AMERICAN SOCIETY OF ANESTHESIOLOGISTS

NEWSLETTER

SEPTEMBER 1999 VOLUME 63 NUMBER 9

1800

Crawford W. Long, M.D., administers first ether anesthetic for surgery (1842)

1825

Horace Wells, D.D.S., N_2O Pioneer (1815-1848)

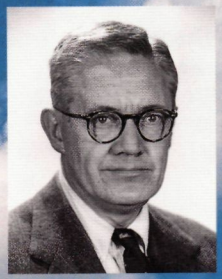
1850

Humphry Davy conducts N_2O experiments (1799)

Morton Ether Inhaler 1846

Francis H. McMechan, M.D. (1879-1939)

1875



Henry K. Beecher, M.D. (1904-1976)

S.S. White Dental Oxygen-Gas Apparatus, circa 1898

1900

Curtis L. Mendelson, M.D., Aspiration Investigator (1913-)

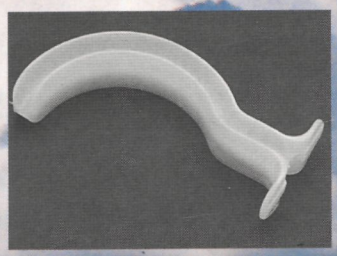
1925

Brian A. Sellick, M.B., Father of Cricoid Pressure Maneuver (1918-1996)

1950

Robert Andrew Hingson, M.D. (1913-1996)

James O. Elam, M.D. (1918-1995)



Berman Airway (1949)

1975

2000

200th Anniversary of N_2O use as an anesthetic (1999)

Small Innovations, Large Implications

Volume 63, Number 9
September 1999

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Throughout our specialty's history, there have been many famous, celebrated pioneers. The achievements of their lesser recognized peers, however, are no less significant, and together they have proven that even small innovations can have large implications.

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The CEO and the Virus

Mark J. Lema, M.D., Ph.D.
Editor

In the *War of the Worlds*, H.G. Wells portrayed the human race as a species on the verge of complete defeat at the hands of foreign, invading and uncaring Martians. Despite humankind's collective firepower and ingenuity, civilization was destroyed and reduced to small collectives that foraged and hid from the aliens. In "deus ex machina" fashion, all of the Martians suddenly died due to a lack of immunity to bacteria (viruses were not yet invented). Wells was trying to point out the irony of the smallest creature's ability to overcome what seemingly more complex organisms were incapable of accomplishing. It also served to point out that one never has all the bases covered!

Last week, I read an article in *The New Yorker* by Richard Preston[1] that thoroughly frightened me. Preston, author of *The Hot Zone* and *The Cobra Event*, has a way of elucidating the perils of viral outbreak so that it appears imminent. He interviewed Donald Henderson, M.D., once director of the World Health Organization's Smallpox Eradication Unit. What Preston disclosed should have every person on "Spaceship Earth" in a panic. Smallpox has been secretly modified and tested for use as a bioweapons agent by the Soviet Union during the cold war. Smallpox is communicable, airborne, lethal and now exotic so that one infected person could spread the virus worldwide during its 14-day incubation. Only one viral particle is sufficient to infect and probably kill a person. Moreover, if a single person contacted smallpox in Baltimore, Maryland, more than 100 million people would need immediate vaccination to stop the wave of infection.

Today, without booster vaccinations, virtually no one is immunized … and there are less than 8 million *effective* vaccination doses stored at Wyeth-Ayerst Laboratories in Pennsylvania. The Russians have now admitted that they did not keep track of all warehoused smallpox vials and expect that China, India, Pakistan, Israel, North Korea, Iraq, Iran, Cuba, Serbia, the AUM Shinrikyo group and the Osama Bin Laden group may have clandestine stocks for bioweapons development.

Chief executive officers (CEOs) of health maintenance organizations (HMOs) are effectively forcing doctors, hospitals, academic medical centers and pharmaceutical companies to trim the "fat" within their operations. With the reduction of research time for physicians and the shift to marketing newer $100 million drugs by pharmaceutical companies, the smallpox issue occupies low priority. Moreover, hospitals are reducing the number of beds and medical education has reshaped the physician workforce to more general practice physicians.

Having just heightened your insecurity by a factor of tenfold, you might be wondering how H.G. Wells, smallpox and HMO executives are related. Just like the Martians invading Earth, the CEOs have taken over health care in the United States, skeletonizing programs by reducing reimbursements. They, too, are foreign to the intricacies of this medical culture and are also uncaring about the long-term effects (satisfying shareholders from quarter to quarter is their time frame). By analogy, the present health care situation is akin to a yuppie family with high fixed monthly expenses, living from paycheck to paycheck

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How Does ASA Really Work?

Marcelle M. Willock, M.D., Assistant Secretary

In this continuing series of articles by the ASA officers, let me share my thoughts with you on my role as Assistant Secretary. Little did I anticipate what a rewarding experience it would be when, as a new faculty member, my chair encouraged me to join ASA. I dutifully did, unaware that ASA's organizational structure was designed to allow participation at many levels and thus assist its members to learn and develop a variety of skills. With that as background, let me elaborate and provide some answers to frequent inquiries about ASA.

Marcelle M. Willock, M.D.

ASA could be considered a federation of state societies and thus the necessity for an ASA member to be a member of his/her component state society. Governance of ASA is by the House of Delegates (HOD). Each state selects its own delegates, one per 100 active members or fraction thereof. Those states or contiguous states with a minimum of 500 members constitute an ASA district and each elects a director. Currently, there are 30 ASA districts, of which 14 consist of single states, 12 represent two states and four represent three states. Each state selects alternate delegates and an alternate director with a voice but no vote in the deliberations at the various meetings of the Society. The HOD currently has approximately 342 anesthesiologists (voting and nonvoting members) from all states, the District of Columbia and Puerto Rico and consists of delegates, directors, officers, all past presidents, the Editor-in-Chief of the journal *Anesthesiology*, the chairs of the sections on Education and Research, Annual Meeting and Clinical Care, one representative from each of the seven recognized subspecialty organizations, the chair of the ASA delegation to the American Medical Association (AMA) and the resident delegate to the AMA Resident Physician Section. Members should be proud of their representatives; attendance at the annual meeting of the HOD is consistently near 100 percent.

The ASA Resident Component, added 10 years ago, now numbers around 4,300 and has been very active. The medical student membership, which is less than a year old, is already more than 100. This bodes very well for the future of the specialty. Affiliate members include physicians and scientists in the United States and abroad and numbers more than 2,500 from 78 countries, and this number has been slightly increasing each year.

The ASA Bylaws specify the various duties in the organization, and the Committee on Bylaws proposes modifications as needed for action by the HOD. The work of ASA is done primarily by its committees, appointed by the President-Elect after reflecting on communication from members indicating their willingness to serve and recommendations from officers of state societies and others. Terms are for three years and renewable. Committees consist of six members, but often adjunct members with special expertise are added. Currently, there are 68 committees with more than 600 members from all states and a mixture of both more experienced members and younger members. For organizational oversight, committees are grouped by their general function into sections for review by the Administrative Council, the Board of Directors and final action by the HOD. A five-year review of all committees allows the HOD to make decisions on continuing, dissolving or creating new committees, either permanent or ad hoc, to meet newly identified needs. Under consideration is publishing all committee reports on ASA's Web site to acquaint members more readily with what ASA is doing. For example, the Committee on Electronic Media and Information Technology, new in 1997, explained its charge and accomplishments in the November 1998 issue of the *ASA NEWSLETTER*, which can be found on the Web site.

A little known fact is that ASA has liaison representatives to and from medical, nursing, governmental and other organizations whose work interdigitates with anesthesiology, such as the American College of Surgeons, Association of Operating Room Nurses, Health Care Financing Administration Cross Specialty Practice Expense Panel, American Association of Blood Banks and many others.

The bylaws stipulate that the Assistant Secretary is to assist the Secretary (whose duty is to maintain and preserve the records of the Society) and serves as a member of the Administrative Council. The records of the Society are numerous, with contributions from myriad sectors

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HCFA Issues Proposed Rule on Expenses, "-25" Modifier and Discontinuous Time

Michael Scott, Director
Governmental and Legal Affairs

On July 22, the Health Care Financing Administration (HCFA) issued a proposed rule setting forth several changes in payment policy under the Medicare Fee Schedule (MFS) for calendar year 2000. Those portions of the rule of direct interest to ASA members deal with implementation of resource-based values under the MFS for malpractice insurance costs, refinement of resource-based practice expense values first implemented last January 1, use of the CPT modifier "-25" and proper calculation of discontinuous anesthesia time. Of particular concern is HCFA's estimate that reimbursement to anesthesiologists will progressively decline by 8 percent between 2000 and 2001, based upon its proposed practice expense refinements.

Malpractice Expense

When the MFS was placed into effect in 1992, allowances for malpractice insurance costs were not derived from actual malpractice premium data, but rather were calculated from existing charge-based data. The terms of the Balanced Budget Act of 1997 (BBA) required HCFA to develop resource-based allowances for use beginning in calendar year 2000, and the proposed rule responds to that requirement. HCFA's proposed allowances are based on a three-step process under which a national average premium for each specialty is calculated, a risk factor for each specialty is factored in and then malpractice RVUs for each code are calculated (in the case of anesthesia codes, malpractice cost is calculated as a percentage of the anesthesia conversion factor).

Based upon national average premiums for the period 1990-95, during which the anesthesiology average premium dropped by an annual average of 6.5 percent, HCFA calculates that after making the necessary adjustments to achieve budget neutrality, implementation of the resource-based malpractice expense values will negatively impact anesthesiology reimbursement by 0.1 percent. At the same time, HCFA notes its intention to collect more recent premium data, a step that could conceivably modestly affect HCFA's proposed change for the specialty.

Practice Expenses

As in the case of malpractice insurance expenses, physicians' other practice expenses accounted for under the MFS were originally derived from charge-based data. In 1994, however, Congress directed HCFA to develop resource-based practice expense data and to place these values into effect beginning in 1998. Under the terms of the BBA, the effective date was delayed to January 1, 1999, with the new resource-based values to be phased in over a three-year period and become fully effective January 1, 2002. Over this period, HCFA was required to engage in a process of continuous refinement of the practice expense values.

HCFA's practice expense values for 1999 were derived from the AMA's Socioeconomic Monitoring System (SMS) survey data on physician practices in various specialties as well as from information on direct expenses developed by several Clinical Practice Expense Panels (CPEPs) previously appointed by HCFA. Using the so-called "top down" method of determining expenses associated with each procedure, HCFA essentially assumed that the SMS data provided a reasonably accurate method of allocating relative resource costs among the specialties, and that the allocation of direct costs to specific procedures within the specialty could be accomplished based upon the CPEP data.

Included in the practice expense calculations for 1999 are certain CPEP-developed expenses for the use of physician-employed clinical personnel to provide care for hospital patients. Of specific interest to the specialty, the CPEP anesthesiology panel had included inputs of up to 195 minutes of clinical staff time per procedure in a facility setting, divided among a registered nurse, a physician assistant and an anesthesia technician. In the July 22 proposed rule, HCFA now proposes to disallow these expenses, either on the grounds that Medicare already pays for such personnel through Part A, that use of such personnel is not typical or that a literal reading of the law does not allow these expenses to be included.

As noted, HCFA estimates that elimination of these direct costs will result in an 8-percent decline in reimbursement to anesthesiologists under Medicare. Since practice expenses currently represent about 21.5 percent of total reimbursement for anesthesiology services, the proposed cut will, when fully phased in, apparently reduce currently allowed anesthesiology practice expenses by about 37 percent overall.

HCFA expressly states in the proposed rule that because it cannot specifically identify these disallowed direct costs in the SMS data, it is not adjusting the SMS allocations among specialties. If this is so, then the only

explanation for the decline in reimbursement is that disallowed practice expenses are being shifted from anesthesia codes to other procedures performed by anesthesiologists such as evaluation and management (E&M) and pain management codes, which are also performed by other specialists. As of this writing, ASA has not been able to verify the accuracy of this conclusion, and HCFA personnel have not been able to provide clarifying data.

ASA intends, in its comments on the proposed rule, to challenge the propriety of HCFA's action. Recent survey data available to ASA confirms the fact that many anesthesiology practices do employ clinical personnel, not otherwise paid for by HCFA, to assist in the provision of anesthesiology services. ASA will be working with its consultant, Compass Health Analytics of Boston, both to examine HCFA's methodology and to attempt to buttress its argument for appropriate recognition of clinical assistance expenses.

Use of the CPT Modifier "-25"

AMA CPT-4 contains a modifier "-25" to identify a "significant, separately identifiable evaluation and management service by the same physician on the same day of the procedure or other service." HCFA has recognized the appropriateness of the modifier for some time and, if the modifier is used, has allowed payment for such an E&M service "above and beyond the preoperative and postoperative work of the procedure" provided on the day of a global surgery. HCFA's proposed rule adds the clarification that for procedures where the global surgery rules do not apply, a provider may only bill for a separately identifiable E&M service by using the "-25" modifier. According to HCFA, requiring use of the modifier will assist carriers in claims adjudication, eliminate unnecessary denials and alert physicians to the need for documentation in the medical record to support additional payment.

Discontinuous Anesthesia Time

Responding to pressure from ASA, HCFA's proposed rule also contains specific instruction on billing for anesthesia time when that time is discontinuous, that is, when for some reason there is a break in the continuous presence of the anesthesia provider. Although accounting for this time has not been a problem with most Medicare carriers, a few have simply refused to develop a policy on the issue, thus making HCFA's intervention desirable.

Under the MFS, anesthesia services are paid on the basis of base (complexity) units and by the use of 15-minute time units counting from preparation of the patient for anesthesia care and ending when the patient may be safely placed under postoperative care. In this continuum, however, there may be periods when a patient can be safely observed by nonanesthesia personnel, as between the time a patient receives regional anesthesia and is moved to the operating room, or between the time the patient is being prepared for induction and anesthesia is actually induced.

HCFA proposes to revise its current reimbursement regulations to provide that "In counting anesthesia time, the anesthesia practitioner can add blocks of anesthesia time around an interruption in anesthesia time as long as the anesthesia practitioner is furnishing continuous anesthesia care within the time periods around the interruption." The agency cautions, however, that this addition should not be interpreted as meaning that it now will pay for time units for the preanesthesia examination and evaluation, services for which payment is included in the anesthesia base units.

House Begins Month-Long Recess Without Action on Managed Care

With chances for a compromise on patient protection appearing increasingly dim, House Speaker Dennis Hastert (R-IL) determined not to schedule floor debate on competing managed care bills prior to the August recess. The legislative impasse was formed by the breakdown in discussions between Thomas J. Bliley, Jr., (R-VA) and John D. Dingell (D-MI), Chairman and Ranking Minority Member, respectively, of the House Commerce Committee, and rejection by moderate Republicans of a leadership attempt to fashion a bill drawn largely from the weak bill passed by the Senate in July. Immediately prior to recess, however, Congressman Charlie Norwood (R-GA) and Congressman Dingell introduced the Bipartisan Consensus Managed Care Improvement Act (H.R. 2723), which by the time of this writing had attract-

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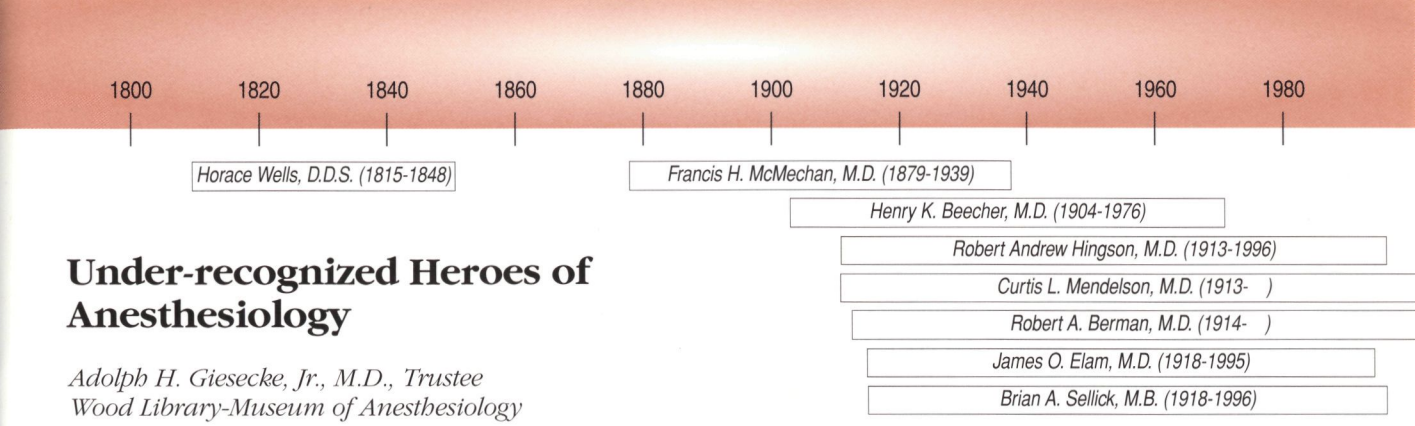


Under-recognized Heroes of Anesthesiology

Adolph H. Giesecke, Jr., M.D., Trustee
Wood Library-Museum of Anesthesiology

ASA does an excellent job of recognizing its heroes, both past and present. The Society has a variety of mechanisms for this form of recognition. The Distinguished Service Award is the highest honor and is presented yearly at the only plenary session of the ASA Annual Meeting. This year, Harry H. Bird, M.D., will receive the award. At the same plenary session, the membership will have an opportunity to listen to the honorific E.A. Rovenstine Memorial Lecture, presented by Carl C. Hug, Jr., M.D., Ph.D. The Award for Excellence in Research will be presented in the same session to Warren M. Zapol, M.D. At the House of Delegates meeting, the Section on Annual Meeting will present awards to the best scientific exhibits. The House of Delegates will elect a new slate of officers, and to hold office in our Society is still considered an honor even though substantial service is required of the officers.

