



AUA

Association of University Anesthesiologists

Update

Summer 2011

Contents

SAB Report:	
AUA 2011 Annual Meeting Highlights	3
EAB Panels:	
AUA 58 th Annual Meeting	4
AUA President's Panel	7
Announcing a New Regular Column From FAER	10

ASA President Address at AUA Meeting: A Sense of Purpose

Andrea Kurz, M.D.

Department of Outcomes Research
Cleveland Clinic

President Warner's presentation to the AUA was primarily concerned with how well anesthesiologists are serving our patients but also our specialty: do we properly advocate for our patients; do we properly train the emerging generation of physicians; and does the ASA encourage new knowledge and expansion of perioperative services that make practices safer, stronger and indispensable?

Listening to his talk gave me the impression that the ASA is working hard in the political and professional realms to consolidate gains for our specialty, and consequently for our patients. A key part of the presentation dealt with how health care reform will impact the profession and what the ASA can do to benefit its membership. Dr. Warner went into detail while discussing the impact of current and potential regulations, touching on the impact of health care reform (PPACA) and noting the requirement for electronic record keeping by 2012.

On the broader political front, ASA is actively demonstrating to policymakers how our field offers increased value to the health care system through improved perioperative care, with the end result being improved outcomes for patients. In addition, ASA has partnered with other medical organizations and societies in order to advance common goals. For example, ASA partnered with 23 leading surgical organizations with

the goal to improve perioperative care. Furthermore, it started collaboration with 12 pain societies to expand research and education in this field. As a final point on the advocacy front, Dr. Warner discussed current themes, noting that patient safety issues within regulatory agencies and funding for patient safety research need more attention.

The presentation's second prong concerned how the profession is training the next generation of practitioners. Anesthesiology is one of the top five specialty choices of the newest generation of medical school graduates – which certainly speaks well of the long-term prospects of our profession. Are these new practitioners being taught what works currently, as well as being readied for the future? Will the new crop of anesthesiologists prove themselves indispensable in the O.R. but also outside of the O.R. in the field of perioperative medicine? Some of Dr. Warner's other concerns include whether new anesthesiologists are willing to step outside of the O.R.s in order to promote safety and pursue perioperative care. Can graduates contribute to the full scope of perioperative practice, including acute care, preoperative and predictive medicine, intra- and postoperative care, critical care, acute and chronic pain as well as palliative and hospice care? Consequently, the current needs are to better understand what to teach and to create more interest in generating new knowledge.

Continued on page 2



ASA President Address at AUA Meeting

Continued from page 1

If they are to conduct meaningful research in our field, a larger portion of NIH funding will need to be secured. Dr. Warner expressed concern that anesthesiologists currently rank – along with family medicine practitioners – lowest when it comes to NIH funding per faculty member. He closed this portion by noting that determining what we teach is critical to the success of the next generation. This can be partly accomplished by expanding and updating the current curriculum.

The final portion of the talk covered the importance of research. The central question is: Are we encouraging new knowledge to improve patient care? As noted above, anesthesiologists need to capture a greater portion of NIH funding. For its part, the ASA supports its foundations with 10 percent of its annual budget and encourages members to support groups such as, FAER, APSF and WLM, as well as to contribute to the

“If they are to conduct meaningful research in our field, a larger portion of NIH funding will need to be secured. Dr. Warner expressed concern that anesthesiologists currently rank – along with family medicine practitioners – lowest when it comes to NIH funding per faculty member.”

Lifebox Campaign, which seeks to place pulse oximeters in every O.R. Funding research is vital, because research-driven advances make us leaders in patient safety and outcomes research strongly supports broadening our field of interest from pure intraoperative to perioperative care.

Our young investigators compete well for NIH funds, but there are not nearly enough of them. Anesthesiologists per se are very academically oriented. The journal *Anesthesiology* remains the highest rated journal in our specialty, with an impact factor of 5.1 – an all-time high. Dr. Warner stressed the importance of involving young anesthesiologists in research. Without a new generation of researchers, the specialty will find it difficult to improve patient outcome and safety.

Dr. Warner closed his talk with a call for anesthesiologists to be leaders in advocating for patient safety, in our communities and in research - calling specifically for increased research into opioid-related respiratory depression, anticoagulation, catheter and wound infections, facility-acquired pneumonias, perioperative inflammatory complications and cognitive impairment. We anesthesiologists know what our major safety problems are, but we still do not take big steps to eliminate them. Only in a union of forces will we be able to attack these problems.



Mark A. Warner, M.D., ASA President



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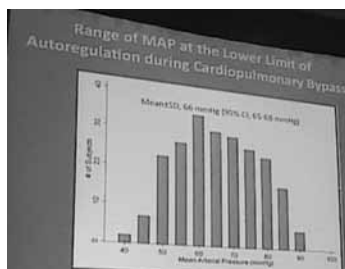


SAB Report: AUA 2011 Annual Meeting Highlights

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

A total of 105 abstracts were submitted to the meeting this year; about half were clinical and half were basic science reports. Eight departments submitted nominations for two Resident Travel Awards, and 14 departments nominated outstanding young anesthesiologists for the two Junior Faculty Awards. This year, the highlights will focus on these and other award winners who presented at the meeting.

