

## Leading into the Future

### *The 50th Annual Rovenstine Lecture*

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**T**HIS lecture is in honor of Emery A. Rovenstine, M.D., who led the distinguished Department of Anesthesiology at Bellevue Hospital in New York, New York. Dr. Rovenstine was an early leader of the American Society of Anesthesiologists (ASA), and made a great impact in positioning the expanding specialty of anesthesiology for the challenges of the 20<sup>th</sup> century. As the heirs of Dr. Rovenstine, as the leaders of acute care medicine and perioperative health and safety, I have chosen to address an issue of leadership that affects all anesthesiologists: Where should we position ourselves as leaders in the healthcare delivery systems of the 21<sup>st</sup> century?

Changes in society, in resource availability, in technology, pharmacology, genomics, and molecular biology, are converging upon healthcare systems worldwide. We must maintain excellence in clinical care, in education and research in the current care-delivery model, while accelerating our transformation to new forms of care delivery, new reimbursement models, and new configurations of skill sets. This will require leadership of the most broad and comprehensive stature, reaching deep into who we think we are and what we are capable of becoming. We need to drive change and take action across the broad scope of institutional and regulatory infrastructure, and do it ourselves, before changes impact us in a blindsided manner. We need to adapt to new healthcare delivery paradigms proactively to secure the profession for the future.

One of the themes of the ensuing discussion is that these concepts are, in fact, not new; however, the urgency to ad-

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dress them now is high. Prior Rovenstine Lectures called these imperatives to our attention as early as 1996, to proactively deal with impending changes in health care, when David Longnecker, M.D., asked whether anesthesiology “is ready for the 21<sup>st</sup> century.”<sup>1</sup> Mark Warner, M.D., addressed similar themes in his 2005 Rovenstine Lecture,<sup>2</sup> for us to change anesthesia care delivery patterns ourselves, while the determinants are still open to our input. Ronald Miller, M.D., has written in ASA publications for a decade on these matters, challenging us to rethink the status quo.<sup>3–5</sup>

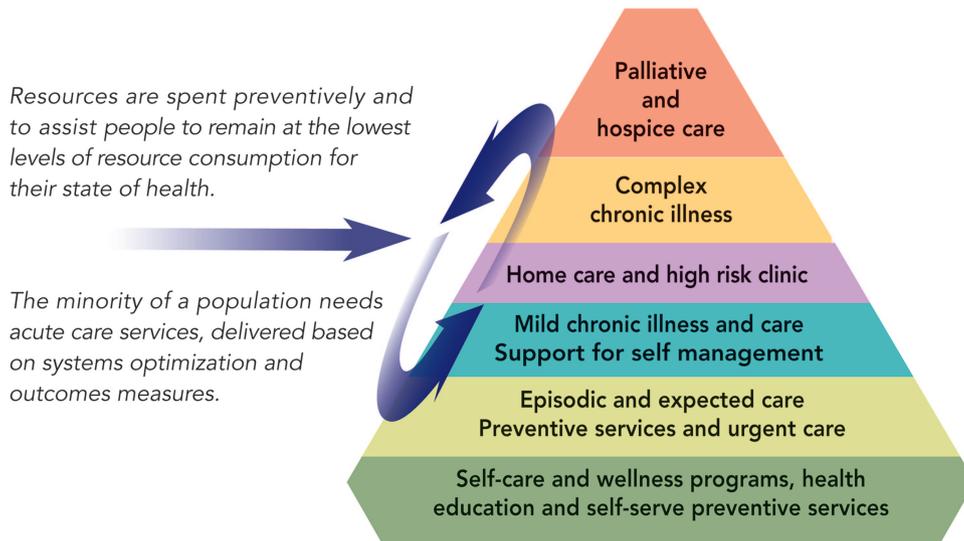
#### Changing Roles for Anesthesiologists in 21st-century Healthcare Delivery Systems: What Can We Learn from Others?