Through the decades since the introduction of the practice of anesthesiology, some unique individuals have contributed significantly to the science of anesthesiology. Others have improved the welfare of its practitioners or the welfare of public society through innovations outside the restricted specialty of anesthesiology; yet many have not received the accolades of their peers or official recognition by ASA. Explanations vary for each of the individuals. Some sought recognition so aggressively that they were rejected. Others had personalities so controversial that they were ignored. One had a defect in his training, which could never be overlooked by his colleagues no matter how great his accomplishments.

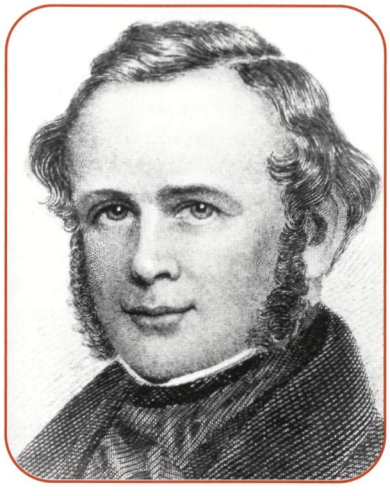
This issue of the *ASA NEWSLETTER*, coordinated by the Trustees of the Wood Library-Museum of Anesthesiology (WLM), will attempt to shed some light on the careers of these great leaders. The list could be very long. The ones chosen are the favorites of the WLM Committee on Publicity, which I chair. I recognize that the choices were arbitrary, and we may have left out your favorite. If so, I apologize and will look forward to receiving your manuscript for consideration for next year's issue of the *ASA NEWSLETTER* that features historical topics. For the rest, I hope that you enjoy reading and learning about the controversial, under-recognized heroes of anesthesiology.

Adolph H. Giesecke, Jr., M.D., is retired Jenkins Professor and former Chair of Anesthesiology, University of Texas, Southwestern Medical School, Dallas, Texas.

Horace Wells, D.D.S.: Rebel With a Cause (1815-1848)

A.J. Wright, M.L.S.

Horace Wells, depressed and under the influence of chloroform that he had apparently been breathing chronically for some weeks, killed himself in New York City on January 23, 1848, two days past his 33rd birthday. Of the three men most closely associated with the "discovery" of inhalation anesthesia — Wells, Crawford W. Long, M.D., and William T.G. Morton — surely Wells is the most problematic.



Horace Wells, D.D.S.

Dr. Long made the discovery of inhalational anesthesia in Georgia in March 1842, but failed to publish an account of it until many years later. In fact, Dr. Long did not realize the importance of what he had done until the news of Morton's work flashed out of Boston and around the world. Morton made the discovery in 1846, but only after both student and business relationships with Wells and only after Charles Jackson suggested sulfuric ether as a possible substitute for the nitrous oxide Wells had used. Wells made the discovery in December 1844, submitted himself as the first patient and then replicated that success on 15 of his dental patients. However, his effort foundered in a January 1845 demonstration at Massachusetts General Hospital (MGH). Although he continued to use nitrous oxide successfully in his dental practice, Wells' achievement and the remainder of his life were overshadowed and haunted by that failure.

Years earlier in 1800, Sir Humphry Davy had speculated that nitrous oxide inhalation could relieve some symptoms after certain types of surgery. Neither Davy nor his mentor Thomas Beddoes followed up on this idea. After all, Davy was not that interested in medicine and Beddoes was not a surgeon. Had Davy and Beddoes pursued the association of gas inhalation and surgery, perhaps anesthesia would have been developed much earlier.

In the 1820s, Henry Hill Hickman achieved anesthesia in dogs with carbon dioxide, but his efforts were ignored in both England and France. Nitrous oxide production methods survived in chemistry textbooks, and its use as a recreational inhalant was widespread in U.S. college chemistry classes. Yet, not until Wells' efforts began in December 1844 did inhalation anesthesia in humans achieve a serious public forum.

Horace Wells "was one of the most well thought of and competent dentists of his era. In fact, he was ahead of his time in his thinking and in his scientific approach to the problems of dentistry." His practice, which began in Hartford, Connecticut, in 1836 "may have been one of the most successful and financially rewarding practices in the country." When he was only 23, Wells published *An Essay on Teeth,* an early American dental text in which he condemned the pain-relieving nostrums and other dental quackery of his day. In the early 1840s, Wells began a partnership with his former pupil William Morton. In 1844, the pair even won an award for a dental instrument case they designed and exhibited. Yet their partnership was not a financial success, and they parted ways after only two years in business together.

Recent work by Stephen D. Small, M.D., has demonstrated that Wells was a deeply religious young man concerned "with a reality that transcended intoxication, a dangerous idea without scientific proof that the inhalation of nitrous oxide could be pushed to levels heretofore unknown, with great benefit." Here then is Wells' main contribution — "to push the inhalation much farther than for a mere exhibition for fun." Wells' motivation seems to have truly been the discovery of surgical pain relief, not an exotic experiment performed a few times and abandoned,

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Francis H. McMechan, M.D.: Internationalist (1879-1939)

Douglas R. Bacon, M.D., Trustee
Wood Library-Museum of Anesthesiology

At the annual dinner of the Forum of Anesthetists on May 17, 1939, at the far end of the head table sits a small, gaunt figure [Figure 1]. Six weeks later, Francis Hoeffer McMechan, M.D., would be dead. Obviously ill, looking far more frail than usual, Dr. McMechan sits, no longer center stage, at a meeting he worked for decades to organize and keep going [Figure 2]. Why did this happen in the twilight of his life when he should have been revered? What happened to make McMechan an almost unnoticed figure at his own meeting?

McMechan began his career in anesthesiology early in the 20th century. Crippled by rheumatoid arthritis, by 1915, he could no longer practice [Figure 3]. Rather than turn from the specialty he loved, McMechan focused his efforts on organizing anesthesia. Through his friendship with Joseph McDonald, the editor of the *American Journal of Surgery*, he was able to secure a supplement to the journal. The *Quarterly Supplement on Anesthesia and Analgesia* was the first time a journal devoted a section solely to anesthesiology. By 1922, McMechan would launch the specialty's first journal, *Current Researches in Anesthesia and Analgesia*.

In addition to publishing, McMechan [Figure 4] was responsible for putting on the annual national meeting of physician anesthetists. By the mid-1920s, McMechan had established a national network of local and regional organizations that fell under the umbrella of his national Associated Anesthetists of the United States and Canada. Internationally, McMechan was known through his work with the International Anesthesia Research Society. He traveled abroad twice, once to Great Britain and two years later to the Far East, including Australia, where he helped organize the Australian Society of Anaesthetists.

Figure 2: Close-up of the right side of the head table, Forum of Anesthetists Annual Dinner, St. Louis, May 17, 1939 (Photograph courtesy of the Wood Library-Museum)

Yet despite all of his efforts, McMechan remained controversial at home. McMechan tried to convince the American Medical Association (AMA) that the practice of anesthesiology should be restricted to only physicians. He hoped that the AMA would fail to approve those hospitals in which physicians did not give anesthetics. McMechan was equally as aggressive with medical schools. McMechan was known to write to the dean of a medical school complaining about the lack of instruction in anesthesia for medical students and interns. Indeed, one of the reasons McMechan's old friend Ralph M. Waters, M.D., joined the faculty at the University of Wisconsin in Madison in 1927 was to "get medical

Figure 1: Forum of Anesthetists Annual Dinner, St. Louis, May 17, 1939 (Photograph courtesy of the Wood Library-Museum)

Douglas R. Bacon, M.D., is Vice-Chair for Education and Associate Professor of Anesthesiology, State University of New York at Buffalo, and Manager, Anesthesiology Service, VA Healthcare Network Upstate New York at Buffalo, Buffalo, New York.

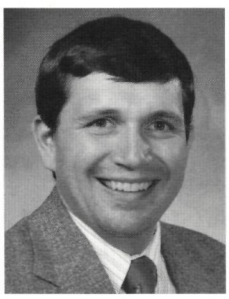


Figure 3: Francis Hoeffer McMechan, M.D., as a young man. (Photograph courtesy of the Wood Library-Museum)

Figure 4: Francis Hoeffer McMechan, M.D. (Photograph courtesy of the Wood Library-Museum)

schools right" on the teaching of anesthesia.

McMechan's greatest controversy, however, centered on the issue of specialty certification for physicians in anesthesiology. As the Great Depression deepened across America, the anesthetic fee clearly became important to general practitioners, surgeons and hospitals. A surgeon hired a nurse for a fraction of the anesthetic fee the surgeon charged. General practitioners often gave the anesthetic for the surgeon to whom they had referred the case. Hospitals, like surgeons, hired nurses and made a profit by charging patients a fee for the anesthetic which was in excess of the nurse's salary. Full-time physician specialists in anesthesiology were slowly being forced out and the quality of anesthetic care was suffering. In 1931, McMechan proposed an international college of anesthetists, based upon the American College of Surgeons, to define specialists. Always the internationalist, McMechan hoped the physician anesthetists of the United States, Canada and Great Britain would join in one great fraternity. In addition, countries with too few anesthetists to sponsor a certifying body could apply to the International College of Anaesthetists and establish their credentials as a specialist in anesthesiology.

Within four years, the International College awarded its first fellowships. However, as credentials for specialty certification, the fellowships were weak. In addition to the usual information, a submission of 10 cases anesthetized with "lessons learned" was required. Physicians were not above exploiting this weakness for their own purposes. In one case, an intern who had rotated on the anesthesia service for less than a month wrote up his cases and was declared a fellow. In another, a surgeon who rarely administered anesthesia tried to use his international certification to prove his qualifications as the chair of a hospital department of anesthesiology. Thus, McMechan's hopes that the college would elevate the specialty and eliminate all but physician specialists within the field were cruelly dashed.

McMechan had another exclusionary criterion built into the college. Physicians who worked with nurses or other nonphysician providers could not become fellows. Thus, John S. Lundy, M.D., one of the major leaders in anesthesiology in the 1920s and 1930s was excluded. This criterion almost split anesthesiology in two, causing a deep rift that was only partially healed after the death of McMechan. Indeed, it would not be until after McMechan died that a second American journal could be published in anesthesiology or a second national meeting organized.

Finally, it was McMechan's poor relationship with the AMA that caused the American Board of Anesthesiology to be originally incorporated as a sub-board of the American Board of Surgery. In July of 1939, less than one month after McMechan's death, Lundy was exploring with the AMA the possibility of both a new journal and an independent section on anesthetics. The latter was necessary for the American Board to gain independence, which occurred in 1940.

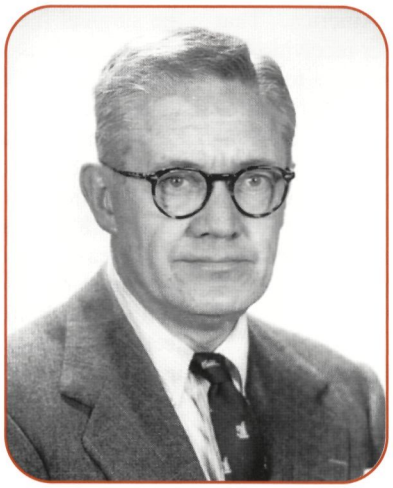
Francis Hoeffer McMechan was a strong leader, organizer and editor when the specialty of anesthesiology needed him most. His energies were turned to organizing anesthesiology when his body was so crippled that he could not practice it. Without his efforts, anesthesiology would not have been in the position to contemplate a specialty board in the late 1930s. Yet, it was that same stubborn energy that failed to allow McMechan to make amends with the AMA at a time when it was critical for the specialty. Thus, he almost split organized anesthesiology when it was too weak to survive such a conflict. Controversial and central to the history of American anesthesiology in the first half of the 20th century, McMechan's work is still visible in the specialty today.

References available on request from the author and on the ASA Web site.

Henry K. Beecher, M.D.: Contrarian (1904-1976)

Vincent J. Kopp, M.D.

Henry Knowles Beecher, M.D., is one of the most influential personalities in the history of anesthesiology and medicine. The list of his achievements, honors and publications is as impressive as the role of medical leaders he mentored. Yet Beecher remains a hidden presence behind the visible facade of modern medicine. To those who knew him, he was gregarious, imposing and energetically committed to controversy. To those who opposed him, he was a genteel but persistent adversary. It is impossible to conceive of modern medicine without his contributions, all of which derive from his contrarian views on a wide range of important issues. His legacy is the influence that his views and work have had on medical science, academic anesthesiology, medical ethics and society's standards regarding patients' rights and the definition of death.



Henry K. Beecher, M.D.

Background and Education

The first of two children, Beecher was born in Peck, Kansas, in 1904. His birth name was Harry Unangst. Harry was the name those who knew him used, but Henry became the name of his public persona. His last name, Unangst, translates loosely from German to mean "without fear." Elliott V. Miller, M.D., says it accurately describes his defining trait.* Yet, for reasons that are unknown, he replaced Unangst with Beecher in his 20s. By adopting Beecher, he had a name that associated him with the great 19th century American abolitionist and preacher, Lyman Beecher, his preacher son Henry Ward Beecher and his daughter, author Harriet Beecher Stowe.

Beecher worked and borrowed to attend the University of Kansas. He earned an A.B. degree in 1926 and an A.M. degree in 1927 in physical chemistry. His goal was to earn a Ph.D. in chemistry at the Sorbonne. Fortunately for anesthesiology, he was persuaded to study medicine instead. In 1928, he entered Harvard Medical School where he developed a keen interest in respiratory physiology, becoming adept at doing physiology experiments. As a student, he earned research fellowships in 1929, 1930 and 1931. He won two Warren Triennial Prizes for papers published in the *Journal of Applied Physiology* in 1933. In his last year of medical school, he conducted a study of postoperative pneumonia in which he proved the role of aspiration of vomitus. This and his previous medical student work caught the attention of Edward Churchill, M.D., Professor of Surgery at Harvard. An early pioneer in the thoracic surgery field, Dr. Churchill took a keen interest in Beecher's scientific work and became his professional mentor.

In 1932, Beecher graduated *cum laude* from Harvard Medical School. After two years of surgical training under Churchill at Massachusetts General Hospital (MGH), he went to Denmark as a Mosely Fellow in 1935 to work in the physiology laboratory of Nobel Laureate August Krogh. Upon his return in 1936, directed by Dr. Churchill, Beecher left surgery to become Anaesthetist-in-Chief at MGH and Instructor in Anaesthesia at Harvard Medical School. Beecher wanted to receive formal training in anesthesia from either Ralph M. Waters, M.D., or John S. Lundy, M.D., but was dissuaded from doing so by Dr. Churchill. In 1939, he rose to Associate Professor, and in 1941, he was named Henry Isaiah Dorr Professor of Anaesthesia Research, becoming the first occupant

* Dr. Miller presented his paper, "Henry Knowles Beecher: A Man of Controversy" at the Third International Symposium on the History of Anesthesia, Atlanta, Georgia, March 30, 1992. This paper is available through the Wood Library-Museum of Anesthesiology, Park Ridge, IL.

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of an endowed chair in anesthesiology in America. That Beecher ascended to this position without ever receiving formal training in anesthesia is ironic, given the extent to which he had already shaped anesthesiology as a medical discipline rooted in applied basic sciences. It is also a fact that prevented him from gaining ASA membership until 1938, when he qualified under grandfather provisions. Except for service in the U.S. Army in North Africa and Italy during World War II (with Dr. Churchill), Beecher completed his entire professional career at Harvard and MGH, stepping down as Chair in 1969 after gaining departmental status for the Division of Anaesthesia.**

Between 1939 and his retirement in 1969, Beecher used his prominent academic position to break new ground in anesthesia. By applying academic standards to anesthesia research and clinical care, he advanced anesthesiology as a medical specialty with unique scientific potential. His early work on the effects of surgery on respiratory function helped define the role of controlled ventilation. Beecher's commitment to patient safety took root in his early career. In his reports to the Trustees of the Dorr Professorship, Beecher documented improvements in morbidity and mortality directly related to the use of specially trained physicians instead of medical students and interns to deliver anesthesia at MGH. At the same time, however, he also maintained a nurse anesthesia school along side his residency program. His landmark study of factors contributing to mortality associated with surgery and anesthesia, the oft-quoted Beecher and Todd study, was one of the earliest multicenter studies conducted in America. Its focus on the safety of anesthesia also made it a unique application of epidemiology to the field. That this study's results startled many in the anesthesia community and were published in the surgical literature helped solidify Beecher's reputation as a contrarian. Nonetheless, perhaps more than any other, this study stimulated awareness about the need for vigilance when using muscle relaxants.