The two Resident awardees were Charles Brown, M.D. from Hopkins and Thomas M. Austin, M.D. from Vanderbilt. Dr. Brown's presentation, "Determination of optimal blood pressure for cardiopulmonary bypass based on near infra-red spectroscopy autoregulation monitoring vs. estimates from perioperative blood pressure"



described initial work in 232 cardiac surgery patients using NIRS to guide decisions about BP management. They found that the median for the lower limit of autoregulation was 66 mm Hg, but the range in these older patients was wide, between 40-90 mm Hg. The work suggests the potential usefulness of NIRS in identifying the autoregulation target, especially as preoperative MAP, diabetes, history of hypertension, or stroke did not predict the lower limit of autoregulation. Further validation of the technique is required and is ongoing. Dr. Austin's presentation, "Inhibition of KCC2 in mouse spinal cord neurons leads to hypersensitivity to thermal stimulation," described results of intrathecal delivery of a small molecule inhibitor of the neuron-specific potassium-chloride channel in a mouse model. Mice that received the treatment had a significantly increased latency to withdrawal from thermal stimuli, whereas delivery of a structurally related but inactive compound did not change pain behavior. These early results point to a new class of drugs as candidates for development for therapy of pain.

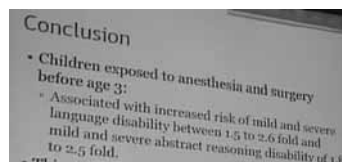
Caleb Ing, M.D. from Columbia and Chad Brummett, M.D. from Michigan received the AUA's first-ever Junior Faculty Awards, recognizing excellence in research. Dr. Ing addressed "Long-term differences in cognitive and language ability after exposure to surgery and anesthesia in infancy" based on analysis of a large database from Western Australia (start date 1989). The database was originally created to study diet, and the strength of the data lies in the repeated direct neuropsychiatric and language tests of the children as well as behavioral questionnaires over 16 years of longitudinal assessment. Three hundred sixty eight out of 2,868 children in the cohort had an anesthetic exposure before the age of 3 years. Children who were exposed to anesthesia had small but statistically significant poorer language and reasoning scores, both areas that cannot be addressed in animal studies. A vigorous question-and-answer period focused on the difficulty of interpreting these data and the need for

further study, coordinated with ongoing efforts such as SmartTots (IARS and FDA) to define potential anesthetic neurotoxicity in children. Dr. Brummett's talk, "Perineural dexmedetomidine added to ropivacaine for sciatic nerve block in rats prolongs the duration of analgesia by blocking the hyperpolarization-activated cation current (I_h current)," focused on the mechanism of dexmedetomidine extension of nerve blocks. Neither a1 nor a2 blockers had an effect on the dexmedetomidine analgesia in this context, and similarly pretreatment with an I_h current blocker did not alter the dex-mediated prolongation of analgesia. But forskalin (an I_h current agonist) pretreatment resulted in significant reductions in paw withdrawal latency indicating reversal of the analgesic effect. So although dexmedetomidine is used as an a2 agonist clinically, it also appears to mediate analgesic effects through the I_h current.



Marie Csete, M.D., Ph.D.

The last talk of the first SAB session was an exciting one by Phil Morgan, M.D. from the University of Washington, which grew out of previous studies pointing to the importance of neuronal resting membrane potential in the anesthetic response (hyperpolarization contributing to anesthetic action). Using the nematode *C. elegans*, Dr. Morgan's group studied worms engineered to express channelrhodopsin-2 (which can be activated by blue light) in all cholinergic neurons (selective transgenic). Light activation of the channel results in hyperpolarization of the neurons, so that selective control over the cholinergic



neuron population is possible. The audience let out a bit of a gasp at a film of worms anesthetized by halothane (4 percent) when they started to move with withdrawal of the light source, and then quickly became immobile when the light was turned back on. The power of optogenetics (use of these light activated channels) to understand neurologic circuit behavior is now extended to the dissection of anesthetic mechanisms.

The poster sessions were lively, and the SAB chose two for recognition (Poster Awards). Dr. Lynette Mark's (clinical) poster described the creation of a Difficult Airway Response Team, or DART, at Hopkins, prompted by adverse events during resuscitations outside the operating rooms. The multidisciplinary team, including attendings from several disciplines, developed protocols (including rapid transport to the O.R.) for responding to airway emergencies, and in the process identified factors that

Continued on page 9

EAB Panels: AUA 58th Annual Meeting

Robert E. Shangraw, M.D., Ph.D.
Oregon Health & Science University

The Educational Advisory Board (EAB) presented two panels at the 2011 AUA Annual Meeting in Philadelphia last May. The first, moderated by Randy Schell, M.D., of the University of Kentucky, was titled, “Do ‘Innovative’ Teaching Methods Improve Outcome in Anesthesiology Resident Education? - A Pro/Con Debate.” The second, moderated by David Murray, M.D., of Washington University-St. Louis, was titled “Proficiency-Based Credentialing: Current Evidence for Performance Measure Benchmarks.”