At the University of California, Los Angeles (UCLA), we are currently taking stock of how to position a great medical school and a great health system to respond in innovative ways to the oncoming “disruptive” or “discontinuous” changes in health care, the type of change that occurs when long-held conceptual models are abruptly passed over for a new framework. Because discontinuous change is coming, including concepts such as population-based care, “full-risk” care, bundled payments, accountable care organizations, outcomes-based reimbursement, and so on, we all need to courageously lead into the future to prepare our practices and our institutions for change. The ideas that we are reexamining in this lecture have been available to us for some time.<sup>1–5</sup> Have we heard the messages? Are we prepared to change?

***“[How do we] respond in innovative ways to the oncoming ‘disruptive’ or ‘discontinuous’ changes in health care, the type of change that occurs when long-held conceptual models are abruptly passed over for a new framework?”***

In 2005, Dr. Warner urged us to be ready to change everything other than: 1) our commitment to patients

## Active Patient Population Management



**Fig. 1.** Conceptualization of resource allocation for modern management of a population of citizens. The majority of individuals will manage their own health with preventive care, episodic urgent care, and/or supportive care for mild chronic disease. Only a minority of people will need more complex care on an inpatient basis. The majority of those patients will satisfactorily move back to ambulatory care status, and only at the end of life have any continuous ongoing care needs. Adapted from Samuel A. Skootsky, M.D. Used with permission.

who are critically ill or facing acute or chronic pain, including pain from procedures, or 2) our commitment to improve the care and safety of our patients. He commented: “Everything else – how we provide care, where we provide care, and how we are recognized for our care – financially, politically, or otherwise – is likely to change.”<sup>2</sup> Categorically speaking, whenever and wherever those changes come, we should not wait for others to determine our future, but rather step up to be the leaders of the transformation of the portion of healthcare delivery that is in our hands.

The current imperative to be flexible and change is not limited to anesthesiology, and not even limited to medicine. The extent of new economic realities has meant that even Argentine cattle barons have had to face monumental change. As reported by the Los Angeles Times, with a headline, “Soy Sends Gauchos Into Sunset,” Argentine ranchers are rapidly adapting to economic reality and trading their long-traditional cattle herds for a new model of more profitable soybean crops. The Times wrote presciently for all professionals facing change, “economic reality ... has trumped starry-eyed dreams of a storied past,” and quoted an agronomist advising former ranchers, “The world changes and your mind has to be open to it.”<sup>6</sup> As a profession, anesthesiology needs to be open-minded to clearly see the changes on the horizon, changes that require flexibility on former positions in order to be able to exercise leadership when new health system models come into being and/or step up to lead the redesign of those healthcare delivery models.

### Healthcare Delivery Redesign Is Coming

My health system leadership work has reinforced for me that broad change is now the reality facing all physicians. An internist colleague told me, “It’s not just you, it is all of us. At our internal medicine meetings, that’s all we talk about.” Internists indeed are faced with medical homes, with patient empowerment and self-management, with more pressure to reduce office visits and keep patients out of hospitals. Many internists are moving from their traditional solo or small group practices to join consolidated health systems that can take the financial risk to manage large populations on fixed fees.

Figure 1 illustrates how such large groups now see healthcare delivery. Resources are spent preventively to assist people to remain at the lowest levels of resource consumption for their state of health. The minority of a population needs acute care services, to be delivered based on systems optimization and outcomes measures. Much of the health-promoting activity of the future will happen outside of a formal healthcare site. Patients will measure their health parameters at home with direct wireless reporting. They will receive lab results online, adjust their own medications based on algorithms, utilize telephone or online consultations, and only rarely come to an office in person. The intermediate level of care will be provided by nonphysicians. Physicians will provide top-level, complex care, where their training and education is justified.