Beecher's relationship with organized anesthesiology was not smooth. As mentioned, he was barred from ASA membership, even as he ascended to become Anaesthetist-in-Chief at MGH, until 1938. A close look at his publication list reveals only a handful of papers, and none of the most important ones was published in the anesthesia literature. Further, he chaffed under ASA's position on a range of subjects, from employment and compensation structure to the use of the word "anesthesiology" to describe the field. Concerned as he was with such distinctions and the status of the academic anesthesia practice in particular, he joined with Robert D. Dripps, M.D., Austin Lamont, M.D., and E.M. Papper, M.D., to form the Association of University Anesthetists (as it was originally named) in 1953.

Beecher's greatest contribution to science and the academy came from his work in clinical pharmacology. His investigation of the relationship between subjective psychological states and objective drug responses began during World War II. In *Pain in Men Wounded in Battle,* he wrote, "Three-quarters of badly wounded men, although they have received no morphine for hours... have so little pain that they do not want pain relief medication, even though the questions raised remind them that such is available for the asking. This is a puzzling thing and perhaps justifies a little speculation." His systematic questioning of this observation led to his advocating placebo in all drug clinical trials, a practice he wanted extended to studies of surgical techniques as well. Through his advocacy, Beecher became, in effect, the father of the prospective, double-blind, placebo-controlled clinical trial.

Medical Ethics and Society

If paternity of clinical research's "gold standard" was not enough to win fame, Beecher's involvement in two other controversies earned him a place in medical history's annals. More than anyone, Beecher was responsible for initiating peer review of experimental protocols and assuring that informed consent was obtained in clinical research. He was also the person responsible for the redefinition of death from cardiovascular to neurologic in nature.*** In taking leading roles in these controversies, Beecher acted as the consummate contrarian.

** On October 20, 1996, during the 1996 ASA Annual Meeting, three of Henry K. Beecher's former residents, Arthur S. Keats, M.D., Nicholas M. Greene, M.D., and George E. Battit, M.D., held a videotaped panel discussion of their recollections about Dr. Beecher. Titled "Remembering Henry K. Beecher, M.D.," this video became part of the "Living History of Anesthesiology" collection at the Wood Library-Museum of Anesthesiology. The biographical and anecdotal information contained in this video paints a lively picture of Beecher as an energetic mentor and leader of these respected anesthesiologists. I have used this information and information obtained through conversations with other former Beecher trainees, some of whom wish to remain anonymous, as well as anecdotes shared in conversations with J.S. Gravenstein, M.D., Leroy D. Vandam, M.D., Dr. Miller and Dr. Greene to construct a vivid, yet accurate, picture of Henry K. Beecher's complex biography.

After studying the Nazi medical experiments conducted during World War II, Beecher recognized that investigational subjects' rights were also being systematically abridged in United States facilities where federally funded research was conducted. His efforts to publicize these abridgments fell on deaf ears until 1966 when he published his landmark article, "Ethics and Clinical Research." In it he presented 22 representative examples (he had more) of experiments on humans conducted by unnamed (but renowned) investigators where basic, accepted standards of human subject treatment, as outlined in the Neuremberg Code of 1947, were disregarded. Following the article's publication, the National Institutes of Health and the Food and Drug Administration altered their investigator guidelines to require peer-reviewed superintendence and evidence of informed consent in all human experiments. In essence, Beecher's revelations caused creation of the Institutional Review Board system and informed consent standards that continue to be refined and monitored wherever federal dollars are expended.

The most apocalyptic contribution Beecher made was to form the committee and write the report that dealt with the problem of the hopelessly unconscious patient. The report, "A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death," became the sentinel event in the now three decades' long debate about when life ends, when it begins and who controls its events. In the published report, the committee took pains to delink the issues of brain death and organ transplantation. However, Beecher's papers at the Francis A. Countway Library of Medicine at Harvard reveal that adopting the brain death definition was linked from the outset to increasing organ availability as far back as 1968. That the issue concerning when donor organ harvest for allographic transplantation is permissible still bumps up against the issue of when is a human being dead illustrates the centrality and prescience of Beecher's work on the subject. That his work set the stage for landmark legal decisions in the Karen Ann Quinilan and Nancy Cruzon cases and others, thus the genesis of modern biomedical ethics, is less apparent but no less real.

Conclusion

Contrarian, colleague, mentor, public figure — no matter how he is viewed — Henry K. Beecher left a vivid impression on anesthesiology. Of more importance is the indelible mark he has left on medical practice in Western culture. It is likely few who knew him when he was engaged in the controversies he loved saw the future he envisioned. Whether they went with him or against him at a given moment of controversy, it is likely only Beecher sensed where his contrarian positions would lead. Henry Knowles Beecher shaped more than anesthesiology. He shaped the world in which anesthesiology is practiced. Few in our profession can be said to have done as much.

References available on request from the author and on the ASA Web site.

*** Kopp VJ. Henry Knowles Beecher and the redefinition of death. *Bull Anesth Hist.* 1997; 15:6-8.

Horace Wells, D.D.S.: Rebel With a Cause (1815-1848)

Continued from page 6

as with Dr. Long, or a process to be patented for profit, as Morton tried to do.

Despite the perceived failure at MGH and the upstaging of his concept by Morton's use of a different agent, Wells' contribution has been acknowledged. Volumes celebrating his work have marked both the 1944 and 1994 centennial and sesquicentennial anniversaries. Statues of Wells can be found in both Hartford, Connecticut, and Paris, France. These trinkets of human remembrance are the least we can do as tribute to the man who gave the world so much and yet died in such despair.

References available on request from the author and on the ASA Web site.

Robert Andrew Hingson, M.D.: OB Analgesia Pioneer (1913-1996)

Henry Rosenberg, M.D.

Robert Andrew Hingson, M.D., was not only a pioneer in anesthesiology, renowned for his introduction of peridural analgesia during labor and delivery, but was also recognized for his contributions to humanity outside his specialized field. In the field of public health, he enabled millions of people to be immunized against a wide variety of diseases in a relatively painless and efficient manner because of his development of the jet injector. Hingson also established the Brother's Brother Foundation, a volunteer, interfaith group dedicated to linking America's vast resources to global health care needs.

Robert Andrew Hingson, M.D.

Early Medical Training

Born in 1913 in Anniston, Alabama, Hingson's interest in studying medicine grew as he witnessed the plight of poor African Americans and their disproportionate number of deaths by disease. After graduating from Emory University School of Medicine in Atlanta, Georgia, in 1938, Hingson interned at the U.S. Marine Hospital on Staten Island, New York, and then joined the Coast Guard as a Public Health Officer. While serving in the North Atlantic before America entered World War II, he ministered to then Treasury Secretary Henry Morganthau returning from a secret mission to Europe. When Morganthau sought to reward Hingson for his services, he helped him obtain a one-year fellowship under John S. Lundy, M.D., at the Mayo Clinic.

Still assigned to the Public Health Service, after two years at Mayo, he returned to Staten Island in 1941 to become Chief of the Department of Anesthesia at the U.S. Marine Hospital. Because a large number of wives of enlisted men were served by this facility and since his own wife was pregnant at the time, he became interested in solving the problem of pain in childbirth at the newly converted obstetric hospital.

Development of Continuous Caudal Anesthesiology

Having observed the analgesia produced by a single peridural injection of a short-acting agent into the lumbar area when the cervix was fully dilated, Hingson and an obstetrician colleague, Waldo B. Edwards, M.D., realized the need to develop methods of pain relief throughout prolonged or difficult labor. They decided to combine the advantages of continuous spinal anesthesia with the safety, simplicity and effectiveness of extradural nerve block by using the sacral hiatus approach to the peridural space. Securing the hub of the malleable needle to rigid rubber tubing, the anesthetic agent could be introduced with the patient in her hospital room, uninterrupted during transfer to the delivery site and easily maneuvered for preparation, delivery and, if necessary, episiotomy. Of course, the needle was left in the caudal canal, and the patient labored in the decubitus position.

Because of the impressive results, Hingson suggested continuous caudal block for traumatic surgery, including at the battlefront, and his techniques were later extended to the upper abdomen by increasing the amounts of the injected solution.

Hingson was encouraged to publish his findings by Morris Fishbein, M.D., then Editor of the *Journal of the American Medical Association*. Eventually, an extensive body of writing evolved and Hingson received invitations to hold clinics in obstetric analgesia throughout Europe, Canada and the United States.

Still in the Public Health Service, he transferred to the Philadelphia Lying-In Hospital, a unit of the Pennsylvania Hospital, where he established an obstetric analgesia ser-

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vice. He was next assigned to the University of Tennessee School of Medicine to investigate the 13-percent infant mortality rate in Memphis. He established the university's first department of anesthesiology, while reversing the trend of newborn deaths.

Hingson was next assigned to the Johns Hopkins University, Baltimore, Maryland, where he promoted the replacement of general anesthesia with regional anesthesia for deliveries. Retiring as a public health officer in 1951, he became the first professor of anesthesiology at Western Reserve University School of Medicine, and director of anesthesia at the University Hospital of Cleveland, both in Cleveland, Ohio. There he developed a portable anesthesia machine, nicknamed the Western Reserve Midget, capable of providing instantaneous anesthesia for dentistry, obstetrics and surgery. His machine was also adapted as a ventilator for resuscitation by firemen, military personnel and rescue workers.

Development of the Jet Injector

During his time at Staten Island, Hingson cared for a merchant seaman whose hand was exposed to high-pressure trauma. The pressure had forced oil into the man's hand without a visible surface wound. Hingson was determined to utilize the phenomenon to develop a technique of injection. Working with an engineer, he designed the "hypospray," a two-cell-flashlight-size instrument constructed so that 125 pounds of spring pressure was projected against a plunger within a metal container. Pressures built up to approximately 3,900 pounds per square inch and projected a column of liquid through the orifice of the ampule at a velocity of 600 miles per hour. Because of the minute size of the orifice, only 11 g of pressure was developed by the jet. The high pressure forced fluid into the subcutaneous tissue without a break in the epidermis.

This high-velocity, microjet, injectable apparatus was first used clinically with local anesthetics, ephedrine, insulin and penicillin. The original hypospray underwent extensive experimentation in anesthetic administration and later for vaccination, evolving as an important public health instrument. For Hingson, the most important benefit of the hypospray was that it did not frighten children undergoing vaccination nearly as much as did a syringe and needle.

Production-line immunization began in 1956 when Hingson and his team inoculated children with the Salk vaccine in Cleveland, Ohio. Eventually more than 300,000 patients were immunized via jet injection, primarily against polio and influenza.

Brother's Brother Foundation

In 1958, in association with the Baptist World Alliance, Hingson and his team, with gifts of vaccines and transportation facilities from pharmaceutical firms, inoculated some 90,000 people throughout Asia and Africa against typhoid, cholera and polio. These large-scale medical missions were the impetus for his establishing the Brother's Brother Foundation (BBF), an agency now directed by his son, Luke. Robert Hingson left academic anesthesia in 1973 to devote his full time to BBF.

Today, along with medical and agricultural supplies, BBF receives yearly donations of millions of educational materials to be distributed to schools and medical institutions, and BBF's Intraocular Lens Program distributes and implants lenses to help restore vision to cataract sufferers.

Honors for Robert Hingson

Nearly every country in which Hingson served awarded him their highest humanitarian honors. He was nominated for a Nobel Peace Prize. He was a guest faculty member in anesthesia throughout clinics in Europe, South and Central America and in the United States. He was also honored by the American Society of Regional Anesthesia and was one of 19 recipients of the President's (Reagan) Volunteer Action Award.

Hingson's monumental achievements were never officially recognized by ASA, probably because his major development was in the field of public health and the intensity of his effort took him out of the mainstream of ASA activities. He preferred the recognition that he received from the people who benefited from his efforts. ASA missed an opportunity to encourage and recognize one of its most innovative members.

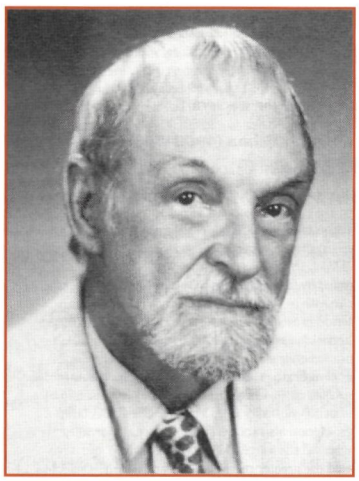
Hingson and his wife, Gussie, had five children, all of whom accompanied him on overseas missions. He and Gussie retired to a farm in Ocilla, Georgia, where he died in 1996.

References available on request from the author and on the ASA Web site.

Curtis L. Mendelson, M.D.: Aspiration Investigator (1913-)

Paul R. Knight, M.D., Ph.D.

Most anesthesiologists are well acquainted with Mendelson's syndrome. Curtis L. Mendelson, M.D., is best recognized as the physician who described the symptom complex associated with gastric acid aspiration. He clearly established the role of the low pH property of gastric secretions as an important mechanism involved in the pathogenesis of the lung injury. Dr. Mendelson was a Professor of Obstetrics and Gynecology at Cornell School of Medicine, not an anesthesiologist. Yet, a number of his scholarly observations regarding this important perioperative respiratory complication as well as his recommendations of prevention and care dramatically impacted the perioperative practices of anesthesiologists. However, his role in influencing the development of the practice and specialty of anesthesiology is not well appreciated. Thus, it is worthwhile to revisit some of Dr. Mendelson's achievements from the perspective of the evolution of anesthesia care.



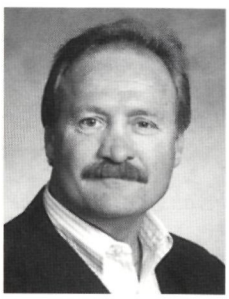
Photograph courtesy of Curtis L. Mendelson, M.D.

Curtis L. Mendelson, M.D.

Aggressive protection of the airway is a major principle in providing anesthesia care. However, this practice has not always been performed as fastidiously as is done currently. Furthermore, despite improvements in the prevention of this feared complication, aspiration of gastric contents still remains a significant problem in patients during induction and emergence from anesthesia. Gastric aspiration may also occur in the patient who, for example, has lost consciousness prior to coming to the operating theater, as can occur with trauma. Additionally, although loss of control of airway reflexes secondary to altered consciousness is the major proximal cause, there is also a considerable problem with passive regurgitation of stomach contents in the geriatric patient population during normal sleep.

Aspiration of gastric contents occurs in approximately 1 in 3,000 anesthetics. "Silent" aspiration of stomach contents can be implicated in the etiology of a number of unexplained cases of postoperative pulmonary dysfunction. Aspiration of gastric contents may result in a spectrum of lung injuries from a very mild, sub-clinical pneumonia to a more severe, progressive disease such as adult respiratory distress syndrome (ARDS), with a very high associated morbidity and mortality. Aspiration pneumonitis also predisposes the patient to the development of a subsequent bacterial pulmonary infection. It has been reported that approximately one-third of patients with acute aspiration pneumonia will develop a more severe, protracted course with secondary complications. Aspiration pneumonitis carries a 30-percent mortality and accounts for up to 20 percent of all deaths attributable to anesthesia. Thus, the threat of gastric aspiration plays an important role in planning the anesthetic strategy and, as such, is important in determining how to protect the airway during anesthesia. The principal of protecting the airway forms one of the corner stones of the practice of anesthesiology.

Historically, the deleterious effects of aspiration of food and drink had been known since the time of Hippocrates. John Hunter performed the first scientific experiments investigating the pathophysiology of aspiration in 1781. The first documented death related to anesthesia was most likely a result of the liquid administered during unconsciousness. In this case, Sir James Simpson identified pulmonary aspiration of the brandy and water that Hannah Greener, a 15-year-old girl, was given during chloroform anesthesia since "her lips, which had been previously of good color, became suddenly blanched, and sputtered slightly at the mouth as one with epilepsy." Additionally, case reports on gastric aspiration from several series of



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patients had previously been reported by a number of Dr. Mendelson's obstetrical colleagues.

So why then did gastric acid aspiration become known as Mendelson's syndrome? In 1946, Curtis Mendelson became the first investigator to rigorously study the pathogenesis of the disease using both patient case reports and experimental animals. He was able to demonstrate that the hydrogen ion concentration was critical to the development of the clinical picture and pathology seen following aspiration of the gastric contents. Additionally, the animal component of Mendelson's research in this seminal article was so well conceived that today many investigators use similar procedures to model gastric aspiration in the laboratory. Dr. Mendelson could certainly be considered as one of the first physician-scientists to perform translational research.

Dr. Mendelson clearly described the pathogenic changes that occurred as a result of gastric aspiration as well as the clinical symptoms. Based on these findings, recommendations for prevention and treatment of aspiration of gastric contents that are still practiced in obstetrical anesthesia as well as all surgical patients were proposed. For example, in order to decrease the incidence of this complication, Mendelson recommended first "withholding oral feedings during labor and substituting parental administration," secondly "wider use of local anesthesia ... where feasible" and thirdly "alkalization of and emptying the stomach." He also prescribed the supportive therapy regime that still comprises the primary treatment modality that we currently offer these patients. These principles of practice were presented a number of years before Brian A. Sellick, M.B., recommended prophylactic approaches to prevent aspiration of gastric contents in the patient with a full stomach (page 22).