Do “Innovative” Teaching Methods Improve Outcome in Anesthesiology Resident Education? - A Pro/Con Debate

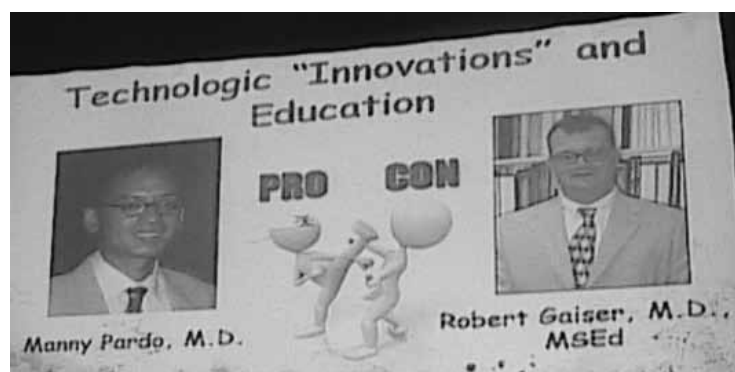
The panel goals were to define what is meant by innovative technology as used in anesthesiology resident education, to review results of a recent online survey distributed among the AUA membership regarding use of new technologies, to distinguish between opinion and evidence as regards to efficacy, and to compare arguments for and against utilization of new technologies as they affect resident education in 2011. Schell gave an overview in which he introduced new, largely computer-based and/or online formats for learning. He presented arguments for innovative technologies, which included decreased hours of graduate medical training, disparate scheduled of learners, improvements of simulators to more realistically introduce new material before actual patient problem encounters, and appearance of a new generation of learners more comfortable with technology-based learning than their predecessors.

Schell first discussed collaborative websites (wiki’s) and podcasts. He gave the example of the University of Kentucky website that allows individualized access to teaching materials online. A podcast allows either audio or video-based materials to be downloaded to portable media players via a slightly different medium. The audience used an audience response system to vote on whether these techniques had eclipsed the classroom today, and a vast majority of meeting attendees disagreed with this statement. Schell next presented virtual reality methods, including the patient simulator with which most of the audience was familiar. Potential advantages of virtual reality techniques are that training can be repeated in a risk-free environment, which is ethically better, and allow preparation for rare events such as cardiac arrest. Simulation is used not only for technical and awareness improvements, but also to optimize team training. It has become a component for MOCA recertification. Schell reviewed results from the AUA member survey on technology in education. Characteristics of the 346 respondents reflected AUA demographics with 40 percent in the 46-55 year old bracket and another 33 percent at 56-65 years old, but 80 percent of the respondents were male. Fifty-six percent reported that they enjoy using new technologies. To wit, 80 percent used wiki, 79 percent used web-based learning modules, and 60 percent used podcasts; somewhat surprisingly, given its penetration into

academic anesthesiology, only 50 percent reported using the human patient simulator. Real-time audience response at the panel indicated a higher level of use. Survey reasons for using new technology in anesthesiology resident education were that the new generation of learners expected it (80 percent), it allowed more efficient learning (67 percent), and to compete for applicants (44 percent). Meanwhile only 43 percent felt that it supplanted clinical training. When asked whether innovative technologies improved quality of resident training, 41 percent agreed or strongly agreed, 38 percent reported it did not alter outcome, and 22 percent disagreed or strongly disagreed.

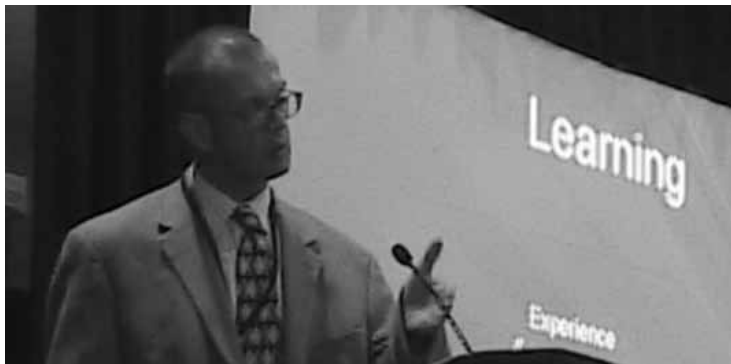


Robert E. Shangraw, M.D., Ph.D.



Manuel Pardo, M.D., of the University of California, San Francisco advanced the pro argument that innovative technology improves resident education. He dissected how the different new technologies impact resident education. Pardo mentioned that much clinical care in anesthesia already involves electronic gadgets (e.g. ultrasound, clinical monitors), making their use in educational formats not a big step intellectually for the learner. Incorporating technology of the electronic medical record, for example, to allow retrieval can be used to strengthen real-time learning from clinical experiences. Podcasts allow archiving of both local lectures and outside lectures for review at a convenient time, although at the potential expense of decreased on-site lecture attendance. They allow “on demand” learning at convenient times. Wiki’s proffer the advantage of shared knowledge with peers, for example, in use of key words to prepare for the ABA in-training and written examinations. Set up correctly, they allow rapid peer review of statements among the participant group. Pardo indicated that the advantages of the high-fidelity patient simulator, as introduced by Dr. Schell earlier, are such that it has already become incorporated into the ABA rubric for re-certification through the MOCA process. Finally he touched on web-based learning modules that provide