Surgeons, too, are facing large changes to their roles and self-images, as their patient base is merging with patients seeking treatment from nonsurgeon interventionalists. Image-based surgery and treatment-based imaging are converging the domains of surgery and interventional radiology, surgery and the cardiac cath lab, surgery and the gastrointestinal

procedure suite, and so on. Because radiology images can be read from any location, diagnostic radiologists are also being affected by technological healthcare delivery changes. Diagnostic radiologists at UCLA are now transforming themselves by partnering with our pathologists to establish combined diagnostic imaging and tissue sampling centers. Such centers will combine image interpretation, genomic biopsy reports, and advanced laboratory findings in one report.

Pediatricians, too, face similar challenges to internists, and must utilize care delivery models that allow them to practice “at the top of their license” for the oversight, supervisory, and challenging aspects of pediatric care, while utilizing technology and ancillary providers for the straightforward elements of care. We too, need to ask: As anesthesiologists, are we leveraging our costly knowledge and skills to the greatest extent, to provide the components of the patient care process for which our education and training are necessary? How can we leverage our skills further to contribute more value, in addition to our acknowledged quality and safety, not only in the operating and interventional suites, but throughout the healthcare system?

***“We . . . need to ask: As anesthesiologists, are we leveraging our costly knowledge and skills to the greatest extent, to provide the components of the patient care process for which our education and training are necessary?”***

An example of upgrading of ancillary personnel to a higher level of their capabilities to support primary care is going on now in the UCLA Health System in response to external mandates for more care. The Center for Medicare and Medicaid Services now covers a comprehensive annual medical examination and preventive health counseling visit for every Medicare beneficiary, the so-called annual “Wellness Examination.” These extensive annual visits would not be sustainable if all elements were provided by a physician. In the UCLA primary care offices, already there are no costly nurses, only medical assistants, the “MAs,” who do the routine patient ancillary work of an office visit. Thus, a pilot program has been started by UCLA physicians to upgrade the capability of their MAs, through extensive training with a specified curriculum of lectures and hands-on experience. The goal of the training is for the MAs to achieve competence to do the preventive health interviews and basic preventive health counseling under the direction of the physicians, as well as be certified in basic blood drawing and other tasks. The offices will then be able to meet the need for the extensive annual Wellness Examinations for all seniors, by concen-

trating expensive physician time and effort on the medical portions of the visit. The overall expected outcome of the project is no less than “primary care redesign” and it has been formally designated as such, to have the same number of primary care physicians deliver quality care to the expected larger numbers of patients coming into the healthcare system, aided by trained layers of nonphysician team members.

### **The Imperative for Everyone in Health Care to Rethink “What We’ve Always Done”**

If change is inevitable, how do we: 1) manage the change, and 2) proactively deal with a transition period? We must lead beyond any “starry-eyed dreams” of past care models. We must innovate into the future with new care models, similar to e-booksellers replacing hardcopy retail outlets, digital imaging replacing the entire print photo industry, or multi-tasking phone platforms edging out less creative models. In our case, we must proactively plan to move our profession forward to lead patient-centered, cost-effective, and safe acute care and management of painful conditions, from start to finish of entire disease or interventional episodes, not simply concentrating all of our talent and effort on the intraoperative portion of patient care.

To do this means first getting our minds around the issue of change, and then taking bold steps. We can take a leadership position by nimbly recognizing that an inevitable tectonic change has started, by being flexible enough to avoid a “We’re in a good position now, why change?” philosophy, and make timely, bold changes in professional direction. As former Argentine cattle rancher Mario Caceres said, “You can stick to the gaucho philosophy, or you can [change and] . . . afford [a better life]”.<sup>6</sup> Adopting a similar perspective, we must take the lead along with those physician peers who are seeing clearly, and who are adapting rapidly and adroitly to the changing healthcare environment.

We anesthesiologists should surely move now without further delay to demonstrate leadership of the new approaches to healthcare. The need for expanded healthcare delivery is going to escalate, and the opportunity to take charge of the extensive and critical portions of care outside of the operating suite that are suitable for anesthesiology physicians is going to be staked out soon, *vis-a-vis* other specialists who share portions of our skill sets, such as hospitalists, intensivists, emergency physicians, pulmonologists, cardiologists, and so on. It behooves us to change our approach now and seize the other medical care opportunities that we could easily add to our portfolio, similar to what other physicians have already done.