Dr. Mendelson argued quite aggressively for better-trained personnel in the administration of anesthesia to his patients. He clearly was not happy regarding the poor, inexperienced anesthesia support his specialty was receiving at this time and suggested methods by which obstetricians could overcome this problem. In the discussion section of his 1946 article, Mendelson stated, "The anesthetic deserves special consideration." He further goes on to address several important issues in the anesthetic care of the obstetrical patient, suggesting that local anesthesia would eliminate the dangers of "incompetently administered general anesthesia." Dr. Mendelson also listed several important skills in airway management in which he believed that individuals administering an anesthetic should become proficient (e.g., skill in laryngoscopy).

"Dr. Mendelson argued quite aggressively for better-trained personnel in the administration of anesthesia to his patients. He clearly was not happy regarding the poor, inexperienced anesthesia support his specialty was receiving ... Mendelson stated, 'The anesthetic deserves special consideration.'"

The lively debate that followed the presentation of Dr. Mendelson's findings primarily involved the discussion of the need for an anesthesiologist-run service responsible for respiratory management oversight. One of the discussants stated, "We feel very strongly for the necessity for having a well-coordinated, physician-controlled anesthesia department which is in control of all pneumatologic and transfusion services." Thus, the presentation of this work was a significant event in promoting the importance of the specialty of anesthesiology. Clearly, the physicians present at this discussion believed that an independent, physician-run hospital-based department was critical for delivering optimal care for the obstetrical patient population. Additionally, the importance of the anesthesiologist in decreasing the incidence of this complication was emphasized. For example, one of the discussants bemoaned the fact "that there is no anesthetist on this program as it is largely an anesthetic problem." The resultant discussion that occurred during the meeting portion of the presentation of this work generated a statement of principles that could not but help promote the development of anesthesiology as a specialty.

However, Dr. Mendelson's work was not entirely salutary to our understanding of the pathogenesis of gastric aspiration. Mendelson's syndrome became synonymous with gastric acid aspiration. However, his experiments examined both acid and particulate aspiration. He careful-

ly described both clinical entities, and his animal studies also assessed the pathologic picture following experimental installation of intratracheal acid, particulate and acidified-particulate material solutions. Mendelson dismissed the effects of the presence of particulate material in the vomitus as being a problem primarily of airway obstruction and not inflammation. As a result of these experiments, the medical community and anesthesiologists in particular, focused on the pH of the vomitus as being a critical factor in assessing the risk as to whether aspiration of gastric contents would develop into a severe pneumonitis. However, a combined acidic food particle aspiration results in a synergistic inflammatory lung injury. Furthermore, gastric aspiration is now well-recognized as a major risk factor in the pathogenesis of adult respiratory distress syndrome, and the presence of particulate material in the vomitus is associated with a greater likelihood that the initial pulmonary insult will develop into the more severe progressive lung injury. The lack of investigation for many years following Mendelson's report into the role of constituents of gastric contents in the pathogenesis of lung injury following aspiration, other than the hydrogen ion concentration, illustrates the major impact Mendelson's work has had on the anesthesiology community.

In conclusion, Curtis L. Mendelson, M.D., was a physician-scientist of considerable stature in the practice of obstetrics and gynecology. Although not an anesthesiologist, he strongly influenced the principles of practice and development of our specialty. Mendelson's report on aspiration of stomach contents by obstetrical patients undergoing anesthesia was very comprehensive in its description of both the clinical and pathologic picture of the lung injury. Because of this clinical account and his compelling animal studies on the etiologic cause of the pathogenesis of the pneumonitis, the pulmonary symptoms following gastric acid aspiration have since been known as Mendelson's syndrome, a result that has led anesthesiologists to focus, until recently, on the pH of the vomitus when aspiration occurs.

Dr. Mendelson's work reinforced the need for protective airway management practices (e.g., mandatory use of suction and skill in laryngoscopy) during the evolution of our specialty. Because of his view on the critical nature of airway management in the support of the obstetrical service as well as his ability to influence his obstetrical colleagues in this regard, anesthesiology became a strong driving force and developed as an important specialty. His work fostered the concept by his obstetrical colleagues that individuals who practice anesthesia should be proficient in important skills and belong to a distinct hospital-based clinical department.

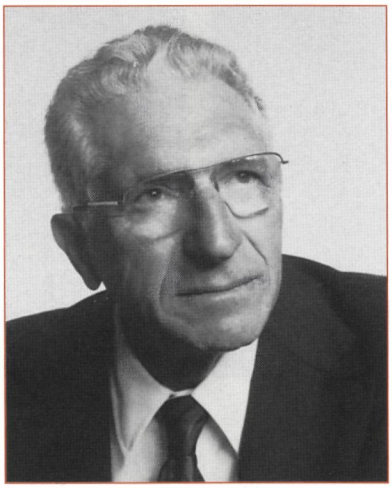
It is for these reasons that Dr. Mendelson deserves recognition as one of the key individuals involved in the development of principles and practices of anesthesia care, particularly in regard to airway management associated with the evolution of the specialty.

References available on request from the author and on the ASA Web site.

Robert Alvin Berman, M.D.: Airway Inventor (1914-)

Jonathan C. Berman, M.D.

This year marks the 50th anniversary of the Berman Airway, the development for which Robert A. Berman, M.D., is best known. I tell his story today to honor his lifelong interest in airway management, but more importantly, to honor the spirit of anesthesiology, which he embodies.



Robert Alvin Berman, M.D.

Dr. Berman was born in Brooklyn, New York, in December 1914. He graduated Phi Beta Kappa from the University of North Carolina at Chapel Hill in 1936, continuing there for his medical school training. During his first year, while questioning the anatomy curriculum, he was told by the Dean that it was often hard to place Jewish students after finishing the two-year curriculum. Dr. Berman made it easy — by leaving. This rebellious spirit, defiant attitude and sharp tongue (for better or worse) would always be a hallmark of Dr. Berman. He enrolled at the University of Sheffield, England, in 1938. While home in 1939, World War II began, visas were revoked and he could not return. He eventually went to Chicago Medical School, graduating in 1943. He went back to New York for an internship at Israel Zion. Upon completion, he returned to Chicago to set up a general medicine practice and worked as a hotel doctor at the Palmer House. His plans were interrupted by a two-year hiatus in the U.S. Coast Guard Public Health Service during World War II.

There is no one mentor or incident that led to his choice of an anesthesiology residency, but he felt the developing field, which was based in the basic sciences, had great potential. He started his residency at Brooklyn Jewish Hospital, Brooklyn, New York, and left that program due to a difference in ideas with the department chair. He finished his anesthesiology training at Mount Sinai Hospital, New York City, in 1949. At this time in his career, he had worked on mechanical ventilation and airway development and had thought about making a heart-lung machine. New York City was one of the anesthesia hubs and he was well aware of the players. He had tried to gain admittance to the Emery A. Rovenstine residency and had an unreceptive welcome by Virginia Apgar, M.D., while showing her his airway. He visited with the gracious legend Paul M. Wood, M.D., (two of the airways he gave him are in the WLM collection) and befriended many future heroes of the Society like Eli Brown, M.D., and Erwin Lear, M.D. It was at this time that Dr. Berman left the allure of academics and a larger practice to become Director of Anesthesiology at St. Joseph's Hospital in Far Rockaway, New York (a position he held for 35 years).

Despite the rigors of private practice, including every night call for years, he developed the Berman Airway [Figure 1] and felt the desire to share his ideas by writing arti-

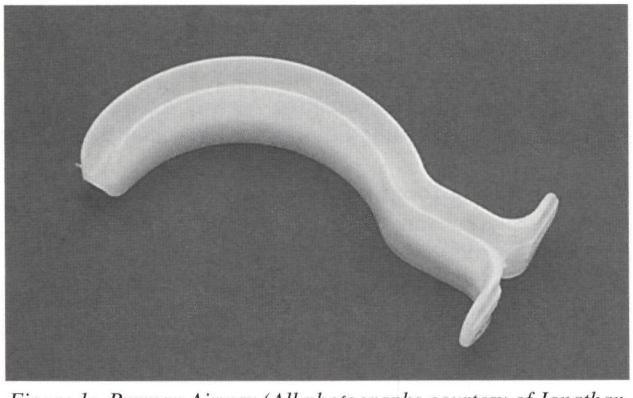


Figure 1: Berman Airway (All photographs courtesy of Jonathan C. Berman, M.D.)

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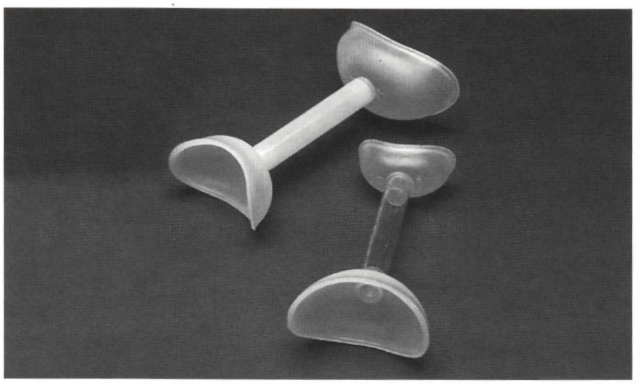

Figure 2: Resuscitube®

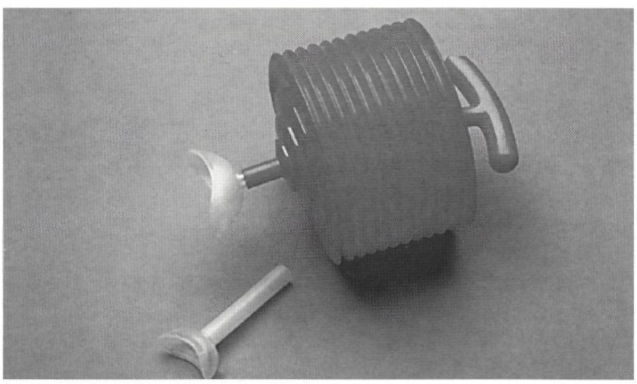

Figure 3: Respir-Aider

cles, letters and comments for the journals of anesthesiology in each decade he practiced. He also participated by presenting scientific exhibits at the New York State Society of Anesthesiologists Postgraduate Assembly (NYSSA PGA). He presented at the PGA eight times. He has attended 51 out of the 52 NYSSA PGAs. His files are filled with carbon-copy letters (just imagine if he had e-mail). He was redrafted in 1953 and administered anesthesia in Korea and Japan during the Korean War. In the late 1950s, as more attention was focused on resuscitation, he developed the Resuscitube® [Figure 2] and a hand bellows for resuscitation, called the Respir-Aider [Figure 3]. In attempting to popularize the Resuscitube (he strongly felt that mouth-to-mouth resuscitation was unsanitary), he met resistance from James O. Elam, M.D., an anesthesiologist at the forefront of resuscitation research (page 20). Drs. Berman and Elam later became friends and worked on airway management ideas together. Dr. Berman later helped Dr. Elam sell his idea for an Ambu Bag. Also during this time, he patented a plastic blood pressure cuff, Quik Cuff® [Figure 4] feeling that the blood pressure cuff was easily soiled and not hygienic to use repetitively from patient to patient. His innovations with plastic were at the forefront of utilizing this material in medicine and allowed the era of disposability to begin.

Dr. Berman belonged to all of his professional societies. He even served as President of the Rockaway Medical Society in New York. Despite his love of anesthesiology, he was not active in the politics of either ASA or NYSSA. This was unfortunate for both Dr. Berman and the societies that would have benefited.

Dr. Berman's interests were varied, and in the late 1960s, he embarked on the idea of treating cancer pain with total body hyperthermia. He did this on Saturdays. He presented his findings at the NYSSA scientific exhibits in 1969. Lack of resources prevented further promising research.

In the 1970s, Dr. Berman tried to further tackle innovations in airway management by making a blow-molded endotracheal tube [Figure 5] and anatomically shaped endotracheal tubes [Figure 6] and presented a tapered endotracheal tube [Figure 7] at the 1973 NYSSA PGA. Poor business acumen often thwarted his progress and career. To highlight this, when the patents were about to expire from the original airway, no provisions were made to market his product competitively. Numerous companies quickly began producing and selling Berman-type airways. Sales dwindled and eventually ceased, leaving no capital for further research and development. In 1979, he resurrected an idea he had in residency, an intubating airway. His new Berman Intubating Airway led the way for a generation of intubating devices for blind and fiberoptic intubation.

His operating room was always an environment for learning. Many young college students spent time there as their first introduction to medicine, leading the way to careers in medicine. Many drug and anesthesia equipment representatives spent time there learning about what they were selling. He would continue to research ideas and obtain patents. He had other ideas for airways, including an expandable airway and a balloon airway. He collaborated with two main plastic engineers throughout his career,

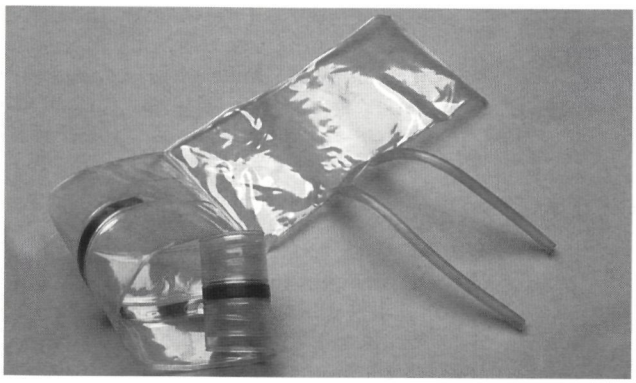

Figure 4: Quik Cuff®

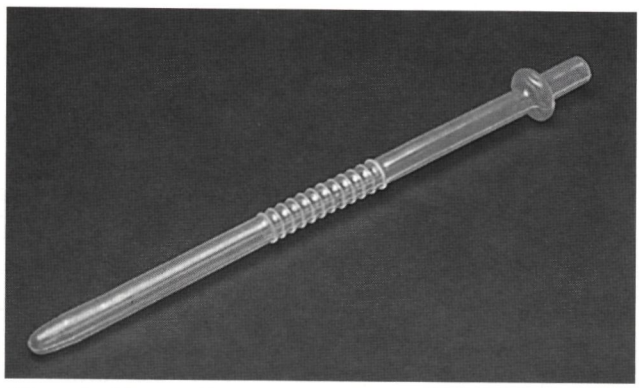

Figure 5: Blow-molded endotracheal tube

Meyer Moch and William Jordan. With advancing years and lack of a research and development team, it became harder to develop products. He always remained innovative. Toward the end of his career, while facing a Joint Commission on Accreditation of Healthcare Organizations review, his hospital would not provide for proper scavenger systems. He quickly went to the hardware store and, with 1/2-inch nipples, pipes, hose valves and hoses, assembled six Bain manifolds with scavenging hoses to comply. They passed.

One of the last published communications Dr. Berman made was a letter to the Editor of the *Anesthesia Patient Safety Foundation Newsletter*. He asked what role a retired anesthesiologist with decades of experience might play in the future and continued administration of anesthetics; it was a professional and personal plea still awaiting an adequate answer. Perhaps, if he had picked a career in academics or stayed involved with professional societies, he would be as active and prominent today as he was during his 35 years of practice.

Controversial? Always. A hero? I think he was a hero to the profession of anesthesiology, to the history of airway management and, like most ASA members, a hero to the patients, hospital and community in which he practiced. In celebrating the 50th anniversary of his airway, we celebrate his contributions and career.

Dr. Berman continues to research new ideas from his home in Far Rockaway, New York, and encourages future generations of anesthesiologists to do so.

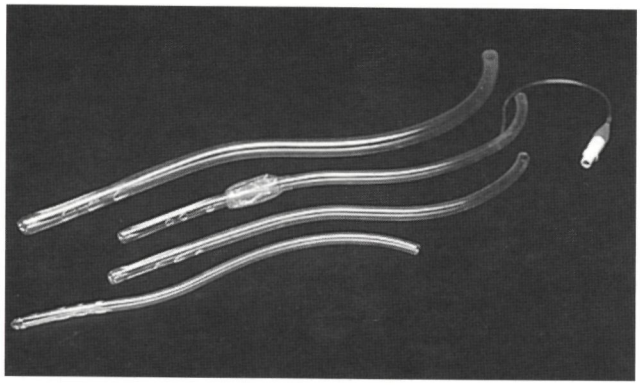

Figure 6: Anatomically shaped endotracheal tubes

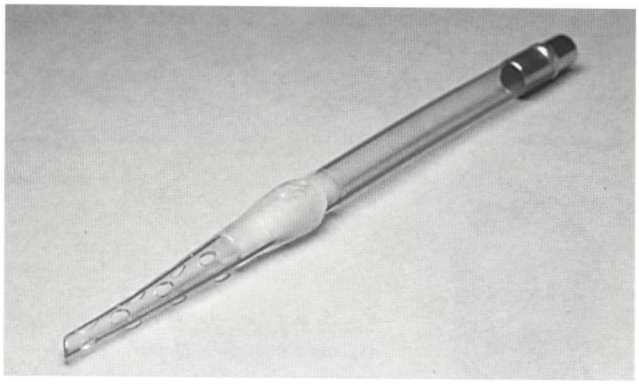

Figure 7: Tapered endotracheal tube

References available on request from the author.