advantages of better access of information, more rapid and timely updates, and the potential to hyperlink to cross-reference data. Younger learners seem to prefer this type of module to conventional learning methods such as textbooks and lectures. In summary, Pardo reviewed the Kirkpatrick schema of training evaluation. First was “reaction”, that is how the learner felt about the training. The little available data indicate that, done right, the new technologies are more entertaining and more popular. Second is “learning” itself—how effectively the method imparts knowledge. He presented data that online learning can be more efficient, but learning is largely undiscovered for technology in graduate medical education. The third component is “behavior”, that is, how the new method(s) alter behavior. This requires a system developed to measure validated endpoints such as lifelong learning, which is still absent for new technologies. The final level is “results”, by which Kirkpatrick would be applied to show that patient care itself is improved. Unfortunately this definitive level of efficacy for comparative teaching method using technology is still largely unexplored territory.



Robert Gaiser, M.D., of the University of Pennsylvania, argued that the technological innovations fail to improve resident education by any measure. He posited that... The keys to effective resident education are pretty simple: Quantity of time spent reading, in particular a definitive textbook in anesthesiology, and clinical exposures alongside an effective faculty... anesthesiologist. Gaiser cited an article by Philip et al. (2006) which showed that 10 hours per week spent studying led to a high probability of a passing score on the anesthesiology in-training exam. Gaiser countered the argument about the Kirkpatrick reaction by quoting a study by Wenk et al. (2009) showing that use of simulation increased the confidence of medical students, without any concomitant improved performance, compared to more conventional problem-based learning techniques in a trial of anesthetic emergencies. He gave a number of literature references demonstrating that, in essence, clinical experience improved clinical acumen and performance. Gaiser argued that the fact that the most powerful predictor of satisfaction with web-based learning was download speed (Chumley-Jones et al. 2002), rather than intellectual content, which was concerning. Finally he mentioned that technology-based methods introduced new and exacerbated some old problems, with respect to patient privacy and concerns about professionalism that had been much smaller in scope previously.

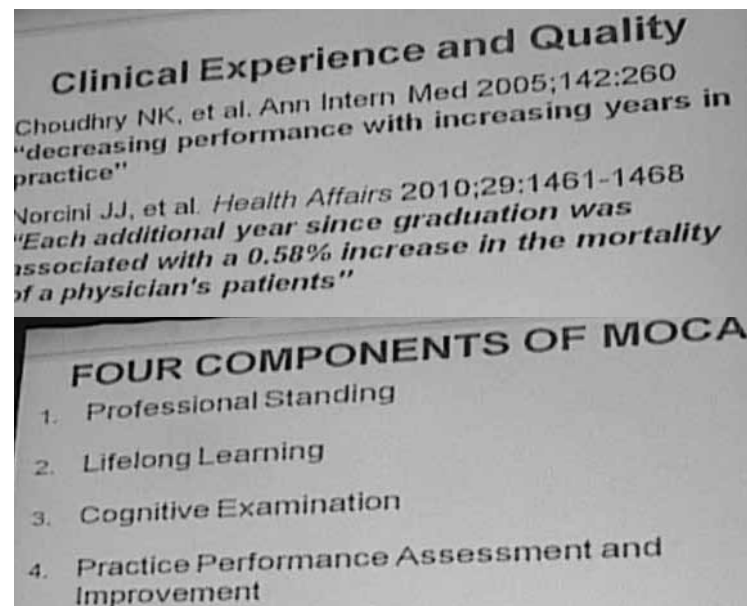
There was a lively discussion among the audience, the upshots of which were that new technologies are here to stay, they remain to be proven in terms of improvement of resident education, they represent a largely evolving medium, and they deserve to be tested in a fair and rigorous manner before being dismissed as gimmicks.

Proficiency-Based Credentialing: Current Evidence for Performance Measure Benchmarks

Panel goals were to describe the processes that led to development of MOCA components, to evaluate the evidence for simulation and task training as a mechanism to assess and improve clinical skills, to assess how peer- and 360-evaluations work to optimize communication and professional skills, and foster creation of a framework to decide how performance-based measures can be applied to improve skills and raise practice standards in academic anesthesiology. David Murray, M.D., overviewed credentialing techniques, first introducing the historical PHOG (“prejudices, hunches, opinions and guesses”) approach described by Harden et al (2000). Credentialing has ostensibly become more systematic and rigorous over time, but the most visible mechanisms affecting anesthesiologists have not been well understood in terms of either application or rationale. The panel was designed to improve transparency of credentialing process.