In leading and adapting to new care models, we also must take into consideration the cost implications of any new care delivery paradigms we might propose. Large numbers of baby boomers becoming seniors and a potentially large population of newly insured will create not only an increased demand for healthcare services, but also increased demands upon public healthcare financing that is already at risk.<sup>7</sup> Whether healthcare reform occurs in 2014 or later, all markers indicate that the current trend of escalating healthcare costs is out of scope with other

first-world countries and a burden upon our business sector and our economy.<sup>8</sup> We need to address the expanded acute care opportunities that will be available to anesthesiologists at the earliest, and prepare at least a subset of our current practitioners, as well as our current and future trainees, to move into those new healthcare areas in a cost-effective and outcomes-measures-driven manner.

Like Yogi Berra's view of baseball, the barriers to change are "90% mental." We need to conceive of change, in order to take the first steps to plan for change. In his 2010 First Vice President's address, John Zerwas, M.D., commented to the ASA House of Delegates that "we need to be ready to change on a moment's notice." We have the talent and the ability to lead the inevitable change, and I am proposing that we not only lead, but create that positive change in professional direction.

### How Can We Adopt an Accurate "Mental Map" of the Healthcare Environment to Lead Forward with Clarity?

An unusual book provides insights to see leadership issues more clearly in situations such as the current times, when the healthcare environment is changing in response to many outside forces. Laurence Gonzales, a push-to-the-extreme adventurer, authored an analytical book entitled, "Deep Survival: Who Lives, Who Dies, and Why."<sup>9</sup> Gonzales stressed the importance of having a "correct mental map" of one's exact, not imagined, circumstances in relation to the immediate environment and to forces at work beyond one's control. To make appropriately informed decisions when environmental conditions change, one must very dispassionately evaluate one's situation, and equally dispassionately plan appropriately to deal with the true, not the hoped for, state of affairs.

Gonzales analyzes examples of true-event circumstances when adventurers or front-line personnel have confronted potentially treacherous situations: in climbing, hiking, long-distance sailing, military situations, firefighting, and so on. In the "what not to do" situations, highly qualified personnel failed to clearly assess and appropriately deal with their situation when there was yet still time to change course. The unfortunate outcomes were invariably associated with mental under-appreciation of the reality of the true state of affairs in which they found themselves. In Gonzales' analyses, the individuals did not have a "correct mental map" of where they really were in relation to their circumstances.<sup>9</sup>

***"In the 'what not to do' situations, highly qualified personnel failed to clearly assess and appropriately deal with their situation when there was yet still time to change course."***

Examples of an inaccurate mental map for a hiker are: trying to push to a mountain summit without acknowledg-

ing the reality that it is too late in the day or that a storm is clearly coming, or alternatively, pushing ahead to get inexorably lost on a trail that "must be the right one," but indeed does not match the expected compass directions. As Gonzales puts it, the person was "trying to make reality conform to [his] expectations rather than seeing what is [actually] there."<sup>9</sup>

In general, Gonzales' observations are very compelling to the perioperative environment, because anesthesiologists are hardwired to assess patient-care risks, to take reasonable steps to mitigate those risks in so far as possible, then ultimately to face and deal with risks and unknowns when patient care action is imperative. For physicians in the current economic environment, we must update our mental map to accurately assess the broad extent of healthcare delivery system changes, in order to respond appropriately while there is still time to chart our new course and proactively develop an expanded role in health care beyond just the operating or interventional suites. As Gonzales states in "Deep Survival," "when the environment changes, you have to be aware that your own past experience might be inappropriate," and furthermore, "a closed mind may cause you to miss something important."<sup>9</sup>

