthesia general medical or surgical work did you do?***

MA: I participated in patient rounds with the surgeons every day. In addition, I participated in what we called "Wound Rounds" daily as well. During Wound Rounds, we changed the dressings on about 15 patients a day. About four of these folks, mostly children, were administered anesthesia to tolerate the procedure. When one is a member of a relatively small team, you end up doing whatever tasks are necessary to get the job done.

TF: I first assisted with some general surgery and anything else that was required, including cleaning floors, circulating for scrub nurses, etc.

6. ***Certainly your clinical effort for the year was budgeted by your home department. How was your time funded, i.e., from your vacation or academic time, or are others in your department picking up your donated clinical time?***

MA: I was delighted with the level of support provided to me by my department and institution. I did receive some clinical credit for the time I was away, but also burned up some vacation time that I had already scheduled for the time the trip took place.

TF: The department eventually picked up all of my time away, and I am grateful for that, but only after some prolonged and uncomfortable discussion…after I returned. If you are going to do this sort of thing, make sure that this is ironed out ahead of time.

7. ***Do you have any other comments that you think AUA members would find to be of interest?***

Makeshift hospital beds.

TF: Listen closely to the needs of the team already on site. They know far better than you just what is needed in terms of personnel, equipment and supplies. Give them what they need, not what you think they need. All politics at your home institution should be put aside to achieve these goals. Pick a team leader with charisma. The work could be much harder than what we had to deal with, and *esprit de corps* is of the utmost importance.

Pick team members with a great deal of prior clinical experience and ability to cope with less than what is "the usual" in the U.S. Our orthopedic surgeon had to do all surgery without X-ray assistance! We had many pediatric cases to do, and with little monitoring – in one case for an amputation in a 24-month-old with a hemoglobin of 5gm/dl. This takes a lot of confidence and is not the place where a new faculty member, or one without a breadth of experience, would be comfortable.

Editors note: Partners in Medicine involvement in this is fully described in Kidder T: Recovering from Disaster — Partners in Health and the Haitian Earthquake NEJM 362:769-772 Mar 4, 2010 **http://content.nejm.org/cgi/content/full/362/9/769** *and a slide show at* **http://content.nejm.org/cgi/content/full/NEJMp1001705/DC1**.

Also From Welling DR, Ryan JM, Burris DG, Rich NM **Seven Sins of Humanitarian Medicine**. **World J Surg**. 2010 Jan 9. *There is some advice in this recent article for those embarking on humanitarian missions: The following are seven areas of concern:*

1. *Leaving a mess behind.*
2. *Failing to match technology to local needs and abilities.*
3. *Failing of non-governmental organizations (NGOs) to cooperate and help each other and accept help from military organizations.*
4. *Failing to have a follow-up plan.*
5. *Allowing politics, training or other distracting goals to trump service, while representing the mission as "service."*
6. *Going where we are not wanted, or needed and/or being poor guests.*
7. *Doing the right thing for the wrong reason.*

Photos courtesy of Michael Ashburn, University of Pennsylvania.

DMTF-1 Anesthesia Report, Haiti, February 5-13, 2010

The following is a "recipe" of things that an anesthesia group needs to do when responding to a disaster. Thanks go to Dr. MacLeod and Lee Freeman for sharing this document. — W.A.K.

1.Personnel

1.1.Dr David MacLeod, FRCA
1.1.1.Previous experience: Royal Navy doctor 1989 - 96, deployed to Croatia as UN Protection Force Field Surgical Team; participant with Interplast to La Paz, Bolivia; Duke Neurosurgical Team to Mulago Hospital 2007/2008.
1.2.Lee Freeman, CRNA
1.2.1.Previous experience: US Army Reservist with 4 month deployment to 345th Combat Support Hospital, Al-Asad, Iraq in 2008.