Daniel Cole, M.D., from the Mayo Clinic- Phoenix, discussed the rationale for the ABA Maintenance of Certification (MOCA), which affects diplomats whose initial certification was obtained in 2000 and later whose certification is time-limited to 10 years. He showed a graph indicating that in 2016 the number of MOCA-dependent anesthesiologists will exceed the number of time-unlimited diplomats, and the preponderance will enlarge from then. Cole noted that specialty boards have a public

Continued on page 6



EAB Panels

Continued from page 5

responsibility to provide accountability, transparency, and ensure quality clinical care. He cited a January 2011 article in the New York Times, entitled “As Doctors Age, Worries About Their Ability Grow”. He referred to a 2003 Gallup poll revealing

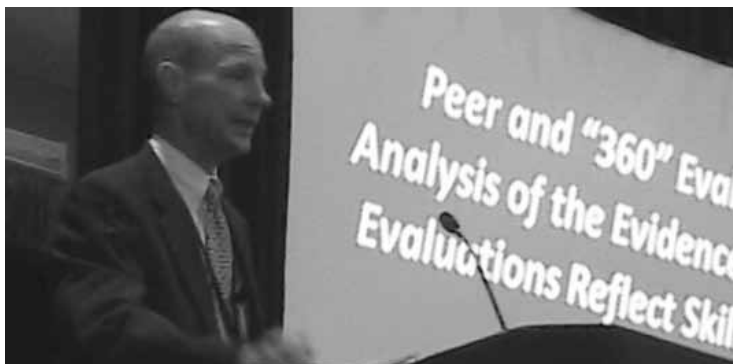


that 54 percent would very likely, and another 27 percent would somewhat likely, change doctors if that physician’s board certification had expired. MOCA, he explained, is a dynamic process designed to ensure current expertise, which is distinct from the snapshot of time-unlimited board certification that showed expertise at a fixed past time. He reviewed the four MOCA components as professional standing, lifelong learning, cognitive examination, and practice performance assessment. Most of the AUA members are aware of the ingredients that go into each of these components.

Dr. Murray, who heads the simulation program at Washington University, reviewed the evidence that simulation is a good surrogate for skills in clinical practice. He showed data from a survey of 225 anesthesiology training programs. Asked how often residents used the simulator, the most common responses were a few times a year (39 percent), monthly (25 percent) and then minimal (14 percent). He discussed the validity of surrogate endpoints in simulation, as it appears that simulation may only be truly valid for relatively narrow-defined clinical scenarios. Another issue is whether the use of simulation actually improves clinical practice, and Murray gave the example of esophageal intubation and how the simulator might not be of high-enough fidelity to mimic a real episode (e.g. Olympio et al, 2003). But when the fidelity is good it can improve airway skills, line management, and surgical competence at laparoscopy. Murray noted that scoring of performance is an essential element of the simulator curriculum, although this comes at the expense of perhaps raising student anxiety and is subject to risks of inter-rater variability. A curriculum employing simulation has to be carefully designed. Murray shared data supporting that within limits, simulation is good for assessing psychomotor skills and at developing teamwork and communication skills within working groups.

Edward Sherwood, M.D., from the University of Texas Medical Branch, Galveston, critiqued peer- and “360”- evaluations with respect to how these methods accurately reflect skill in practice. Sherwood explained that “360” techniques are a

The Simulation Centers at Washington University School of Medicine



collection of views from peers, colleagues and patients designed to make a judgment about performance. Increasingly these are used to assess doctors, for re-certification, annual reviews (for faculty) and trainee evaluations. Done correctly, it can provide insight into technical skills, cognitive function, professionalism, humanistic qualities and communication skills. But it does present some uncertainties with regard to validity and reliability. Potential problems are subjectivity (stability), negative or positive bias, clarity of purpose, and emerging areas with little hard data to support it. Questions are: how many reviews are needed? How should the respondent pool be chosen? How should the survey be performed? Sherwood quoted three studies demonstrating that about 10 reviewers are needed to achieve a reliability coefficient of greater than 0.7. There are also specific biases that characterize certain respondent groups: Self-selected reviewers, fellow residents and close professional relationship were each associated with leniency or positive bias. Further, when assessing residents, nurses were more demanding with respect to professionalism issues, and less demanding with respect to technical skills, vis-a-vis attending faculty reviewers. Peer reviews tend to be more time efficient and less costly than 360 reviews. But they would be difficult to utilize for anesthesiology where peers do not observe one another on a regular basis. Sherwood concluded that 360 evaluations are easy to perform, at relatively low cost, are relatively well received by subjects, and have the potential to provide good assessment of clinical skills. Their disadvantage is that there is no evidence that they can effect behavioral change or improve skills. Therefore, Sherwood noted, they have limitations as a stand-alone tool, but can be useful in combination with other forms of assessment.

Group discussion at the end centered on how the limitations of each of the techniques must be considered along with their respective strengths to get the most accurate information regarding the process of credentialing for board certification, hospital privileges, or other important applications to certify expertise.

AUA President's Panel

Charles W. Emala, Sr., M.S., M.D.
Henrik H. Bendixen Professor of Anesthesiology
Vice Chair for Research
Department of Anesthesiology
Columbia University



The AUA President's Panel took place at the AUA 58th Annual Meeting on Friday, May 13 in Philadelphia. Titled *Large Database Research Today and in the Future: AIMS and AQI*, the panel was moderated by Kevin K. Tremper, M.D., Ph.D. (University of Michigan). Jeffrey H. Silber, M.D., Ph.D., Director of the Center for Outcomes Research at Children's Hospital of Philadelphia (www.research.chop.edu/programs/cor/studies.php), presented an overview of two Medicare database studies in a lecture titled "Large Administrative Database Research: Medicare and Beyond."