James Otis Elam, M.D.: Respiratory Researcher (1918-1995)

Robert P. Sands, Jr., M.D.

Unfortunately, James Otis Elam, M.D., is a name that very few practicing anesthesiologists instantly recognize, but without this man's hard work and dedication to the profession, anesthesiology may not be where it is today. Elam contributed to the introduction of two landmark "improvements" to the field of anesthesiology and another to medicine in general.

James Otis Elam, M.D.

Elam's training began at the University of Texas, where he earned his bachelor of arts in 1942. In 1945, he received his medical doctorate from Johns Hopkins School of Medicine. A rotating internship at the United States Naval Hospital in Bethesda, Maryland, from 1945 to 1946 was Elam's next stop where he realized that the field of medical physiology interested him the most. He pursued a surgical career, believing he would have more time to study physiology. Fortunately for the field of anesthesiology, he was wrong!

Realizing the error of his ways halfway through the second year of his surgical residency, he signed on with Massachusetts General Hospital as an assistant resident in anesthesiology because there were no residency spots available in mid-year. In July of 1949, he began his anesthesiology residency at the University of Iowa Hospital. The mornings were spent administering anesthetics in the operating rooms, while afternoons found Elam performing research in the biophysics lab.

Elam's enthusiasm for research was already firmly established. As time went on, this dedication to the research side of anesthesiology led some of his contemporaries to comment that he relegated patient care to a secondary role. His commitment to research also alienated colleagues because, at times, it came across as aloofness. He was always thinking about a new project and could be impatient while trying to solve a clinical problem, but these characteristics allowed him to push the envelope in anesthesiology, resulting in the carbon dioxide (CO_2) absorption system and the Roswell Park ventilator.

The groundwork for the development of a system that could fully absorb CO_2 was already laid by Adriani and Rovenstine in 1941. They had devised a system that could absorb CO_2, but he had difficulty measuring the actual amount neutralized because the chemical titrations they utilized were prone to error. Elam believed that a device could be built to absorb CO_2 during surgery, but first, a better understanding of CO_2 homeostasis during anesthesia was necessary.

In 1951, Elam was on staff in the Department of Anesthesiology at Barnes Hospital in St. Louis, Missouri. As he was about to start his research into CO_2 homeostasis, a new department chair was appointed who wanted all research in anesthesiology to be performed using animals, not humans. Elam realized this would not be feasible and moved to Buffalo's Roswell Park Memorial Institute along with his top two collaborators, Elwyn S. Brown, M.D., and Raymond H. Ten Pas, M.D.

Using a Liston-Becker CO_2 analyzer, Elam's group was able to define three characteristics of CO_2 absorption that we now take for granted. First, interstitial space within the CO_2 canister should closely approximate tidal volume, and secondly, for CO_2 absorption to be maximally efficient, soda lime should contain 20-25 percent water. Finally, channeling was described for the first time, where expired gas flowed directly through the canister bypassing any interaction with soda lime. The amount of channeling depended upon how tightly the soda lime granules were packed and could be minimized by placing baffles in the canister.

To obtain reproducible results during his soda lime

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research, Elam needed to construct a machine that could mimic human respiration. The first working model was large and unwieldy, not unlike the first computers. But, this first model was able to provide continuous data 24 hours a day for five years. Because the machine ran continuously, Elam and his colleagues were able to test multiple breathing circuits and CO_2 canisters to ascertain the optimal design. This first model also was invaluable in calculating physiologic and anatomic dead space, and with minute adjustments, it could simulate different human respiratory patterns.

Elam postulated that if the machine could be "programmed" to breathe *like* a human being, it could be further modified to breathe *for* a human being. A prototype ventilator was constructed and dubbed the Roswell Park ventilator. Although it was not the first ventilator introduced onto the market, it was very versatile. It could work in either volume or pressure modes and could also cycle in positive-negative, positive-zero and positive pressure manners. The tests on human subjects validated the work done during soda lime research, that CO_2 homeostasis was adequate with the Roswell Park ventilator. The ventilator then became known as the Air-Shields Ventimeter ventilator and is still in use in many parts of the country today, almost 50 years later.

The CO_2 absorption system and ventilator have helped to make the practice of anesthesiology easier and safer, but Elam's contributions to the field of medicine transcend even that achievement. Elam was intimately involved in the process of bringing rescue breathing, or cardiopulmonary resuscitation (CPR) as it is known today, to the attention of the medical community and the general public.

Elam also had two powerful allies in this battle: Peter Safar, M.D., and Archer S. Gordon, M.D. Gordon initially did not support rescue breathing until he performed a study of his own using pediatric patients, reproducing Elam's results. Safar had also been working on the feasibility of rescue breathing, so they agreed that a concerted effort would be much more valuable than each working separately and possibly reproducing each others' work.

Prior to the 1950s, the accepted method of resuscitation was the chest-pressure and arm-lift technique that was shown to be ineffective by Safar and Elam. In 1954, Elam was the first to demonstrate experimentally that exhaled air ventilation was a sound technique. Elam and Safar (and later Gordon) performed many experiments demonstrating the superiority of the rescue breathing technique. The problem then became one of popularizing the method.

"Elam postulated that if the machine could be 'programmed' to breathe *like* a human being, it could be further modified to breathe *for* a human being. A prototype ventilator was constructed and dubbed the Roswell Park ventilator."

To do this, Elam enlisted the assistance of then New York State Health Commissioner, Herman Hilliboe. Hilliboe was impressed with the technique and commissioned Elam to write the instructional booklet titled "Rescue Breathing," which was distributed nationally in 1959. The success of the booklet spurred Elam to produce films demonstrating this new life-saving technique.

By 1960, rescue breathing had been adopted by the National Academy of Science, American Society of Anesthesiologists, Medical Society of the State of New York and the American Red Cross as the preferred method of resuscitation. For changing forever the face of emergency medicine, Elam was recognized by the United States Army with a Certificate of Achievement, and in 1962, the Medical Society of the state of New York presented him with its highest honor, the Albert O. Bernstein Award.

James Elam has left an indelible mark on the practice of anesthesiology and medicine with his scientific contributions. True to his legacy, he continued working to improve the field of anesthesiology until his untimely death on July 10, 1995. Detractors argue that his work was never original and that he only finished what others had begun. Even if this is partially true, it still requires an impressive amount of intelligence and perseverance to solve a problem that others could not. Elam always strived to provide the best and safest anesthetic for his patients. Because of his scientific commitment, the clinical practice of anesthesiology became significantly safer.

References available on request from the author and on the ASA Web site.

Brian A. Sellick, M.B.: Father of Cricoid Pressure Maneuver (1918-1996)

David J. Wilkinson, M.B., Ch.B.

Brian Arthur Sellick, a consultant anaesthetist at the Middlesex Hospital in London, died on July 13, 1996, at the age of 78. Although contributing widely in many branches of anaesthesia, his name is internationally known because of his description of cricoid pressure to prevent regurgitation of gastric contents during intubation of the trachea. Sellick's maneuver, as it became known, spread rapidly across the world and has been taught and practiced ever since. There are those who have suggested that the use of this type of approach to obstruct the esophagus is not new, however, and it is interesting to read the early descriptions of this sort of technique by those who practiced resuscitation in the 18th century.

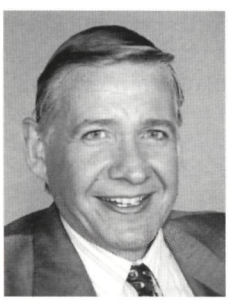
From *Anaesthesia*. 1996; 51:1194, with permission.

Brian Arthur Sellick, M.B.

The inception of "an institution for affording immediate relief to persons apparently dead from drowning" on April 18, 1774, by Thomas Cogan, M.D., and William Hawes, M.D., in London, was a paradigm shift in medical management and social behavior. Although occasional reports of successful resuscitation attempts had appeared in the medical press for several decades, there was no systematic attempt to introduce such practice on a regular basis. Cogan and Hawes gained support from a large number of doctors who lived near the River Thames and who were willing to be called out to assist in attempted resuscitations. The impetus for lay people to join in was purely financial initially: the Society resolved to pay the sum of two guineas to anyone who attempted to revive a drowned person, provided that those endeavors lasted for at least two hours!

Very sophisticated equipment was designed to facilitate this practice. The three mainstays of treatment were to restore respiration by expired air or bellows ventilation, the drying and warming of patients and the use of tobacco smoke enemas. To facilitate ventilation, there was the initial development of oral and nasal airways; from these came the development of curved metal tubes that could be placed blindly by palpation into the trachea. The initial "institution" evolved over the next decade gaining Royal patronage from George III in the process to become The Royal Humane Society. The Society* is still in existence today and is still pursuing the ideals of its ancestors in rewarding bravery and skill by the general public through a series of medals and scrolls.

Every year since its inception, the Society has awarded a series of silver and gold medals to special research projects presented in the form of essays. One of the winners of a Silver Medal in 1788 was Charles Kite of Gravesend. He wrote in his essay titled "An Essay on the Recovery of the Apparently Drowned," that "*the restoring of the action of the lungs to be of the very first importance in all our attempts to recover the apparently dead.*" In addition, he described the use of pressure on the front of the neck as follows to "*prevent the air passing into the stomach instead of entering the lungs.*" This does not appear to be a new concept of Kite's. His reporting is more in the tone of accepted technique. James Curry of Northampton went into greater detail in his "Observations on Apparent Death..." published in 1796. He wrote, "*Not merely blowing into the nostril or mouth will do – Air will pass into and distend the stomach. Therefore the second assistant with his right hand to press backwards and draw gently downwards towards the chest the upper part of the wind-*



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* This purely charitable organization is dependent totally on voluntary donations. Anyone wishing to support this further should contact the Honorary Secretary, Major General C. Tyler, Royal Humane Society, Bretenham House, Lancaster Place, London WC2E 7EP, United Kingdom.

pipe, that part which lies a little below the chin which from its prominence in men is vulgarly called Adam's Apple; by doing this the Gullet will be completely stopped up whilst the windpipe will be rendered more open to let air pass freely into the lungs." He suggested that those trying to resuscitate should continue for at least six hours!

In this we see a very different purpose between those early pioneers of resuscitation and Sellick. One group was trying to prevent forced ventilation of the stomach while Sellick was trying to prevent gastric contents causing soiling of the lungs. Sellick introduced most effectively a reverse Kite or Curry.

Sellick started his anesthesia training at Middlesex Hospital and was a junior resident there during the London Blitz. At the end of the war, he was appointed to the staff of Middlesex and started to specialize in thoracic anesthesia. His work on early ventilators and hypothermia were pivotal in those pioneering days. He had visited Swan's Clinic in Denver, Colorado, and brought back to London the practices used there. The team that developed the surface cooling technique for the treatment of atrial septal defects relied heavily on Sellick's undoubted skills. But strangely, it was not this work or his later work with screen oxygenators that were to be his lasting memory, though he taught several generations of anaesthetists the finer points of cardiac and thoracic anesthesia.

His paper on cricoid pressure appeared in the *Lancet* in 1961. It is an excellent short communication and bears rereading now. He wrote, "*When the contents of the stomach or esophagus gain access to the air-passages during anaesthesia, the consequences are disastrous. In spite of modern anaesthetic techniques or sometimes regrettably because of them, regurgitation is still a considerable hazard during induction of anaesthesia, particularly for operative obstetrics and emergency general surgery.*" This was a time in which the literature was full of reports of disasters of this nature, and a crucial investigation had been undertaken by the Association of Anaesthetists of Great Britain and Ireland into 43 cases of regurgitation or vomiting that proved fatal during anaesthesia. The results of this investigation and suggestions for the management of these cases was published in *Anaesthesia* in 1951 and was the forerunner of all subsequent anesthesia audit and critical incident reporting. The greatest concern was in operative obstetrics, and a variety of techniques were described to minimize problems, but they still arose.

Sellick's seminal paper shows lateral X-rays of the neck with the esophagus containing a latex tube full of contrast medium, and the effect of cricoid pressure is wonderfully demonstrated. "*Cricoid pressure must be exerted by an assistant. Before induction, the cricoid is palpated and lightly held between the thumb and second finger; as anaesthesia begins, pressure is exerted on the cricoid cartilage mainly by the index finger. Even a conscious patient can tolerate moderate pressure without discomfort but as soon as consciousness is lost, firm pressure can be applied without obstruction of the patient's airway. Pressure is maintained until intubation and inflation of the cuff of the endotracheal tube is complete.*" The diagrams and photographs of this application of pressure are excellent. He goes on to echo the thoughts of Kite and Curry saying, "*During cricoid pressure the lungs may be ventilated by intermittent positive pressure without risk of gastric distension.*"

He was aware that this technique should not be relied on totally and that there were drawbacks in its use. He advocates the use of all possible methods to try to empty the patient's stomach using a Ryle's tube or esophageal tube and adds that these should be removed before induction to prevent their presence from hampering the natural esophageal sphincters. He describes preoxygenation, an open vein and the importance of ready suction and a tipping trolley much as we would today. In the discussion, he writes, "*The 'old-fashioned' inhalational induction in the supine or lateral position with head down tilt has something to commend it. If vomiting occurs, it usually does so at lighter levels of anaesthesia when protective reflexes are still present.*" He goes on to say about cricoid pressure that "*it should never be used to control active vomiting because the esophagus might be damaged by vomit under high pressure.*" His paper then highlights the management of 26 high-risk cases in which his technique was used without any problems at all. He mentions that in three of these cases, when the cricoid pressure was removed after the airway had been secured, the pharynx was filled with gastric contents, thus illustrating the effectiveness of the technique for at least those three cases.

Sellick's elegant paper changed the face of anesthesia across the world. Every anesthesiologist is now familiar with a rapid sequence induction with cricoid pressure, although some do not realize the association with Brian Sellick. What did he think of this? We do not know; his con-

Continued on page 25

Nitrous Oxide Artifacts Available for Viewing at WLM

David Clayton, R.N.

As a relative newcomer to the field of anesthesia, I was fortunate enough to visit the Wood Library-Museum of Anesthesiology (WLM) and obtain a better understanding of the beginnings and advances made in the practice of anesthesia. To chronologically mention the articles relating to nitrous oxide on display at the WLM, it would be most appropriate to begin with the oil portrait of Sir Humphry Davy.

The circa 1821 portrait of Sir Humphry Davy was painted by Sir Thomas Lawrence and is a very impressive and significant piece for the museum. Davy did numerous studies beginning in 1799 and published several papers on nitrous oxide. In a paper published in 1800, Sir Davy suggested that it was "not improbable" for nitrous oxide to be utilized in some surgical situations. It was many years later, however, before any significant utilization of nitrous oxide was seen in surgical situations.

Walking from the portrait of Davy, you come to a "safe passage order" for dentist Horace Wells, signed by Secretary of State James Buchanan in 1846. Though nitrous oxide had been in existence for years, it was used mainly for social entertainment. Wells is given the credit for becoming the first person to utilize the pain-relieving effects of nitrous oxide in 1844 by having his own tooth extracted while under the influence of the "laughing gas." Throughout the year 1845, Wells used the gas in his dental practice, thus being given the credit by some as the founder of "modern anesthesia."

Portrait of Sir Humphry Davy

S.S. White Dental Oxygen-Gas Apparatus

One of the earliest anesthesia machines on display in the museum is a circa 1898 "S.S. White Dental Oxygen-Gas Apparatus." This piece, with the accompanying literature for the apparatus, is in incredibly good condition. Of interest to me is the fact that many early advances in anesthesia came from the field of dentistry. The S.S. White Dental Company made tremendous advances in the manufacture of nitrous oxide, thus eliminating the need to manufacture the gas "on site." S.S. White also produced the first nonfreezing form of nitrous oxide. This significant achievement eliminated the need to wrap the valves in warm towels, allowing for more even flow of the gas, thus producing a more stable environment for the physician and ultimately the patient. The S.S. White Company is still in existence today and continues to produce dental equipment.

Teter Nitrous Oxid-Oxygen Apparatus

The remainder of the articles relating to nitrous oxide on display at the WLM demonstrates the advancements made to the devices for delivering nitrous oxide as well as the other gases that came about as the years progressed. The earliest machine available for viewing that utilized the addition of oxygen to the machine is the Teter Nitrous Oxid-Oxygen Apparatus, circa 1908. Dentist Charles Teter began producing anesthesia machines in Cleveland, Ohio. Of interesting note is the fact that Teter was an early advocate for hospitals' generating their own supplies of nitrous oxide.

Advances occurred rapidly in improving the delivery of gases. The New Clark anesthesia machine, circa 1910, touted a "one handle control, thorough mixing chamber, full volume and free flow." These advances to the dental delivery systems led to the continued improvements that would revolutionize the gas delivery systems used in hospitals.