2.Preparation

2.1.Telephone conversation between DM and Dr Tom Floyd, member of U Penn team preceding Duke's team at Cange.
2.2.Tom Floyd gave a detailed description of OR facility, anesthesia equipment, anesthesia drugs and expected patient case load. This helped to identify deficiencies of anesthesia equipment at Cange. In addition, this permitted a more specific equipment list to be packed (Appendix A) with significant reduction in overall cargo weight.
2.3.Specific equipment items ordered through Cardinal Health with 24-hour turnaround time.
2.4.Specific anesthesia drugs ordered through Jessica Thomson, Duke ER.
2.5.Partners in Health (PIH) requested two Propaq monitors if available. Four monitors were obtained by Mary Crawford, Procurement, from the Duke Global Health PLUS scheme. One monitor was non-functioning. Two monitors were taken; the third monitor remained at Duke because of weight limitations.
2.6.Ultrasound machine: a spare Sonosite Titan machine with 12 MHz probe and supplies was taken by DM specifically for regional block placement.
2.7.Additional personal anesthesia items were carried by the staff (Appendix B).

2.8.All anesthesia equipment distributed between anesthesia personnel for packing.
2.9.All anesthesia drugs were transported by team leader, Dr. Ian Greenwald.
2.10.There were no equipment deficiencies on the travel list at the time of deployment.

3.Anesthesia Facilities at Cange, Haiti

3.1.**Personnel**: 1 CRNA (Monsieur Guy) and 6 student CRNAs.

3.2.**Operating Rooms**: two small ORs linked by rear corridor; narrow front access to bring patients into and out of ORs.

3.3.**Preop area**: no formal area. Patients were brought from surgical wards or waited in the connecting corridor if they had to come from another ward e.g temporary ward in church, pediatric wards.

3.4.**Recovery**: no formal area. Patients were returned to the main surgical ward. There were no dedicated recovery nurses. Care was given by ward nurses, usually two in number, with approximately 20 patients present on the ward. Monitoring was limited to a portable pulse oximeter. Limited postop analgesia regimen.

3.5.**Anesthesia equipment**:
3.5.1.Anesthesia machine: two brand new Datex-Ohmeda Aespire machines had been installed in the week preceding the team's arrival. The machines have only oxygen tank supply. The monitoring includes non-invasive blood pressure (NIBP), pulse oximeter saturation (SpO2), end-tidal oxygen and carbon dioxide and volatile agent concentration. Isoflurane and sevoflurane vaporizers.
3.5.2.Basic equipment is available: tracheal tubes, oropharyngeal airways, laryngeal masks airways (LMAs), laryngoscopes, circle system circuits.
3.5.3.Ultrasound machine: Duke staff located a GE Involus machine on the surgical ward. The device had three probes (12MHz, 5 MHz, and vaginal) presumed to be used by the obstetric staff. The US machine is capable of being used for US-guided regional anesthesia but the Cange staff have received no formal training.

3.6.**Anesthesia drugs**: all basic drugs were available (induction agents, volatile agents, analgesics).

3.7.**Supplies**: within the OR all anesthesia equipment is located either on shelves in the connecting corridor or in the drawers of the anesthesia machine. There was no formal categorization of the equipment. Additional anesthesia supplies were found in the facility library, designated as the store room. No structure was present with items scattered randomly. The Cange staff were unaware of the contents of the store room, even though some items were of immediate use to them.

3.8.**Organization**: the standard anesthesia care is provided by the student CRNAs under the supervision of Msr Guy. The emphasis is to establish spontaneous ventilation which is appropriate given the lack of postoperative monitoring. The techniques are limited to:

3.8.1.General anesthesia with spontaneous ventilation: mask ventilation, tracheal intubation.

3.8.2.Sedation with IV ketamine

3.8.3.Regional anesthesia: limited to spinal anesthesia. No peripheral nerve blocks or epidurals are performed.

The OR schedule for each day was determined during the preceding even in grounds of the surgical team. A printed OR schedule was available at 7AM each day and distributed to the appropriate sites.

3.9.**Performance**: the overall performance of the student CRNAs was satisfactory, given the limitations of the practice. Suggested areas of improvement:

3.9.1. introduction of daily machine check in accordance with ASA guidelines

3.9.2. development of regional anesthesia training program

3.10.**OR Case Load**: predominantly upper and lower extremity wounds and/or fractures requiring wound debridement and/or external Fixation. The age range included both adult and pediatric patients.