The first set of studies originally published in *Health Services Research*¹ and *The Milbank Quarterly*² was used to address the controversy of "aggressive clinical treatment style" and its impact on surgical outcomes. Aggressive treatment style, as defined by the Dartmouth Atlas of Health Care (www.dartmouthatlas.org), has been implicated as an important factor contributing to excessively high medical expenditures and had led to publications in the popular press suggesting that high Medicare expenditures were not only financially wasteful but also increased surgical morbidity. Dr. Silber's study sought to determine the association between aggressive treatment style and surgical outcomes by reviewing 4,558,215 elderly Medicare admissions to 3,065 hospitals for general, orthopedic and vascular surgery between 2000-05. In contrast to the findings of the Dartmouth Atlas of Health Care, an aggressive treatment style was not associated with significantly increased complications, and in fact was associated with significantly reduced odds of mortality and failure to rescue.¹ The authors concluded that public health policy should consider that there may be improved outcomes associated with patients undergoing surgery in hospitals with a more aggressive treatment style.

The second Medicare database study highlighted by Dr. Silber was the Obesity and Surgical Outcomes Study (OBSOS) that used two styles of multivariate matching from administrative databases to study the relationship between obesity and surgical outcomes in Medicare beneficiaries. Between 300-400 charts

of Medicare patients undergoing hip and general surgical procedures were extracted from each of 47 hospitals in Texas, New York and Illinois. Multivariate matching was utilized to compare obese and non-obese patients. One analysis was performed with "limited" matching when groups were matched for only age, race and procedure. A second "complete" match utilized the limited match plus 30 variables, including covariates such as diabetes, heart failure and laboratory values on admission. The results of both matches indicated that obesity did not affect survival up to 180 days but had a large impact on length of stay and re-admissions due to increased complications. This obesity effect persisted after extensive adjustment for those comorbidities associated with obesity. Additionally, the obesity group incurred a 10-percent increase in costs but yielded only a 3-percent higher payment for medical services, suggesting that Medicare should account for obesity in their risk adjustment and



payment algorithms. Dr. Silber concluded by noting that Medicare is investing in new measure developments to take advantage of the electronic medical record (EMR) and that outcome studies utilizing matching and follow-up data will improve as the EMR improves.

Sachin Kheterpal, M.D., M.B.A., from the University of Michigan and the home of the multicenter perioperative outcomes group (MPOG) (<http://mpog.med.umich.edu>) database, was the next to speak. Dr. Kheterpal emphasized that the quality of outcomes research using databases was dictated by the quality of the data entered and the innovative use of multiple data sources. He noted that not many large, blinded, randomized control trials occur in perioperative medicine due to the limitations of an intensive intervention in a vulnerable population in clinical settings where randomization may be ethically challenging. However, random clinical decisions (also known as "clinical equipoise") are rampant, which is optimal for observational research. He noted that different types of clinical databases had

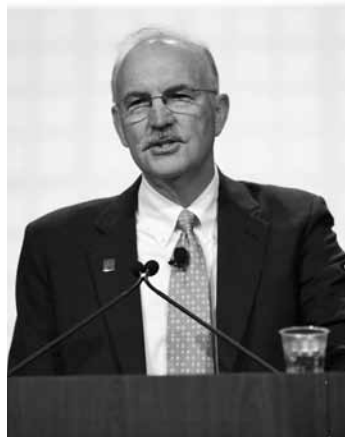
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AUA President's Panel

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advantages and disadvantages, and MPOG is leveraging the strengths of the databases being merged. Anesthesia databases are excellent for data related to monitoring, anesthetic technique and intraoperative medications given but are limited in that they do not include outcome information beyond the PACU, have limited laboratory data and are inconsistent in the quality and breadth of the history and physical performed. Classical surgical registry databases often include validated data collection, risk adjustment and long-term outcomes but are devoid of intraoperative patient data and static over time. Billing databases use universally accepted coding and consistent lexicons but are biased toward more accurate collection of expensive interventions, and capturing charges is not synonymous with capturing accurate clinical care. Finally, clinical results databases offer an easy interface and definitive outcome measures (e.g., troponin, creatinine, head CT), but lab results don't explain the disease and offer only a partial view of the patient. Merging the best data content of each of these four types of databases into one is the focus of MPOG. Some specific features of MPOG include the use of automated processes to extract data from each institutional source, the flattening of many data points (e.g., intraoperative vital signs) into logical structures and the forwarding of all data to a central source every six months by each participating institution. Participants can access their own data but need to submit 10,000 cases to the database before gaining peer-reviewed access to data provided by other centers. The University of Michigan is the coordinating center, and the more than 40 medical centers – academic and private practice – have signed up to participate. MPOG has currently collected, extracted, mapped and de-identified 881,850 anesthesia cases from six institutions (University of Michigan, Massachusetts General Hospital, Columbia University, Oregon Health & Science University, University of Colorado and University of Vermont) across four anesthesia information systems (GE Centricity, iMDSoft Metavision, Phillips Compurecord and PICIS Caremanager). MPOG will be accepting proposals for research protocols by June 2011. Interfaces to Epic and Innovian information systems are upcoming.