As new inhalational agents became available, the anesthesia machines changed to accommodate the additional gases. The 1922 Gwathmey-Seattle Portable anesthesia machine on display is the predecessor of a four-valve machine that would

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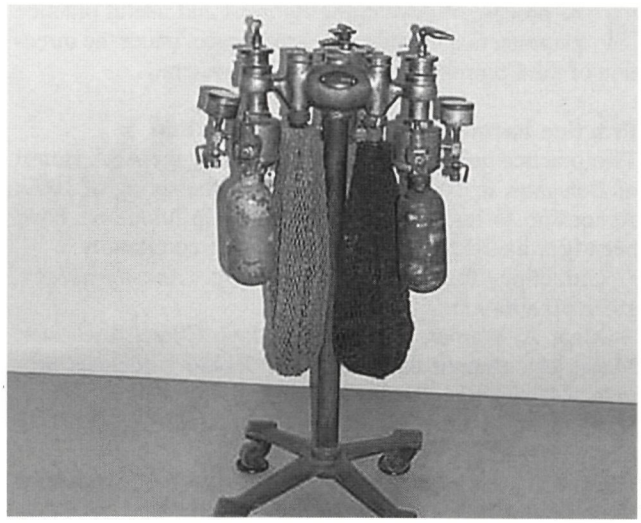
S.S. White Dental Oxygen-Gas Apparatus, circa 1898



Teter Nitrous Oxid-Oxygen Apparatus, circa 1908

Photographs courtesy of the Wood Library-Museum of Anesthesiology

accommodate oxygen, nitrous oxide, carbon dioxide and/or ethylene. This machine is very compact and portable.

Numerous anesthesia machines on display in the WLM incorporate the use of nitrous oxide. Despite its awkward beginnings as an anesthetic, nitrous oxide continues to be a featured gas on new anesthesia machines today. In addition, nitrous oxide continues to be a drug of choice in the dental office to put patients at ease.

This brief article only touches the surface of the vast amount of historical artifacts available for viewing at the WLM. Anyone with an interest in the field of anesthesiology should be encouraged to visit the museum in person. The staff is very knowledgeable, friendly and helpful. If unable to attend the museum in person, obtain a copy of its CD and take a "virtual tour" or visit its Web site <www.asahq.org/wlm> and get a feel of what the museum has to offer.

Many thanks to those who have contributed to the museum and to those who take the time to preserve the artifacts for all of us to view and enjoy.

Brian A. Sellick, M.B.: Father of Cricoid Pressure Maneuver

Continued from page 23

temporaries describe him as "that sort of a chap who was full of good ideas." He was not particularly interested in history, and there is no evidence that he ever read the words of Kite or Curry. He was just another lateral thinker.

All anesthesiologists and most patients should remember the name of Brian Sellick with much gratitude. He changed what was a frightening, dangerous induction of anaesthesia to a more controlled and safer procedure. But we should not forget the other contributions he made to our specialty, and his record with hypothermia in cardiac surgery had no equal in his time in Europe. He received many accolades during his life, including the Henry Hill Hickman medal of the Royal Society of Medicine and the Gold Medal of the Royal College of Anaesthetists. A happy man with a wonderful sense of humour and a ready smile, he left the world a better place and his specialty a safer one.

References available on request from the author and on the ASA Web site.

Practice Parameters: Some New; Others Under Development or Revision

James F. Arens, M.D., Chair
Committee on Practice Parameters

The process of developing rigorous and useful practice parameters continues at a strong pace, under the direction of the Committee on Practice Parameters.

Practice Parameters Recently Published

Two practice guidelines were approved by the ASA House of Delegates in 1998 and published in the spring of 1999. According to task force members, both guidelines have been very well-received by the practicing community.

- Guidelines for Preoperative Fasting. *Anesthesiology.* 1999; 90:896-905.

Mark A. Warner, M.D., at the Mayo Clinic, Rochester, Minnesota, chaired the task force. These guidelines provide a succinct synthesis of available scientific evidence, with emphasis on a rational and cost-effective approach to management.

- Guidelines for Obstetrical Anesthesia. *Anesthesiology.* 1999; 90:600-611

Joy L. Hawkins, M.D., of the University of Colorado Medical Center, Denver, Colorado, chaired the task force. These guidelines provide a rigorous and balanced analysis of current scientific literature and practitioner opinion.

Suggested Revision of ASA Policy Statement on Practice Parameters

The Committee on Practice Parameters is recommending a minor revision of the ASA Policy Statement on Practice Parameters. As previously reported to the Board of Directors, the committee has determined that adequate scientific evidence is difficult to obtain for many aspects of clinical practice that might be considered appropriate topics for practice parameters. To meet the need for guidance in the absence of sufficient scientific evidence, the committee has developed a new type of practice parameter called a *practice advisory.*

Practice advisories are systematically developed reports that are intended to assist decision-making in areas of patient care where scientific evidence is insufficient. Advisories provide a synthesis and analysis of expert opinion, clinical feasibility data, open forum commentary and consensus surveys. Advisories are not intended as standards or guidelines. They may be adopted, modified or rejected according to clinical needs and constraints.

Practice parameters are developed to provide guidance or direction for the diagnosis, management and treatment of specific clinical problems. The term "practice parameter" may refer to Standards, Guidelines or Advisories.

Practice standards are rules or minimum requirements for clinical practice. They represent generally accepted principles for sound patient management. They may include statements of practice policy and protocol or specific recommendations for patient management. Standards evolve through a variety of processes that draw upon broad-based consensus and the consideration of scientific evidence. Standards may be modified under unusual circumstances, e.g., extreme emergencies, unavailability of equipment, etc.

Practice guidelines are systematically developed recommendations for patient care that describe a basic management strategy or a range of basic management strategies. Guideline recommendations are supported by analysis of the current literature and by a synthesis of expert opinion, open forum commentary, clinical feasibility data and consensus surveys. Guidelines are not intended as standards or absolute requirements. They may be adopted, modified or rejected according to clinical needs and constraints.

Variances from practice parameters may be acceptable based upon the judgment of the responsible anesthesiologist. Practice parameters are intended to promote beneficial or desirable outcomes but cannot guarantee any specific outcome. Practice parameters are subject to periodic revision as warranted by the evolution of medical knowledge, technology and practice.

The ASA Board of Directors and House of Delegates recommends subjects for practice parameters. Committees that develop practice parameters are not empowered to define interpretations for specific institutions, organizations or practices.

Members of the Society are responsible for interpreting and applying practice parameters in their own institutions and practices. The practice parameters developed by ASA are not intended as unique or exclusive indicators of appropriate care. An individual physician should be able to show that the care rendered, even if departing from the parameters in some respects, satisfies the physician's duty to the patient under all the facts and circumstances.

James F. Arens, M.D., is Vice President for Clinical Affairs, Chief Executive Officer and Professor of Anesthesiology at the University of Texas Medical Branch, Galveston, Texas. He served as ASA President in 1989.

In addition to Standards, Guidelines and Advisories, the ASA House of Delegates has approved a number of documents variously titled Statements, Positions or Protocols. These documents represent opinions of the House on a variety of subjects, but have not necessarily been subjected to the same level of formal scientific review as Standards, Guidelines or Advisories. Variances from the opinions expressed in these documents may also be acceptable, based on sound judgment of the responsible anesthesiologist.

Practice Parameters Under Development

The new practice parameters are as follows:

Advisory on Patient Positioning: Dr. Warner chairs this task force. A practice advisory for Patient Positioning in Anesthesia will be ready for consideration by the House of Delegates in October 1999.

The Task Force on Patient Positioning has completed its draft and intentionally limited its scope to peripheral nerve injuries. However, ASA and Dr. Warner have been asked by several members to address the issue of perioperative blindness (ischemic optic neuropathy). Therefore, I have recommended that this task force develop a practice advisory on the subject of Perioperative Blindness. Dr. Warner feels this can be done in two meetings, one of which can be held in Dallas at the Annual Meeting.

Advisory on Preanesthesia Evaluation: In response to continued interest from the ASA membership, the Task Force on Preoperative Testing has reconvened under the direction of L. Reuven Pasternak, M.D. Due to the lack of sufficient scientific evidence, the task force will develop a practice advisory rather than a practice parameter. The task force will endeavor to develop a document that recognizes the diversity of evaluation needs and capability in different practice settings and emphasizes the importance of individualized judgments. This advisory should be ready for consideration by the House of Delegates in October 2000.

Advisory on Recovery from Anesthesia: In response to the rapid growth in ambulatory and outpatient anesthesia, the committee has recommended a practice advisory on recovery from anesthesia. Jeffrey H. Silverstein, M.D., will chair this task force. The task force will hold its first meeting toward the end of 1999, and a completed product is anticipated in 2000 or 2001.

Advisory on Basic Expectations for Anesthesia Practice: The intent of this advisory is to articulate a set of fundamental and mutually compatible expectations about the practice of anesthesia as an individual or as part of an anesthesia care team. The advisory would focus on the basic or minimum expectations regarding such features of care as the preoperative evaluation, intraoperative conduct of anesthesia, medical direction ratios and postoperative care. This advisory would be highly dependent upon consensus formation and broad-based opinion surveys. The committee believes that this task force should be composed of senior-ranking members of ASA. Carl C. Hug, Jr., M.D., has agreed to serve as chair. Members of the committee who have volunteered to serve with Dr. Hug include David Glass, M.D., Michael A. Ashburn, M.D., and Dr. Silverstein. Dr. Silverstein wishes to serve as a consultant. Drs. Arens and Hug will develop a final list of task force members. This task force will convene in 2000.

Parameters Undergoing Revision

Existing practice parameters are subject to periodic review and revision about once every five years. At the request of the committee, the Guidelines for Management of the Difficult Airway and the Guidelines for Pulmonary Artery Catheterization (both initially approved in 1992) are now undergoing review.

Robert A. Caplan, M.D., of the Virginia Mason Medical Center, Seattle, Washington, will chair the task force for the review of the Guidelines for Management of the Difficult Airway; Michael F. Roizen, M.D., of the University of Chicago, will chair the task force for review of the Guidelines for Pulmonary Artery Catheterization. Both task forces will perform a systematic re-evaluation of all guideline objectives, evidence and content. Specific emphasis will be placed on the examination of recent changes in knowledge, technology and patterns of practice.

An Open Forum on the proposed revisions for the Guidelines for Management of the Difficult Airway will be held on October 9, 1999, in Dallas from 2 to 5 p.m., at the Adam's Mark Hotel in conjunction with the ASA Annual Meeting (page 28). Revisions of both guidelines should be ready for consideration by the House of Delegates in October 2000.

A revision of the Guidelines for Sedation and Analgesia by Nonanesthesiologists will commence in 2000, and a revision of the three guidelines for pain management

(Acute Pain Management, Cancer Pain Management, Chronic Pain Management) will be considered in 2001.

Brief Update on Practice Parameter Development

A detailed description of the development process for practice parameters can be found in the 1997 committee's Annual Report. A few highlights are mentioned here.

A member of the committee closely monitors each practice parameter. Monitoring assures that parameters are appropriate in scope and purpose.

The extensive technical and analytic aspects of practice parameter development have been successfully consolidated into a single, efficient methodology unit. This unit is composed of two experienced health service analysts and a research librarian. These individuals utilize state-of-the-art techniques for literature searching, clinical surveys and scientific analysis of the available evidence. The extensive bibliography associated with practice parameter development is now continuously stored and updated in CD format. The activities of the methodology unit are directly supervised by a member of the committee, Dr. Caplan. The cost of parameter development remains low compared to that of other specialties, primarily due to the policy of voluntary (uncompensated) participation by task force members and the efficiencies of the methodology unit.

Of special note, the process of developing practice parameters creates an extensive and valuable repository of information for the ASA membership. A technique for archiving this information on CD-ROM has recently been developed and successfully deployed. This technology also includes a "search engine" that facilitates the recovery of specific data.

Approved parameters are published in *Anesthesiology* and reprints are available from the ASA Executive Office. Practice parameters are also available for inspection and downloading at the ASA Web site <www.ASAhq.org/practice/>.

The Committee on Practice Parameters gratefully acknowledges the valuable contributions of task force chairs, task force members, consultants and other members of ASA who have participated in the development of evidence-based guidelines. The committee welcomes suggestions for new parameter topics and for ways to improve the development process.

Open Forum to Discuss Revision of Difficult Airway Guidelines Scheduled

Robert A. Caplan, M.D., Chair
Task Force on Difficult Airway Management

An important opportunity for ASA members to comment on a proposed revision of the ASA Practice Guidelines for Management of the Difficult Airway will come during the ASA Annual Meeting, October 9-13, 1999, in Dallas, Texas.

On Saturday, October 9, from 2 p.m.-5 p.m., members of the ASA Task Force on Difficult Airway Management will conduct an Open Forum to hear comments and suggestions about proposed changes to this practice guideline. The Open Forum will be held at the Adam's Mark Hotel in the Lone Star Ballroom A-111.

ASA practice guidelines undergo review and revision approximately once every five years, as warranted by changes in clinical practice, medical technology and scientific data. The task force plans to present revised Practice Guidelines for Management of the Difficult Airway to the ASA House of Delegates at the ASA Annual Meeting in October 2000.

Members of the task force include: Robert A. Caplan, M.D., Chair, Jonathan L. Benumof, M.D., Frederic A. Berry, M.D., Casey D. Blitt, M.D., Robert H. Bode, M.D., Frederick W. Cheney, M.D., Richard T. Connis, Ph.D., (Health Services Methodologist), Orin F. Guidry, M.D., and Andranik Ovassapian, M.D.

According to Dr. Caplan, the revision process is highly dependent upon input from the anesthesia community. The Open Forum provides an important opportunity for practitioners to meet with task force members and offer suggestions that will have a direct impact on the final product.

For more information about the revision of the Practice Guidelines for Management of the Difficult Airway, contact Dr. Caplan by e-mail at <Robert.Caplan@vmmc.org>.

... Committee on Professional Diversity Activities

Joanne M. Conroy, M.D., Chair
Committee on Professional Diversity

The Committee on Professional Diversity was approved as a standing committee of the ASA by the House of Delegates in 1997 and charged with identifying and integrating the talents of our diverse membership into ASA. Although initially perceived as a forum for issues related to race and gender, the committee has functioned more broadly in addressing the emerging challenges of an increasingly diverse workplace.

The committee serves as a resource throughout the year for members who seek information related to workplace law and resources related to effective integration of older anesthesiologists and their families into busy anesthesia practices. Anesthesiologists who would otherwise have retired 20 years ago are finding that their health as well as their enthusiasm for their specialty allows them to continue to practice. As a society, we are striving for more balance in our personal and professional lives. More anesthesiologists now choose to work less because of family issues or dual careers. These changing expectations will continue to challenge our traditional staffing and call coverage practices.

When Wall Street assesses the advantages and challenges in managing an integrated work force, time and again the experts demonstrate that the benefits far outweigh the costs. While it sounds nice and it feels good to be one of the "best companies" for women and minorities, does the market pay extra for diversity? When reviewing top performing companies whose stock has appreciated significantly over the past five years and who also matched or exceeded the S&P, we find that many of these companies are diversity friendly. In other words, diversity is important for business success and Wall Street *does* pay extra for it. Businesses feel that diversity is a competitive advantage. People approach similar problems in different ways, and thus a diverse work force can arrive at better business solutions.

In the practice of anesthesiology, we have found that diversity presents similar challenges and advantages. In our department, we have identified a mechanism allowing older anesthesiologists to graduate from the 24-hour call schedule to a 16-hour schedule and then to an eight-hour call schedule. The advantages are greater continuity of the daily work force and larger blocks of post-call time allocated to younger staff with family obligations. Richard M. Flowerdew, M.D., a member of the Committee on Professional Diversity, heads a group at Maine Medical Center in Portland, Maine. He has created a computer program that calculates effort and compensation and distributes work responsibilities appropriately between members of his group. Such approaches maximize the ample experience of older practitioners, harness the energy of younger practitioners and create a flexible environment that allows time for development within and outside of the workplace. As articulated in a *Wall Street Journal* article in June 1999, retention of employees has more to do with work environment than salary. The most important characteristic of a job is a sense of professional development and satisfaction with the work environment. Successful environments value equity and engender employee loyalty, enthusiasm and involvement.

"The most important characteristic of a job is a sense of professional development and satisfaction with the work environment. Successful environments value equity and engender employee loyalty, enthusiasm and involvement."

Does this mean that we can avoid all workplace conflicts with appropriate management? Unfortunately, the conflicts arising between changing workplace expectations and traditional definitions have resulted in a new, busy

Joanne M. Conroy, M.D., is Professor and Chair, Department of Anesthesiology, Medical University of South Carolina, Charleston, South Carolina.

legal subspecialty, workplace law. The Committee on Professional Diversity fields many queries from anesthesiologists seeking information on management of workplace inequities. Workplace disagreements do not have to end up in a courtroom. In fact, well-informed and educated employers and employees can often mediate to a win-win situation.

The Committee on Professional Diversity has identified Web-based and printed material that address return-to-work after many injuries and illnesses. The majority of practitioners using our resources want to return to work but are encountering numerous obstacles. Changes in Equal Employment Opportunity regulations and the Americans with Disabilities Act have expanded the list of covered disabilities. Employers and employees need to be educated regarding their responsibilities and rights. Employers with more than 15 employees for a period of 20 weeks in the current or previous calendar year are obligated to attempt to develop reasonable accommodations for disabled employees. The average cost for accommodations is usually less than $500. The real benefit, however, is the integration of a willing employee into the workplace. There is still much committee work to be done in the area of education and publicizing creative solutions for the workplace challenges facing our specialty.