3.11.**Conscious sedation**: wound dressing changes were performed at the bedside using conscious sedation (ketamine & midazolam) for both adult and paediatric patients. The use of the Nonin Fingertip pulse oximeter was considered sufficient monitoring for these cases.

3.12.**Postop analgesia**: the principle analgesics were ibuprofen and morphine IV. Given the high patient: nurse ratio on the surgical wards the administration of opioids was sparse. When administered the ability to monitor for possible respiratory depression was minimal. A scheme for subcutaneous morphine administration for better postop analgesia was presented to the PIH Medical Director. There was insufficient time to train the Cange staff and implement the protocol.

3.13.**Chronic Pain**: the incidence of chronic pain and/or phantom limb pain in amputees is well known. Given the large number of amputees, both adult and paediatric, following the earthquake the therapeutic options were severely limited. The mainstay of treatment was NSAIDs and opioids. The Cange staff reported a high incidence of lack of therapeutic benefit from this combination. Experience of the Acute Pain Service (APS) at Duke suggested that the use of gabapentin would be opioid-sparing and provide better long term pain control. The PIH Medical Director was informed of this recommendation.

3.14.**Education**: the DMTF staff participated in teaching in the ORs and gave presentations to the student CRNAs at each of the three formal classroom sessions.

3.15.**Summary**: the anesthesia mission statement for Cange prior to deployment was well defined. Early communication with the visiting anesthesia team helped to determine the appropriate equipment to bring and to integrate the Duke anesthesia staff with the Cange anesthesia staff.

4.Anesthesia Facilities at HEUH, Port au Prince, Haiti

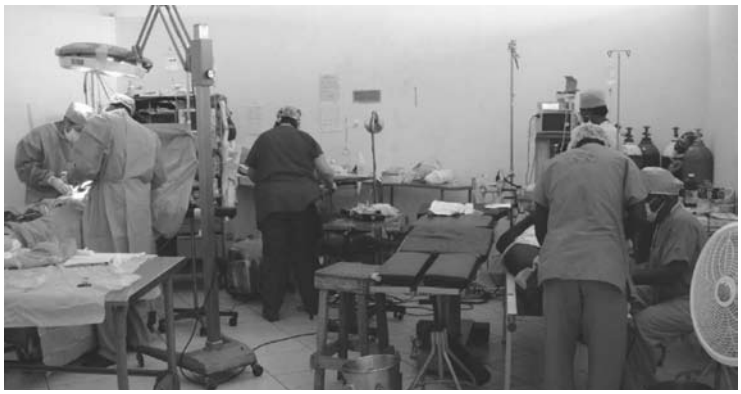
DM was deployed on February 10th to HEUH in support of the surgical team (DrsMcCann & Shapiro).

4.1.**Personnel**: Both Haitian resident anesthesiologists and CRNAs were present but no formal structure was identified, e.g. attending anesthesiologist in charge.

4.2.**Operating Rooms**: a hard standing structure had been designated as the OR accommodating a total of four operating tables within two ORs, with easy access between the two ORs. The operating tables were approximately 10 feet apart.

4.3.**Preop area**: the patients were brought from the preop tents to the OR building. Haitian staff then checked the patients into the OR register.

4.4.**Recovery**: an area had been designated as the PACU, overlapping with the preop area. Four trolleys were available for patients. The PACU was staffed by a single nurse. The equipment was limited to a single Datex-Ohmeda monitor (pulse oximeter only, no NIBP) and a single oxygen concentrator. No suction apparatus was available. On several occasions when all the trolleys were occupied the postop patients were nursed on stretchers on the floor. The patients were then returned to the postop tents which were crowded, hot and with limited nursing resources available.



4.5.**Anesthesia equipment**:

4.5.1.Anesthesia machines: each anesthesia work space had an anesthesia machine, each of a different design. Closer inspection revealed that only 1 out of the 4 monitors was fully functional. Two monitors lacked appropriate cables to transfer from parameter module data to the display screen; one monitor lacked NIBP cuff (specific connectors). No medical technician was identified to be able to repair or rectify the monitors.

The anesthetic vaporizers were of multiple manufacturers, with many lacking the agent-specific Filling device. This resulted in only one machine being able to deliver volatile anesthetic agent.