Some unique features of the data available within MPOG to members include a blinded record index where data is merged using social security numbers, after one-way hashing of SSNs (a form of encryption) using an algorithm that can't be reversed; mapping of all medications to the national RxNorm system to allow



Kevin K. Tremper, Ph.D., M.D.

categories of medications; merging drugs within a class together (e.g., beta-blockers).

Some of the research questions that could potentially be answered by MPOG data include studies of the variation in anesthetic management for a common procedure, the clinical impact of national drug shortages, whether anesthetic variation explains part of the variation in risk-adjusted outcome for major procedures or whether intraoperative hypotension matters to the brain, heart or kidney. Dr. Kheterpal concluded with several precautionary statements regarding the use of such databases. He warned that data quality is a major issue and that users must admit to the limitations of the data. He suggested that focused, testable hypotheses should be the starting point, not the data. A perioperative clinical research committee reviews proposal applications that seek to use the data. The committee expects research applications to MPOG to include a fully detailed introduction with literature review, methods and statistical plans.

The third and final speaker at the AUA President's Panel was Richard P. Dutton, M.D., M.B.A., Executive Director of the Anesthesia Quality Institute (AQI) (<http://www.aqihq.org>). Dr. Dutton's talk was titled "Nationwide Anesthesia Database Research: Is There Science Beyond Quality Management?" The AQI is a nonprofit 501(c)-3 corporation formed in 2008 whose vision is to become the primary source for quality improvement for the clinical practice of anesthesiology. Any organization using electronic or paper anesthesia records can join, and the primary motivations for joining include meeting regulatory requirements and generating comparative benchmarks. The data warehouse that houses anesthetic data within AQI is known as the National Anesthesia Clinical Outcomes Registry (NACOR). NACOR is updated quarterly. Available datasets include 1) post-operative nausea and vomiting rates by facility, provider and type of case; 2) ASA physical status of patients by facility; 3) CPT duration by facility; and 4) events by ASA Physical Status.

The Anesthesia Incident Reporting System (AIRS) was activated in early May 2011 for AQI participants and allows for the anonymous entry of any interesting anesthetic case or near miss. Full access to AIRS is anticipated in October 2011. Dr. Dutton's central question of "Is there science beyond quality management?" was answered with an emphatic "yes." An example of clinical research that the AQI could support was addressing questions of anesthetic safety, efficacy and whether a specific intervention was helpful toward positive outcomes. AQI's collaborators currently include the MPOG group; MPOG and AQI are partnering for grant writing efforts to the Agency for Healthcare Research and Quality (AHRQ). Examples of



Richard P. Dutton, M.D., M.B.A.



the usefulness of automated data for addressing scientific clinical questions would include 1) studying rare events where randomized trials can't be done; 2) studies where the context of data collection is critical for comparison (e.g., a private practice group might document postoperative nausea/vomiting rates by a phone call on postoperative day one while a group in university practice may only document nausea/vomiting incidence up until the time of PACU discharge). Dr. Dutton noted that possible outcomes of AQI efforts may include a better understanding of the standard of care. This will enable interpretation of clinical trials based on "one size fits all" exemplified by the ARDS Clinical Network (ARDSnet) Mechanical Ventilation Protocol Summary http://www.ardsnet.org/system/files/6mlcardsmall_2008update_final_JULY2008.pdf or the Transfusion Requirements in Critical Care (TRICC) Study.³ In contrast, many clinical questions do not lend themselves to standardized treatments, and more importantly to randomized clinical trials, because these types of trials don't reflect the complexity and diversity of actual clinical practice. Thus "pragmatic" or "practical" trials are attracting increasing attention.⁴

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SAB Report Continued

Continued from page 3

led to suboptimal response and outcomes. The program took two years to establish, including intensive education efforts, but initial results suggest that DART had a positive impact at Hopkins with significant reduction in complications from airway management during resuscitations after the program was implemented. Dr. Mark reported that similar programs will be developed for other Maryland hospitals. Dr. David Eckmann's (basic science) bioengineering presentation described his work to develop a modified chitosan surface for use in medical devices such as catheters. Chitosan is a natural (and therefore biocompatible) polymer, which Dr. Eckmann's group modified chemically and tested for antibacterial properties. His initial results suggest that the novel chitosan strongly suppresses bacterial growth and could be very useful in implanted devices because it resists bacterial growth and because of its biomechanical characteristics. Mammalian cell adhesion to the chitosan has not

"Children who were exposed to anesthesia had small but statistically significant poorer language and reasoning scores, both areas that cannot be addressed in animal studies."

yet been tested. Dr. Eckmann reports that a patent application is being prepared based on this work.