### What Have Our Thoughtful Leaders Been Telling Us for 15 Years, to Help Open Our Minds to Impending Changes?

In 1996, it was pointed out that already: 1) cost containment was a priority, 2) population-based care was replacing individual care, 3) inpatient hospital care was being replaced by ambulatory and home care, 4) self-employed physicians were seeking stable employment situations, and 5) nonphysician providers were being assigned more duties wherever possible.<sup>1</sup> We were warned that, "Far too often, we have limited our activities to intraoperative care only." It had become apparent that more anesthesiologists should engage in a broader role in their health systems, including more extensive participation in the perioperative preparation of surgical patients, participation as integral members of the critical care team, as well as diversifying into chronic pain, cancer pain, and hospice or home care of patients with terminal illnesses. Dr. Longnecker knew that the current good working conditions in the operating room are comfortable, but understood that we need to update our mental map to prepare for change.<sup>1</sup>

Longnecker told us, "We can go in either of two directions without immediate harm, but the long-term destination will be different, depending upon our choice."<sup>1</sup> In the metaphor, we can stay in the operating rooms and lose new opportunities, or alternatively we can embrace a greater commitment to new forms of practice, education, and research. The long-term destination that is worth the "short-term discomforts" is a vision very much like the surgical home that is being expounded by our current ASA leaders, where anesthesiology will step up, become involved, and manage the entire

continuum of preoperative, intraoperative, and postoperative care of surgical patients: from the decision to provide a procedure until the return of the patients to their longitudinal providers.

In 1996, we were urged to “form alliances with surgeons and surgical organizations,” and to design the CA-3 yr to “emphasize perioperative medicine skills ... on rotations where partnerships have been formed with surgical colleagues for the overall care of surgical patients,” where the CA-3 resident would be “involved in the [entire] continuum of preoperative, intraoperative, and postoperative care of surgical patients.”<sup>1</sup> In fact for this vision to succeed, anesthesiologists everywhere need to embrace the facilitative role of the surgical home, stepping up to take responsibility for comprehensive perioperative activities in institutions large and small.

In 2002, Ronald Miller pursued the same theme, urging us to not only “focus on operating room supervisory and reimbursement issues,” but to widen our focus and our scope to include perioperative medicine in all of its forms. We heard the case for continued intellectual growth and vision, and were strongly urged to comprehensively plan at the specialty level for the changes inevitably coming.<sup>3</sup> In 2004, we had the opportunity to set the parameters for such planning, with the ASA Task Force on Future Paradigms of Anesthesia Practice. I was a member of the task force. The group received considerable input from both within and outside of the profession of anesthesiology. The task force’s report to the ASA Board of Directors raised important questions that are no less urgent today.<sup>4</sup>

***“... we can stay in the operating rooms and lose new opportunities, or alternatively we can embrace a greater commitment to new forms of practice, education, and research.”***

The consultants and task force<sup>4</sup> felt that the opportunities for anesthesiologists in the future relate to hospitals being increasingly dominated by monitored and critical care beds, with patients of higher acuity than currently exists. Care will be based on systems optimization and measurements of outcomes. Opportunities will include management of preoperative medical optimization, management of the intraoperative course logistically and medically, management of postanesthesia care including postanesthesia care units, intensive care units (ICU), and further postprocedure care including pain. The task force’s report questioned “what type of physician should lead all of these areas of inpatient care in an organized and medically sound, coordinated basis?”<sup>4</sup> We have heard the answer, “Who better than anesthesiologists?”<sup>2</sup>