There was no wall-mounted gas supplies so all oxygen had to be supplied by oxygen tanks. There was no formal process for obtaining replacement tanks.

4.5.2.Basic equipment: all items were in limited supply. This resulted in multiple reuse of single use items e.g. oropharyngeal airways. Of note, larnygoscopes and tracheal tubes for both adults and pediatric patients were scarce in number. At the time of departure on Feb 13 there were less than 10 tracheal tubes (all sizes) within the OR.

4.5.3.Ultrasound machine: the Sonosite Titan brought by the Duke team proved to be invaluable because of the ability to provide regional blocks with the avoidance of general anesthesia (combination of limited anesthesia equipment and lack of postop care).

4.6.**Anesthesia drugs**: all were available but in limited amounts (induction agents, volatile agents, analgesics).

4.7.**Supplies**: within the OR all anesthesia equipment was located either on tables in between the PACU and the OR or in the drawers of the anesthesia machine. The equipment was disorganized and there was no formal categorization. The process of obtaining further supplies was unclear.

4.8.**Organization**: the provision of anesthesia care was haphazard. The Haitian staff reported for work at varying times and allocated themselves to an OR table/anesthesia machine. Minimal coordination with the Haitian and/or non-Duke volunteer surgical staff resulted in patients arriving at the preop area before allocation to any available OR table.

The standard working day was approximately 10AM to 4PM. The Duke team performed cases usually until 7PM with additional emergency cases on two nights.

The daily OR schedule was usually determined on the day after assessing the priority of the surgical patients present in the preop tents immediately after arriving on site at HEUH. The list often included emergency cases so the list was subject to frequent changes. Communication between the surgeon and the anesthesiologist was important so that the correct OR order was maintained.

Similar to the anesthesia practice in Cange the techniques used by the Haitian anesthesia staff were limited to:

4.8.1.General anesthesia with spontaneous ventilation: mask ventilation, tracheal intubation.

4.8.2. Sedation with IV ketamine

4.8.3.Regional anesthesia: limited to spinal anesthesia. No peripheral nerve blocks or epidurals were performed.

4.9.**Performance**: the interaction with the Haitian anesthesia staff was limited to two working days with two of the Haitian 3rd year residents. The overall performance of the residents was satisfactory, given the limitations of the practice. In particular, the residents were invaluable in Finding additional equipment when needed.

The lack of postoperative care was of grave concern as the case load was significantly different from Cange. Several patients had significant injury which would have warranted a higher level of care e.g. admission to step down or ICU. No such facility existed despite the presence of a tent designated as 'ICU'. In reality, there was no ventilator present, the only oxygen supply was by a electrical oxygen concentrator (in a facility prone to power outages) and a single portable pulse oximeter.

4.10.**OR Case Load**: predominantly upper/lower extremity wound debridement but a significant number of laparotomies for acute abdominal pain and gunshot wounds. Both adult and paediatric patients including a 4 month old for irreducible inguinal hernia. Cases were approximately 80% elective and 20% emergency. The use of the Duke surgeons was not fully utilized. Additional OR tables were available to perform surgeries but no additional anesthesia staff were available.

4.11.**Summary**: no anesthesia mission statement for HEUH was given prior to the deployment from Duke. The lack of anesthesia resources at HEUH stretched the ability of the anesthesiologist to provide safe anesthesia.

The lack of postop recovery in the PACU and in the postop tents placed greater emphasis on nerve block techniques to avoid the administration of general anesthesia.

The myriad of donated equipment from different countries meant that several items and/or configurations may have been unfamiliar to American-trained anesthesiologists with minimal experience beyond North America (e.g. gas cylinder colors, hose connections, drug names).

Several non-Duke surgeons commented upon the beneFit of having a team-dedicated anesthesiologist as the non-Duke surgeons were dependent upon the Haitian anesthesia staff to get cases started.

5.Recommendations

5.1.**Mission statement**: clear statement on where the team will be deployed, what tasks they will have and identify the anesthesia resources at that location.

5.2.**Equipment**: purchase of selected items in order to provide anesthesia (independent of host equipment). These items would be deployed and returned with the team:
- 5.2.1.compact anesthesia monitor
- 5.2.2.compact ventilator
- 5.2.3.battery-powered suction
- 5.2.4.lightweight paediatric anesthesia circuits
- 5.2.5.full set of adult and pediatric laryngoscopes
- 5.2.6.ultrasound device: used for both nerve block placement and FASTscans by ER/Trauma service.