The laws of contract protect parties. Employees have rights, as do employers, that are guaranteed by law. Equal opportunity is really more than a patriotic slogan, and personnel policies are not as important themselves as how you implement them. Creative and lawful decision-making requires the consideration of many alternatives and enables the workplace to accommodate a diverse group of employees. The *soft stuff* is harder to manage than the *hard stuff.* However, attention to the concepts that value diversity will keep your practice and your specialty a top performer.

Please join us at the ASA Professional Diversity Luncheon on Monday, October 11, 1999, in Dallas, Texas. The committee is showcasing a few of these challenges and some creative ways of addressing them. Our keynote speaker will be Michael F. Roizen, M.D., who will be reviewing his Age Reduction Plan. Our round-table discussions will focus on fatigue and stress and their effect on physician well-being, occupational risks and how to avoid them, hypnosis as a tool to manage stress, part-time employment and well-being programs.

Correction to 'What's New In ... Coding and Billing'

Published in July 1999 *ASA NEWSLETTER*

L. Charles Novak, M.D., Chair
Committee on Economics

An erroneous statement was made in the section on "Block Codes — Sweeping Changes" (page 29). The incorrect statement was that "use of fluoroscopy" is included in the new spinal and epidural codes. My apologies! It is the *injection of contrast material* that is included in the new spinal/epidural codes. There will be a separate *new* code for "fluoroscopic guidance and localization of needle or catheter tip" that will be reportable when fluoroscopy is used. Additionally, there will be a new code for epidurography that can be used when a formal study and report are completed.

When CPT 2000 is published and when relative values (both RBRVS and ASA) are finalized, the Committee on Economics plans to publish further and more detailed information for members.

Greater Hope for Physician Unions?

Karin Bierstein,
Practice Management Coordinator

On June 20, the American Medical Association's (AMA) House of Delegates voted to form a physician union. The new entity is rapidly taking shape and will soon be filing a notice of intent to form a bargaining unit with the National Labor Relations Board. Initial plans call for AMA to assist in the formation of many local bargaining entities over the next few years.

Because federal antitrust law has not changed and independently practicing physicians are still not able to bargain collectively over fees, the AMA union will only be open to the 17 percent of practicing physicians who are W-2 employees. (See July 1999 and May 1998 "Practice Management" columns in the *NEWSLETTER* for explanations of this statement.) Where allowed, the union will also offer membership to residents. The other eligible physicians among the 108,000 potential members work for hospitals, health plans and universities. Forty thousand physicians already belong to unions, up from 25,000 two years ago. Clearly, the interest in the potential benefits of union membership is growing rapidly and the resistance of the AMA leadership, long opposed to unionization, was no match for rank-and-file hunger for greater negotiating power vis-a-vis third-party payers.

AMA has stressed that the new union will seek to bargain over many issues other than reimbursement. Health plan limitations on patient referrals to specialists, limits on hospital lengths of stay, drug formularies and determinations of medical necessity are also priority concerns. To distinguish the physician union from more conventional labor organizations, guiding principles establish that it will never affiliate with the latter nor engage in strikes. Its name has not been settled yet but is likely to avoid the words "labor," "union" and "bargaining unit."

Public reaction has been mixed. The insurance industry obviously does not support the development of physician unions. Patrick G. Hays, CEO of the Blue Cross and Blue Shield Association, said in a paid advertisement: "Allowing doctors to form unions will have immediate and dire consequences for American consumers. If physicians are permitted to set prices for their services, the inevitable result will be higher premiums."

Some physicians continue to believe that unionization is incompatible with professionalism. A June 25 *New York Times* editorial concluded, however, that "if doctors use collective bargaining to improve patient care standards, unionization may turn out to be a strong force against health plans that unfairly use their market power to limit quality of care."

For independent physicians, state or federal legislation will still be necessary. Representative Tom Campbell's (R-CA) bill that would allow physicians to negotiate collectively, exempting them from antitrust prosecution, now has some 135 co-sponsors. Passage of the Quality Health Care Coalition Act of 1999 (H.R. 1304) is a prime objective of AMA's – and also something that the two powerful congressional committee chairmen having jurisdiction over the bill, Sen. Orrin Hatch (R-UT) and Rep. Henry Hyde (R-IL), adamantly oppose. (See the "Washington Report" in the July *NEWSLETTER* for further details of the Campbell bill.)

Of equal interest is the Texas legislation signed into law by Governor George W. Bush on June 23. The new law will allow physicians in independent practices to negotiate collectively through third-party administrators on contract and reimbursement matters without fear of the antitrust enforcement authorities. There is no contradiction with federal law: the statute provides that the state attorney general will supervise the bargaining process, up to and including approving or disapproving any agreements reached with payers. The process thus takes on the mantle of state action and is immune to federal antitrust prosecution. The statute also limits the size of a bargaining group to no more than 10 percent of the licensed physicians in a given area. Strikes and boycotts remain illegal.

The managed care industry and business interests lobbied as heavily against the legislation as physicians lobbied in its favor, with strong AMA support. Test litigation is probably inevitable. If the law survives, it will be interest-

ing to see whether fears of a Pandora's box being opened by allowing the attorney general to sit at the bargaining table prove justified.

Meanwhile, it appears that similar legislation may be introduced in several other states, including Illinois, Pennsylvania and Rhode Island.

Medicare Will Not Buy More "Black Box Edits"

Under considerable congressional pressure, the Health Care Financing Administration (HCFA) last year began purchasing commercial software that "bundles" pairs of medical or surgical procedures and denies payment for one of the two procedure codes. The fact that the "edits," or bundled pairs, were considered trade secrets that could not be disclosed to physicians (hence earning the label "black box") was, if anything, more offensive than the edits themselves. HCFA Administrator Nancy-Ann Min DeParle testified that she personally did not consider the secrecy fair and that she would resist their use in the Medicare program. (See September 1998 and January 1999 *ASA NEWSLETTER* "Practice Management" columns.)

Taking the next step, Ms. DeParle announced in late June that the agency will "seek out contracts" not containing confidentiality restrictions in future purchases of bundling systems. The current contract with McKesson HBOC runs until October 2000, when HCFA will seek new proposals.

The AMA's Correct Coding Policy Committee (CCPC) meets regularly to review proposed Medicare code edits. The majority of those edits have been developed as part of Medicare "Correct Coding Initiative" (CCI) and have never been considered confidential. The CCPC, on which some 15 medical specialties are represented, including anesthesiology in the person of Committee on Economics member Karl E. Becker, Jr., M.D., has been hamstrung by the confidentiality provisions in its efforts to share information with the practicing physician community. HCFA's new policy on purchasing code edits will undoubtedly receive a highly favorable reaction from the CCPC.

The potential savings from bundling procedures into a single payment continues to attract payers, of course. HCFA estimates that the CCI, which has been in effect since January 1996, has saved the Medicare program $700 million. Clearly, mere disclosure will not be enough to block the implementation of every undesirable edit. Another 886 black box edits developed under the current contract with McKesson HBOC were scheduled to go into effect on July 1. The ASA Washington Office would like to repeat its request that ASA members help identify edits that we may be able to challenge by providing us with all the necessary information on the procedures and payers involved.

Wait Begins for Final Rules on Facility Payments for Pain Management Services

After multiple postponements, HCFA finally set a firm deadline for the submission of formal comments on its two proposed rules that would change payment policies and rates for services performed in ambulatory surgical centers (ASCs) and hospital outpatient departments (HOPDs), respectively. Members of the committees on Pain Management and Economics wrapped up a year's efforts and provided final input that allowed ASA to file very detailed and well supported comments on July 30.

The proposals would not affect professional fees. Since they would either reduce or eliminate payments to ASCs and HOPDs for many of the epidurals and nerve blocks, however, anesthesiologists might no longer have access to the facilities in which they provide those services. The proposed payment changes are as follows:

CPT Codes	ASC	HOPD
62273-62298	From $314 to $241	From "reasonable cost" to $164.03
64410-64680	From $314 to ***$0***	From "reasonable cost" to $154.26

The most troubling change is obviously the proposed elimination of any ASC facility payment at all for nerve blocks. The theory behind the change is that these procedures can be performed safely in physicians' private offices, but ASA argued that the underlying data are flawed

for several reasons. ASA readers are well aware that the majority of the nerve blocks as well as the neurolytic injections require fluoroscopy units and/or other sophisticated imaging equipment that will never be affordable in the private office.

Questionable data are also behind the low proposed payment rate for HOPD procedures. HCFA grouped procedures that it deemed clinically homogeneous in more than 300 classes and then used the median cost of procedures in each classification as the prospective allowable for all related procedures. Elimination of nearly half of the 96 million HOPD claims in the payment database and other statistical techniques resulted in 20-fold variations between minimum and maximum historical payments and, we submitted, unrepresentative medians.

Numerous anesthesiologists, other physicians and representatives of the ASC industry also have filed comments protesting the changes (which affect many nonanesthesia procedures in the CPT book as well). HCFA has announced that it will not finalize the rules or implement changes in payment policies until after all Y2K issues are satisfactorily resolved some time after the first quarter of next year. There is reason to believe that the final policies will vary from the proposals.

Thank you to the committee members, consultants and individual anesthesiologists who provided ASA staff with the clinical and financial information that went into our comments. Both letters are posted on the ASA Web site at <www.ASAhq.org/Washington/>.

60 Days to Respond to Settlement Offer Resulting From Medicare Audit

HCFA has issued a "Program Memorandum" to all Medicare carriers advising them that they must now give physicians 60 days, rather than 30, to respond to a notice that Medicare believes that there has been an overpayment.

Effective July 1, medical practices will have a more reasonable time period within which to evaluate the options described in the notice from their carrier. These options involve acceptance of the proposed amount to be refunded or assent to a more extensive audit based on a "statistically valid random sample" of the practice's claims.

Call for Resident Component Governing Council Candidates

Stephen J. Kimatian, M.D., Chair
ASA Resident Component Governing Council

Once again, it is time to start thinking about resident activities during the ASA Annual Meeting in Dallas, Texas. This year, the Resident Component House of Delegates will convene on Saturday, October 9, 1999. During this meeting, delegates from across the United States will address issues important to resident training and elect three new Governing Council members: Chair-Elect, Alternate Delegate and Secretary. A description of the responsibilities of each position in the Resident Component Governing Council is outlined below.

Chair (one-year position)

The ASA Resident Component Chair assumes the duties of this office at the conclusion of the ASA Annual Meeting. This individual will have completed one year of service as the Chair-Elect. Responsibilities of this position include leading the annual ASA Resident Component House of Delegates meeting (held in conjunction with the ASA Annual Meeting) as well as running the March and August Resident Component Governing Council meetings, which occur at the time of the ASA Board of Directors meetings. In addition to these leadership roles, the Chair also serves to organize communication between the Governing Council and residency programs and coordinate activities between such organizations. Past projects by the Chair have focused on recruiting quality medical students for our residency programs, retaining ASA members as residents transition into the work force and organizing resident components in state societies that lack one.

Chair-Elect (two-year position*)

Following election as Chair-Elect, this individual becomes familiar with the duties of the Chair. The Chair-Elect often undertakes special projects in conjunction with the Chair. Only individuals with more than 18 months of residency/fellowship remaining are eligible for election. (*Following the one-year term as Chair-Elect, the individual holding this office assumes the position of Chair of the Governing Council for the following year.)

Delegate (one-year position)

The individual who assumes this position serves as the representative of the ASA Resident Component to the American Medical Association Resident Physicians Section House of Delegates, which meets twice a year in December and June. Additionally, this person represents the Resident Component as an ex-officio member of the ASA Board of Directors and as a voting member of the ASA House of Delegates.

Alternate Delegate (two-year position*)

During the first year of this term, the Alternate Delegate becomes familiar with the role of Delegate and attends all meetings with the current Delegate. Again, only individuals with at least 18 months of residency/fellowship remaining are eligible for election. (*The position of Alternate Delegate is similar to that of Chair-Elect in that the individual who is elected to this position advances to the position of Delegate after serving a one-year term.)

Secretary (one-year position)

The individual elected to this office is responsible for the transcription and distribution of the minutes of all meetings of the Resident Component Governing Council and the Resident Component House of Delegates as well as the credentialing of delegates for the House of Delegates meeting.

In addition to the above individual responsibilities, the Resident Governing Council is responsible for coordinating resident events at the ASA Annual Meeting, appointing the resident who serves as the *ASA NEWSLETTER* "Residents' Review" Editor and nominating the Resident Representative to the Accreditation Council on Graduate Medical Education Residency Review Committee. The above descriptions are outlines and are certainly not inclusive of all duties, responsibilities or activities of the Resident Component Governing Council. The newly elected Governing Council members

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Stephen J. Kimatian, M.D., is a Fellow in Pediatric Anesthesia, Children's Hospital Medical Center, Cincinnati, Ohio.

Candidates Announce for Elected Office

Thirteen ASA members recently have announced their candidacies for elected office. The anesthesiologists and the offices they seek are:

- **President-Elect**
  Neil Swissman, M.D.
- **First Vice-President**
  Terry L. Dodge, M.D.
  Barry M. Glazer, M.D.
- **Vice-President for Scientific Affairs**
  James E. Cottrell, M.D.
- **Secretary**
  Thomas H. Cromwell, M.D.
  Marcelle M. Willock, M.D.
- **Treasurer**
  Orin F. Guidry, M.D.
- **Assistant Secretary**
  Peter L. Hendricks, M.D.
  Charles R. Schmitter, Jr., M.D.
- **Assistant Treasurer**
  Roger A. Moore, M.D.
- **Vice-Speaker of House of Delegates**
  Richard M. Flowerdew, M.D.
  Candace E. Keller, M.D.
  Rodney C. Osborn, M.D.
  Eugene P. Sinclair, M.D.

The ASA Board of Directors has approved the following regulations for the announcement of candidacies for elected office:

1. On or before August 1, any candidate for ASA office may send to the Executive Office, a notice of intent to run for a specific office;
2. The Executive Office shall prepare a list of candidates submitted to be published in the September issue of the *ASA NEWSLETTER* and the Handbook for Delegates.
3. The announcement for candidacy does not constitute a formal nomination to an office nor is it a prerequisite for being nominated; and
4. Nominations shall be made at the Annual Meeting of the House of Delegates for all candidates as prescribed by the ASA Bylaws.

Workshop on Office-Based Anesthesia

The Workshop on Office-Based Anesthesia will address key issues related to clinical and administrative practices for anesthesiologists. Topics range from "ABCs of Office-Based Anesthesia" to "The Business Side of OBA: Present and Future." The program will be held on November 13-14, 1999, at the Hotel Inter-Continental in New Orleans, Louisiana.

Program objectives are: to provide the anesthesiologist with an understanding of the differences and similarities in office-based anesthesia; to discuss monitoring, equipment and emergency care needed in offices; to discuss appropriate anesthesia techniques in general and specifically for cosmetic and plastic surgery and dental anesthesia; to explain the management of postoperative problems and recovery criteria; to provide an update of regulations, guidelines and accreditation initiatives currently under way in various states; and to discuss quality improvement processes in the office practice.

Rebecca S. Twersky, M.D., is the program chair. She will speak on "Update on Standards, Guidelines and Office Accreditation" and will moderate a panel discussion on "In the Real

Residents' Review

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will assume their duties at the conclusion of the 1999 ASA Annual Meeting and will continue their roles until the Annual Meeting at the end of their one-year (Delegate and Secretary) or two-year (Chair-Elect and Alternate Delegate) terms. Please feel free to contact any of the current Governing Council members to obtain additional information about their positions. Current officers and points of contact can be found on the Resident Section of the ASA Web site <www.ASAhq.org/asarc/>.

Candidates interested in running for office should submit a brief candidate statement and curriculum vitae by September 9, 1999, to Ronald A. Bruns, ASA Executive Office, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

World Cases." The other faculty and their topics are:

- Randall C. Cork, M.D., "Dial 911: Are You Prepared? Safety in the Office" and "Appropriate Pain Techniques";
- Richard Finder, D.M.D., "Taking Your Anesthesia Practice on the Road: A View From the Trenches" and "Anesthesia for the Dental Patient";
- Louis M. Guzzi, M.D., "Let's Get Started: ABCs of Office-Based Anesthesia (OBA)" and "Is This Really a MAC Case? Creative General Anesthesia Techniques";
- Walter G. Maurer, M.D., "Challenges in Patient and Procedure Selection" and "Recovering From Office Anesthesia";
- David B. Mayer, M.D., "The Business Side of OBA: Present and Future" and "How Can I Track CQI in the Office?"

Question-and-answer sessions are scheduled each day. On Sunday, the faculty will discuss real cases.

ASA is approved by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education programs for physicians.

ASA designates this continuing medical education program for 11 credit hours in category 1 of the Physician's Recognition Award of the American Medical Association.

Registration is suggested by October 4, 1999. Registration fees are $300 for ASA active members, $125 for resident members and $650 for nonmembers.

A block of rooms is being held at the Hotel Inter-Continental New Orleans until October 22, 1999. A room reservation form will be sent to registrants upon receipt of registration. The form should be returned to the hotel by the above date. The hotel is at 444 St. Charles Street and is close to the French Quarter.