Many thanks to the outgoing members of the SAB: Helene Benveniste, M.D., Ph.D. (Stony Brook), Lucy Waskell, M.D., Ph.D. (Michigan) and Zhiyi Zuo, M.D., Ph.D., (Virginia) for their help. SAB members remaining on the committee are Andrea Kurz, M.D. (Cleveland Clinic), Charles Emala, M.D. (Columbia), Randal Dull, M.D., Ph.D. (Utah), Margaret Sedensky, M.D. (University of Washington), and Doug Raines, M.D. (Mass General). Welcome to new members of SAB! — Dolores Njoku, M.D. (Hopkins), Dean Andropoulos, M.D. (Texas Children's) and Pamela Flood, M.D. (soon to be at UCSF). Please contact the SAB with suggestions for the meeting next year in Cleveland.

Editor's Note: Electronic files from many of the posters presented at the 2011 AUA meeting can be found on the members only section of the AUA webpage.

Announcing a New Regular Column From FAER

Denham S. Ward, M.D., Ph.D.
FAER Board Chair and Incoming President



The Foundation for Anesthesia Education and Research (FAER) has partnered with the AUA to advance medicine through education and research in anesthesiology since FAER's incorporation in 1986. Since then, AUA has donated nearly \$600,000 to FAER; this funding has been instrumental in supporting the research of promising anesthesiologists, encouraging residents to pursue academic research and steering medical students toward anesthesia and perioperative medicine.

In addition to maintaining generous financial support for FAER, this year AUA provided time on its program for an annual FAER update, given by Vice Chair of the Board James R. Zaidan, M.D., M.B.A. Also at this year's AUA Annual Meeting, the annual dinner celebrated FAER's 25th anniversary. At the reception and dinner, former FAER President Carl C. Hug, Jr., M.D., Ph.D. talked about FAER's 25th anniversary and the wonderful work of outgoing President Alan D. Sessler, M.D.

FAER's annual spring board meeting is held just prior to the AUA meeting, and it is at this meeting we make grant funding decisions. I am pleased to announce that we funded a total of 13 grants, comprising 38 percent of the applications received. The names and projects of these grant awardees will soon be announced on the FAER website and in the "FAER

Report" column in the *ASA NEWSLETTER*.

For the past several years, the FAER Academy of Research Mentors in Anesthesiology has been working to expand its activities, enhancing mentorship and development of young investigators in anesthesiology. This year, under the leadership of Roger Johns, M.D., the Academy of Mentors partnered with the Scientific Advisory Board of the AUA to pair a mentor from the Academy with junior faculty investigators, inviting them to present their work at the AUA. The program was met with great enthusiasm, and 58 mentor-mentee dyads were created. The idea was to give junior faculty the opportunity to meet with an established investigator in our specialty, not only to discuss their science but also their goals and the path to academic growth and development.



Denham S. Ward, M.D., Ph.D.

The mentees obtained an additional role model, a validation of their choice of an academic career, and a new contact outside of their department with whom they can consult in the future and who can potentially help open doors to academic success. Feedback has been very positive from both the mentors and mentees, and this program will now be a

regular event at the AUA meeting. We hope this program will increase both the quantity and quality of grant applications submitted to FAER.

The latest FAER/AUA partnership is this column, which will make a regular appearance in future editions of the *AUA Update*. Personally, I am humbled and grateful for the opportunity to move FAER forward in the tradition of past important leaders who have served the organization. With the help of all of you, I am confident that the next 25 years of FAER will be just as exciting as its first 25 years. I look forward to the opportunity this column provides to discuss topics and ideas of mutual interest to FAER and the AUA membership.

"With the help of all of you, I am confident that the next 25 years of FAER will be just as exciting as its first 25 years. I look forward to the opportunity this column provides to discuss topics and ideas of mutual interest to FAER and the AUA membership."

AUA Elections

President-Elect: Lee A. Fleisher, M.D., Chair, University of Pennsylvania

New Council Member: Jeffrey R. Kirsch, M.D., Chair, Oregon Health & Science University

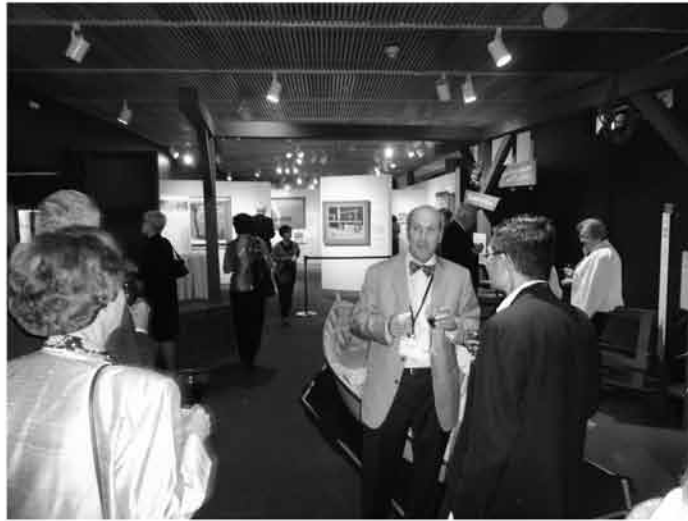
Highlights From the 2011 Annual Meeting



A Horse named Barboroso



Reception and Dinner at the Independence Sea Port Museum



Ben Casey
From Dr. Kildare to House:
Physicians on TV



Charles W. Otto, M.D.





AUA

Association of University Anesthesiologists

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