5.3.**Staffing**: increase the ratio of anesthesia: surgeons from 1:2 to 2:2. In fact, the addition of a third anesthesiologist to 3:2 would provide the following:
- 5.3.1.better preoperative evaluation of patients
- 5.3.2.improve the coordination of the transfer of patients from preop tent to the OR
- 5.3.3.provide postop monitoring of patients, both in the PACU and in the postop tents
- 5.3.4.provide night call coverage for out of hours emergencies

5.4.**Training**: a pre-deployment module should be developed to familiarize the anesthesia staff on the following:
- 5.4.1.anesthesia machine configurations
- 5.4.2.anesthesia circuits
- 5.4.3.non-FDA approved drugs (e.g. IV diclofenac)
- 5.4.4.US-guided nerve block techniques
- 5.4.5.ketamine-based anesthesia and sedation techniques

5.5.**Simulation training**: a module for the surgical team should be developed to deal with OR emergencies:
- 5.5.1.loss of electrical power
- 5.5.2.loss of oxygen supply
- 5.5.3.emergency cricothyroidotomy

5.6.**Pain control**: an algorithm for subcutaneous morphine should be adopted This technique is not used currently at Duke and so medical/nursing staff are unfamiliar with its use. The administration of gabapentin for all amputees should be instituted.

Appendix A: Packing List

Drugs

Item	Conc x Volume	# vials
Ketamine	100 mg/ml x 5ml	40
Midazolam	5 mg/ml x 5ml	40
Ropivicaine	0.5% x 30 ml	40

Equipment

Item	Size	#
LMA	Adult (3 - 5)	2 each
LMA	Paeds (1, 1.5, 2, 2.5)	2 each
Paediatric tracheal tubes	2.5/3.0/3.5/4.0/4.5/ 5.0/5.5/6.0	2 each
Paediatric infusion set		4
Chlorascrub swab	100 per box	5 boxes
Tegarderm	10 x 12 cm	100
Tegaderm	6 x 7 cm	100
Frovas airway exchangecatheter		4
Silk tape	1 inch	10 rolls
Blunt tip needles		100
25G needles	1.5 inch	50
US gel		4 bottles
IV extension		50
Microbore extension set		50
Syringes	10ml	100

Appedix B: Personal Anesthesia Equipment List

Item	Size	#
Paediatric breathing circuit	Ayre's T-piece	2
Nonin fingertip pulse oximeter	Single	1

High-Impact AUA Articles

Marie Csete, M.D., Ph.D.
Chair, Scientific Advisory Board

Anesthesiologists are all too rarely the focus of news features in journals such as *Science* and *Nature*, so a recent feature on Sean Mackey, M.D., Ph.D. in *Nature* (Vol 461:1194-1196, 2009) is worth noting. Dr. Mackey is Chief of the Pain Management Division at Stanford, and his studies are largely conducted in human subjects; his Web site at Stanford lists four clinical trials in which patients are currently being recruited. In the *Nature* feature, the reporter for the journal describes a visit to the Stanford lab and his first-hand experience as the volunteer subject of some pain threshold testing. The reporter's comments bring home how difficult human studies are, as even highly motivated subjects have trepidation and difficulty cooperating with pain studies. Mackey takes a global approach to the study of how the brain processes pain, and the relationship of pain, cognition and emotion, and he has been at the forefront in studying complex, heterogeneous fMRI signals to quantitate the pain state. In addition to the long-term diagnostic potential of fMRI to dissect pain mechanisms and patterns, Dr. Mackey's group reported pilot studies using cognitive training to control pain intensity and unpleasantness using information from fMRI fed back to the patients in their training (*Proc Natl Acad Sci USA*. 2005; 102(51):18626). Although imaging-based feedback tools for pain are still experimental, their appeal is obvious – noninvasive procedures where the patient's investment in the therapy is a critical factor.

Maria Csete, M.D., Ph.D.