Upcoming ASA Regional Meetings

1999

Workshop on Office-Based Anesthesia, November 13-14, Hotel Inter-Continental, New Orleans, Louisiana

2000

Refresher Course on Anesthetic Management of the Critically Ill Patient, January 29-30, Westin Horton Plaza, San Diego, California

Conference on Practice Management, February 11-13, Hyatt Regency Westshore, Tampa, Florida

Refresher Course on Pediatric and Ambulatory Anesthesia, March 18-19, Hyatt Regency Phoenix, Phoenix, Arizona

Workshop on Leadership and Wellness for Anesthesiologists, June 10-11, Radisson Eastland Hotel Portland, Portland, Maine

Workshop on Business Skills, November 11-12, Westin Francis Marion, Charleston, South Carolina

Contact the ASA Executive Office at (847) 825-5586 for further information about these programs, or check ASA's Web site <http://www.asahq.org> under Continuing Education.

In Memoriam

Notice has been received of the death of the following ASA members:

John E. Goddard, M.D.
Germantown, Tennessee
June 19, 1999

Clyde C. Gregory, M.D.
Arcadia, California
January 16, 1999

Woodrow E. Lomas, M.D.
Portola, California
May 14, 1999

Leo A. Parker, M.D.
Northridge, California
May 15, 1999

Mario J. Sanchez, M.D.
Houston, Texas
May 27, 1999

Thomas R. Shannon, M.D.
Poughkeepsie, New York
October 21, 1998

Ventilations: The CEO and the Virus

Continued from page 1

without a savings account. One unanticipated disaster will bring about collapse.

So, it may be my paranoia, but events are aligning in such a way that the concept of a "doomsday bug" may not be so fictitious. More than two million people died in 1966 from smallpox when humanity was largely immune to the disease. Today, it is not inconceivable that 1 billion people could contract this disease if used in a terrorist act. Meanwhile, the country is preoccupied with the business of medicine (invasion), controlled by the CEOs (Martians) believing that organized medicine can handle any disaster. Unfortunately, a smallpox outbreak, unlike H.G. Wells' human-saving bacteria, will eradicate both CEO and citizen alike.

— M.J.L.

Reference:

1. Preston R. A reporter at large: The demon in the freezer. *The New Yorker.* 1999; July 12:44-61.

Administrative Update

Continued from page 2

within ASA. The Assistant Secretary also chairs the Committee on Credentials, verifying the representatives of each delegation at the meetings of the Board of Directors and the HOD.

Many publications are available to the membership, which can be obtained either on the Web site <www.ASAhq.org> or by contacting the Publications Department at the ASA Executive Office. Thus, we rely heavily on the staff in the headquarters office in Park Ridge, Illinois. A more professional and competent staff would be hard to find. Year-round, they respond promptly to the needs and demands of the officers, directors, delegates and members.

Why have I spent considerable time explaining all of this when much of this information can be found in the ASA Directory of Members? Well, the directory is like an unabridged dictionary — we all have one and use it when necessary, but few of us read it electively and some of us do not use one. Our membership directory may be somewhat misnamed because it has a plethora of information — just check the table of contents. Many items, such as the standards, are already available on the Web site, and we hope to make the directory available in its entirety in electronic form within a year or two.

I began by saying how valuable and enjoyable being involved in ASA has been. I would like you to have a similar experience. You *are* ASA. Write to the committee chairs and your officers (state or ASA) with your opinions, suggestions and solutions. At the ASA Annual Meeting, come to Reference Committee hearings on Sunday afternoon. Listen and express your thoughts. Your opinions, your contributions and your actions make ASA effective. ASA wants and needs YOU!

Washington Report

Continued from page 4

ed 21 Republican co-sponsors — more than enough, when combined with the Democrats, to assure passage of the bill. At the same time, however, Congressmen Tom Coburn (R-OK) and John Shadegg (R-AZ) announced development of their own GOP "compromise" bill and sought endorsements from the medical community. No one is certain which bill, if any, will actually be brought to the House floor after the recess.

Is Perioperative Medicine Our Future? It Depends ...

I read the debate [about "Perioperative Medicine for Anesthesiologists"] between Donald S. Prough, M.D., and Jeffrey H. Silverstein, M.D., (*ASA NEWSLETTER*, May 1999) with great interest. I would like to share with you some thoughts concerning the essence of the controversy. Forces external to us — economic, political and social — are transforming the world of medicine, compelling us to be proactive. The future of our specialty is critically dependent upon our ability to grow and evolve, and perioperative medicine provides the ideal avenue for the advancement of anesthesiology. Because of what we already do, we are uniquely suited to excel in this field. As we mature as perioperative physicians, we will ensure the future of our specialty and afford ourselves greater roles as stewards of the resources needed to provide our patients with the highest quality of care throughout the perioperative period.

We should not miss this opportunity. Historically, we started cardiopulmonary resuscitation and critical care, and to a great extent, we lost these areas to other specialties. The reasons for these losses were multiple and included lack of financial incentives. At that time, some of us *sacrificed* the future for the well-being (as it was perceived) of the present. Many could not do it for local political reasons, but some leaders, however, understood the need for the specialty to develop an intellectual base and maintain our presence in those areas. In many institutions, critical care is provided by or with anesthesiologists. In many places however, this is not the case.

I'm afraid that similar things will occur with the concept of perioperative medicine. In some centers, perioperative medicine will develop, and the anesthesiologists will be responsible for and will effectively manage the preoperative, intraoperative and all aspects of postoperative period of our patients. On the other hand, many departments would not be willing or able to develop and provide the full spectrum of perioperative medicine in their institutions. I would argue that anesthesiologists would play a more important role and would be more respected in the institutions where perioperative medicine will be developed, compared to the institutions where it would not occur.

I believe that much of the concern about our endeavor into perioperative medicine stems from the notion that many will be required to work in areas that we do not enjoy. Dr. Silverstein emphasized this point. In my mind, this will not be the case. Due to the discoveries and innovations that will inevitably occur in anesthesiology, perioperative and pain medicine will increase the range of opportunities for us. Because our knowledge base will grow dramatically and become increasingly complex, it will be undesirable — even impossible — for perioperative physicians to work in all of the department's clinical arenas. Moreover, I envision departments of perioperative medicine successfully recruiting many highly-qualified physicians who, in the past, would not have considered our specialty appealing. Perioperative medicine will be recognized as a discipline that affords clinicians a spectrum of rewarding professional career choices, well-suited to a multitude of interests, abilities and natures.

It is my dream to be able to tell medical students contemplating their career options:

"Choose anesthesiology and perioperative medicine as your specialty. As you progress through your residency training, you will figure out who you are and what you really enjoy doing. You will see that our specialty offers an abundance of professional opportunities that are well-suited to a diverse range of clinical and academic interests and personality types. For example, if intense and complex operative cases interest you, consider specializing in cardiac or thoracic anesthesia. Alternatively, you might pursue ambulatory anesthesia if you enjoy high-volume, brief and rapid-paced clinical cases. Chronic pain management might be a good choice if you prefer to have ongoing relationships with patients. Critical care medicine offers other types of opportunities. If being a medical consultant and managing resources appeals to you, you might strive to become the director of a pre-admitting center, an intensive

The views and opinions expressed in the "Letters to the Editor" are those of the authors and do not necessarily reflect the views of ASA or the NEWSLETTER *Editorial Board. Letters submitted for consideration should not exceed 300 words in length. The Editor has the authority to accept or reject any letter submitted for publication. Personal correspondence to the Editor by letter or e-mail must be clearly indicated as "Not for Publication" by the sender. Letters must be signed (although name may be withheld on request) and are subject to editing and abridgment.*

care unit or a hospital's operating rooms. The possibilities are vast."

Dr. Silverstein says: "When we start calling ourselves perioperative physicians, we better be ready to meet that challenge." But we cannot be ready unless we start doing this. The complete transformation from a department of anesthesiologists to a department of perioperative physicians will take time, possibly even a generation of physicians; it will also take special efforts — the work of pioneers is never easy, is always frustrating and exciting. Our educational programs will have to be expanded in order to achieve this goal. Ultimately, the expansive and diverse knowledge base of a faculty of *perioperative physicians* will foster a deeper understanding of the clinical challenges that confront us.

The anesthesiologists of the future, whether choosing to work exclusively in operating rooms or in other settings, will think and perform as consummate medical practitioners caring for perioperative patients regardless of whether such perioperative physicians will work in an academic medical center or in a community hospital. The future depends on us.

Simon Gelman, M.D., Ph.D.
Boston, Massachusetts

Trauma Anesthesiologist as Perioperative Physician

I found your discussion of the perioperative physician in the May 1999 *ASA NEWSLETTER* most interesting and relevant. As a former trauma anesthesia fellow (1997-98) at the R. Adams Cowley Shock Trauma Center in Baltimore, Maryland, I have seen no better example of the anesthesiologist as the true "perioperative physician" than here. At the Shock Trauma Center, anesthesiologists are involved in the training of pre-hospital personnel in the management of airways in the field as well as providing anesthesia for situations such as difficult extrications or amputations in the field. Anesthesiologists also assist in helicopter transports of critically ill patients from outlying medical centers.

Upon arrival to the Shock Trauma Center, anesthesiologists are present for every admission and resuscitation, and they assume the care of the operative patient from the admitting area to the O.R., postoperative care unit and intensive care unit, and often to the ward with pain management services. Due to our unique skills and areas of expertise, I believe that trauma anesthesia is one subspecialty where anesthesiologists have much to offer the "perioperative patient."

Brent Lee, M.D.
Boston, Massachusetts

Make Your Voices Heard

It is time for the anesthesiologists in all medical facilities to make their voices heard against the traditional and ancient view of the department of anesthesiology as "an ancillary service." Times have changed and we must change with the times. We should all insist that the department of anesthesiology be recognized as a *clinical department,* just as surgery, ob-gyn, pediatrics and medicine are.

Years ago, the term "ancillary service" was changed in some hospitals to "associated service," but even this is not be acceptable at the present time when the anesthesiologist should be considered a perioperative physician.

I have no doubt that if we all insist and give the appropriate reasons and behave like all other physicians, anesthesiology will be, in the near future, considered a clinical department in every hospital in the United States.

Miguel Colón-Morales, M.D.
San Juan, Puerto Rico

Erratum: Montana Web Site

Nice article in the July 1999 *NEWSLETTER*, "Sausages, Golf and the Internet — What's the Link?" Unfortunately, the link for the Montana Society of Anesthesiologists was incorrect. It is <www.mcn.net/~nacohen>.

Norman A. Cohen, M.D.
Billings, Montana

FAER
FOUNDATION FOR ANESTHESIA
EDUCATION ■ RESEARCH

Meeting the Needs of the Practicing Anesthesiologist

This year's Foundation for Anesthesia Education and Research (FAER) Panel on "Meeting the Needs of the Practicing Anesthesiologist" at the ASA Annual Meeting will take a critical look at the current system of continuing medical education, stimulate discussion regarding how a practicing anesthesiologist can make the most of this system and speculate on how it might be improved in the future:

- Does the system make sense? Following four years of very structured medical school training, then at least four years of reasonably structured residency, practicing anesthesiologists are now "on their own" to maintain a knowledge base throughout a 30-plus-year career.
- What can modern technology add? Should residency programs take on continuing responsibility for education?
- Should there be any kind of structured organization to the whole "system" to ensure that people have the right resources to keep up? Should this have anything to do with recertification?

Moderated by Sean Kennedy, M.D., FAER Board member and faculty member in the University of Pennsylvania Department of Anesthesia, the panel will begin with brief, informal presentations, aimed at stimulating discussion among panelists and the audience.

- Myer Rosenthal, M.D., Professor of Anesthesia, Medicine and Surgery, and Program Director of Anesthesia and Critical Care Medicine at Stanford University Hospital, will discuss the role of residency programs.
- David Longnecker, M.D., Chair of Anesthesiology at the University of Pennsylvania, former Director of the ABA, former President of the NRMP and editor of several major anesthesia textbooks, will look at the role of textbooks, journals and other media.
- Alan Jay Schwartz, M.D., Director of Education at St. Luke's Roosevelt Hospital Center in New York, has a master's in education and a long interest in medical educational issues. He will examine the role of didactic sessions (meetings, refresher courses, etc.) in continuing education.
- Fred G. Davis, M.D., Chair of the Anesthesia Department at Lahey Clinic in Burlington, Massachusetts, will provide the practicing anesthesiologist's perspective.

The panel's goal is to stimulate discussion about this important topic. Audience participation is a vital part of the discussion, so bring your thoughts, opinions and questions on October 12 at the ASA Annual Meeting.

ASA, Abbott Laboratories and FAER Host Resident Scholar Program

FAER and ASA are pleased to announce that Abbott Laboratories has agreed to sponsor the 1999 Resident Scholar Program at the ASA Annual Meeting in Dallas. Shirley A. Graves, M.D., University of Florida, is coordinating the arrangements. The valuable program is an educational experience for residents from different anesthesiology programs across the United States. Residents gain knowledge of FAER and its missions and of ASA and its process of establishing standards of practice and professional behavior for the specialty. The activities of the program allow the residents to see the importance of the commitment ASA, FAER, individual anesthesiologists and corporations make to the long-term scientific development of anesthesiology. The program begins Saturday morning with a one-hour orientation. Speakers at this orientation session include:

- John B. Neeld, Jr., M.D., ASA President, "ASA, an Organization With Many Missions";
- Carl C. Hug, Jr., M.D., Ph.D., FAER President, "FAER, Our Mission";
- Michael F. Roizen, M.D., Chair, University of Chicago, "FAER Was and Is Important to Me";
- Joseph F. Antognini, M.D., University of California, Davis, "My FAER Grant";
- Stephen J. Kimatian, M.D., Chair, Resident Component Governing Council, "Resident Involvement in ASA."

The Resident Scholars attend the House of Delegates meeting on Sunday, the FAER panel on Tuesday and are encouraged to attend refresher courses, workshops, problem-based learning sessions and the scientific and industry exhibits. The program ends with a reception and dinner attended by ASA officers, FAER directors, Abbott representatives and the residents. The dinner provides an opportunity for informal conversations that often leave the residents better informed and more enthusiastic about their specialty. The importance of the Resident Scholar Program is that it enhances positive views of ASA among 35 residency programs that participate each year. It may be like a pebble thrown in a pond, with a large ripple effect in the future.

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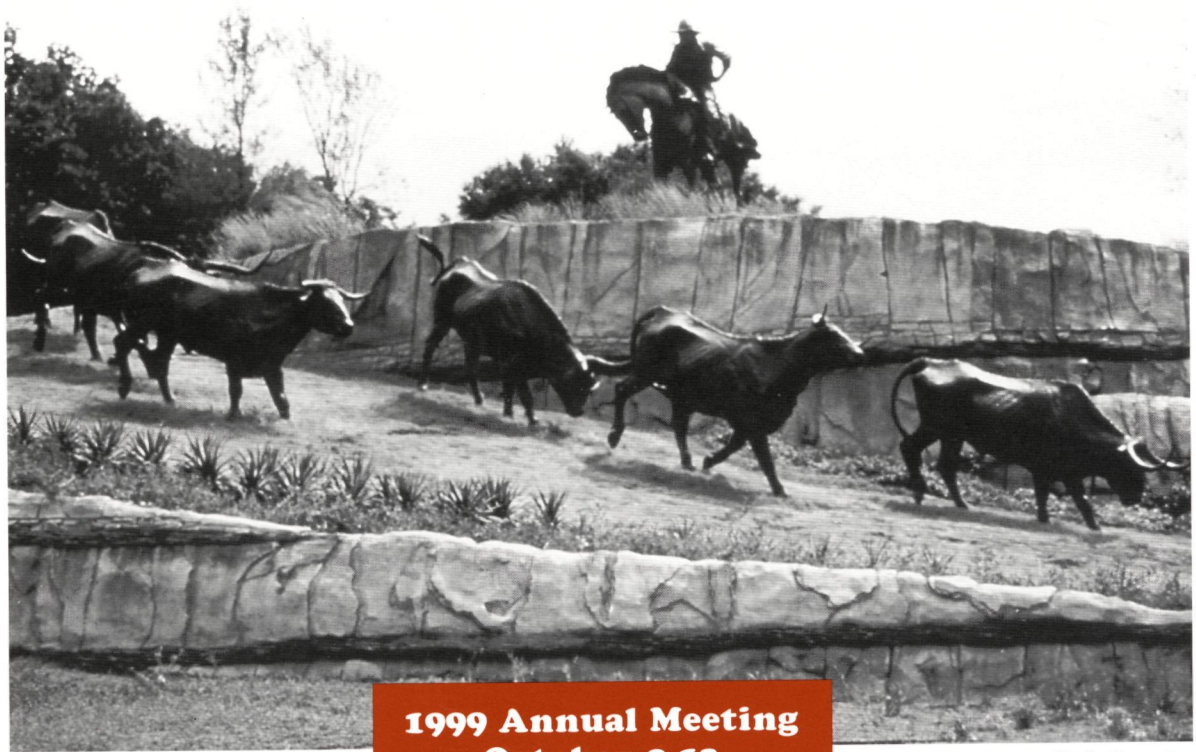

Pioneer Plaza

1999 Annual Meeting
October 9-13

Courtesy of Dallas Convention & Visitors Bureau

Registration opens at 3 p.m. on Friday, October 8, 1999, at the Dallas Convention Center.