Another worthwhile, high-profile review by anesthesiologists should become a classic. Michael Alkire, M.D. (UC-Irvine Anesthesiology), Anthony Hudetz, M.D., Ph.D. (Medical College of Wisconsin Anesthesiology) and Giulio Tononi, M.D., Ph.D. (University of Wisconsin Psychiatry) contributed to the review "Consciousness and Anesthesia" in the November 7, 2008 issue of *Science*. This review is beautifully organized and illustrated, and is the perfect resource for that one lecture a year anesthesiologists are often asked to give in medical school pharmacology courses. Importantly, no matter how advanced your knowledge of anesthesiology, this review will add to your knowledge because it integrates a complex body of literature into a coherent framework.

Association of University Anesthesiologists

57th Annual Meeting

April 8-10, 2010
Grand Hyatt Denver

Program Schedule

Thursday, April 8, 2010

10:00 a.m. – 6:30 p.m. **Registration**

1:00 – 1:15 pm **Introduction and Welcome to the 57th Annual Meeting**
Thomas K. Henthorn, M.D.

1:15 – 1:30 p.m. **SAB Program Introduction and Presentation of the Resident Travel Award**
Marie E. Csete, M.D., Ph.D.

1:30 – 3:00 p.m. **SAB Oral Session #1**

- **Hospital Stay and Mortality are Increased by a "Triple Low" of Blood Pressure, BIS, and Anesthetic Level**
  Leif Saager, M.D.
- **Use of Anesthesia Databases to Advance the Field**
  Kevin K. Tremper, M.D., Ph.D.
- **Paneth Cell Activation After Acute Kidney Injury Causes Liver and Intestine Injury and Systemic Inflammation in Mice**
  H. Thomas Lee, M.D., Ph.D.
- **Molecular Imaging for Non-Invasive Detection of Renal Inflammation by MRI**
  Natalie J. Serkova, Ph.D.
- **Effect of 0.5 MAC Sevoflurane on rCBF, Memory, Auditory Activation and Connectivity – fMRI Study in Volunteers**
  Ramachandran Ramani, M.B.B.S.
- **HSP70 and HSP27 in the CSF of Patients Undergoing TAAA Procedures Predict Post-Operative Paralysis**
  James G. Hecker, Ph.D., M.D.
- **Neural Inertia is a Behavioral State Barrier That Impedes Transitions to and From Anesthetic-Induced Unconsciousness**
  Max B. Kelz, M.D., Ph.D.
- **Resident Travel Award**
  Targeted Discovery of a Small-Molecule Inhibitor of the GIRK Channel
  Daniel F. Lonergan, M.D.

3:00 - 4:30 p.m. **Break/Moderated Poster Discussion Session**

6:00 – 8:00 p.m. **Welcome Reception**
Capitol Peak Room, 38th floor

Friday, April 9, 2010

6:30 a.m. - 5:30 p.m. **Registration**

7:00 – 8:00 a.m. **Continental Breakfast**

8:00 – 8:15 a.m. **EAB Program Introduction**
Robert E. Shangraw, M.D., Ph.D.

8:15 - 9:45 a.m. **EAB Program (Part 1) - Limitations on Resident Work Hours: Is 60 the New 80?**

- **Overview**
  Richard P. Dutton, M.D., M.B.A.
- **The Institute of Medicine Evidence for Limiting Resident Work Hours**
  Lee A. Fleisher, M.D.
- **Perspective of and Debate within the ACGME**
  Neal H. Cohen, M.D.
- **Negative Consequences of Further Work Hour Limitations**
  Richard P. Dutton, M.D., M.B.A.
- **Coping Strategies for Further Resident Work Hour Limitations within Anesthesiology**
  Catherine M. Kuhn, M.D.

9:45 – 10:15 a.m. **Break/Poster Viewing**

10:15 – 11:45 a.m. **EAB Program (Part 2) - Professionalism: Perspectives from Medical School to Specialty Practice**

- **Overview**
  David J. Murray, M.D.
- **Medical School Experiences Highlighting Professionalism Objectives**
  Robert R. Gaiser, M.D.
- **Experiences and Assessment of Professionalism in a Residency Setting**
  John Tetzlaff, M.D.
- **Perspectives on Professionalism in Clinical Practice** Glenn P. Gravlee, M.D.

11:45 a.m. - 1:00 p.m. **Luncheon**

11:45 a.m. - 1:00 p.m. **EAB, SAB and Presidents' Luncheon**

1:00 – 2:00 p.m. **NIH Session – DARPA Update**
Leo Christodoulou, Ph.D.

2:00 -2:30 p.m. **ASA President's Update**
Alexander A. Hannenberg, M.D.

2:30 – 2:45 p.m. **Break/Post Viewing**

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Friday, April 9, 2010 *(cont.)*

2:45 – 4:15 p.m. **AUA President's Panel: Mentorship in Anesthesia**
Moderator: Ronald C. Pearl, M.D., Ph.D.

- **Mentorship of Anesthesiologists: A Chair's Perspective**
  Alex S. Evers, M.D.
- **Mentorship of Non-Physician Scientists**
  Richard J. Traystman, Ph.D.
- **Mentorship for Clinical Research**
  Steven L. Shafer, M.D.
- **What the Academy of Research Mentors in Anesthesiology (ARMA) is Doing to Promote Mentorship**
  Roger A. Johns, M.D.

4:15 – 5:30 p.m. **AUA Business Meeting**

Evening on your own to explore Denver!

Saturday, April 10, 2010

6:30 a.m. - 5:00 p.m. **Registration**

7:00 – 8:00 a.m. **Continental Breakfast**

8:00 a.m. - Noon **Host Program Introductions**
Thomas K. Henthorn, M.D.

Host Program
Arts and Humanities in Health Care

- **Altitude Medicine and Research**
  Introduction by Thomas F. Hornbein, M.D.
  Peter H. Hackett, M.D.
- **How Film Addresses Power and the Unintended Consequences of Surgical Procedures**
  Howie Movshovitz, Ph.D.

10:00 – 10:30 a.m. **Break/Poster Viewing**

- **The Art of the Mentally Ill (Ouside Art)**
  Henry N. Claman, M.D.
- **International Perspective on the Health Care Reform Debate**
  T.R. Reid

Noon. - 1:30 p.m. **Luncheon**

Noon – 1:30 p.m. **Resident Luncheon**

1:30 - 3:00 p.m. **SAB Oral Session #2**

- **Methylphenidate (Ritalin) Restores the Righting Reflex in Rats During Continuous Exposure to Isoflurane**
  Ken Solt, M.D.
- **Tryptophan Metabolites and the Risk of Delirium in Intensive Care Unit Patients**
  Pratik P. Pandharipande, M.D., M.S.C.I.
- **Resident Travel Award**
  Modulation of the Post-Surgical Hypercoagulable State: Efficacy of Intravenous Heparin and Possible Implications for Prevention of Organ Failure
  Sara S. Cheng, M.D., Ph.D.
- **Toll-Like Receptor 2 Contributes to Cardiac Dysfunction and High Mortality During Polymicrobial Sepsis**
  Wei Chao, M.D., Ph.D.
- **The Association Between Cost and Quality in Trauma: Is Greater Spending Associated with Higher-Quality Care?**
  Laurent G. Glance, M.D.
- **The Brain Metabolomic Profile During Isoflurane Anesthesia Differs from Propofol Anesthesia: Implications for Agent-Specific Neurotoxicity**
  Rany Makaryus, M.D.
- **IL-1 Regulates Incisional Wound Pain and Chemokine Production**
  Gary A. Peltz, M.D., Ph.D.
- **Now Everyone Can Make Human Embryonic Stem Cells: An IPS Update**
  Marie E. Csete, M.D., Ph.D.

3:00 – 4:00 p.m. **Break/Moderated Poster Discussion Session**

4:00 – 5:00 p.m. **SAB Plenary Session - Neurotoxicity of Anesthesia and/or Surgery: Fact or Fiction**
Mervyn Maze, M.B., Ch.B

6:15 - 10:00 p.m. **Reception and Dinner at The Brown Palace Hotel**

AUA

Officers and Councilors-at-Large

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Mark Your Calendar!

May 12-15, 2011

AUA 58th Annual Meeting

Loews Philadelphia

Philadelphia, Pennsylvania