## **Leadership to Expand the Role of Pain Management for Public Health**

The ASA Task Force addressed pain practice as well, and asserted that our specialty has the “opportunity to be more involved with interventional pain management, including acute and chronic pain care and palliative care on an outpatient basis.”<sup>4</sup> In response to the 2010 Patient Protection and Affordable Care Act requiring that pain be addressed as a public health problem, the Institute of Medicine recently issued a report entitled, “Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research.”<sup>10</sup> This Institute of Medicine report advocates that training in evaluation and treatment of painful conditions be more widespread than currently and that pain diagnosis and treatment not be constrained to specialists who are in limited supply, but be extended to: 1) primary care providers, who see the bulk of the initial presentations of painful conditions, 2) to other specialties who see patients with pain as a component of disease, and 3) to those nonphysician providers who provide significant amounts of primary care, so patients can get prompt diagnoses and prompt first tier pain management. Similar to the expansion of our scope beyond the operating room, our pain specialists can and must take a broader leadership view of their role in the treatment of the pain experience, collaborating with a wide range of providers. In keeping with the aspirations of the Institute of Medicine report, anesthesiology pain specialists can take leadership roles in the public health arena to help address the “regulatory, legal, ... financial and [other] barriers that limit the availability of pain care and contribute to the disparities ... among ... population groups.”<sup>10</sup>

## **Leading the Future of Safety, Quality, and Cost-effective Care**

From another perspective, to achieve clear-headed thinking, to achieve a “correct mental map” about what leadership potential we have as yet to achieve, we must acknowledge that nonphysician providers, such as nurse anesthetists or anesthesiology assistants, are part of the solution for us to meet the nation’s anesthesiology manpower needs. A correct mental map would indicate that in the current economic situation, to truly “bend the cost curve” to cover millions of more patients while preserving quality and safety for the same expenditure of societal resources, we will need to ask each provider to step up to best of their abilities. As Kocher and Sahni have pointed out, “any effort to slow the rate of growth of health care spending will require a change to the labor structure,” as “health care labor is becoming more expensive than any other types of labor.”<sup>11</sup> The three options of either reducing the number of workers, lowering wages, or increasing productivity leave us preferably with the third option to increase the productivity of anesthesiologists by leveraging their expertise and skills with ancillary providers, to care for the swelling rolls of patients in settings with quality and safety.

Thus, we too, must deal with the real, not the “hoped for” situation; must utilize all individuals at the optimal level of activity for which their training, experience, and abilities are appropriate; and must leverage physicians for supervision, oversight, and management, with personal physician care reserved for higher acuity patients. This concept is one of the significant points of an article in the September 2011 issue of Harvard Business Review, by Robert Kaplan and Michael Porter of the Harvard Business School, entitled “How to Solve the Cost Crisis in Health Care.”<sup>12</sup> Their major premise is to use cost measurement based on actual provider, supply and equipment costs, coupled with systematic measurements of outcomes. With accurate cost and outcome measurements, the authors argue that “health care providers can . . . select treatment approaches that improve outcomes while eliminating services that do not [add further value].” This analysis in fact mirrors that of the 2005 ASA Task Force on Future Paradigms of Anesthesia Practice. When the ASA Task Force asked: “What type of physician should lead all of these areas of inpatient care in an organized and medically sound coordinated basis?” it simultaneously asserted that “this type of medical care must be based on systems analysis and measures of outcome.”<sup>4</sup>

***“Thus, we too, must deal with the real, not the ‘hoped for’ situation; must utilize all individuals at the optimal level of activity for which their training, experience, and abilities are appropriate; and must leverage physicians for supervision, oversight, and management, with personal physician care reserved for higher acuity patients.”***

The potential of anesthesiology to lead in cost-effective care by assigning individuals to tasks at the highest levels of their scope is actually highlighted in a sidebar to the Kaplan and Porter article.<sup>12</sup> Heidi W. Albright, M.H.A., and Houston, Texas, anesthesiologist Thomas W. Feeley, M.D., described how the MD Anderson Cancer Center’s Anesthesia Assessment Center, or AAC, implemented new clinical guidelines for preoperative diagnostic testing, as well as reorganized personnel tasks in the AAC. Their MAs were asked to take on some tasks that had previously been done by the nurses, and the nurses were asked to take on some tasks that had previously been done by the physicians. Activity-based cost accounting was used and outcomes were measured. The

AAC process change resulted in a 16% reduction in process time, a 12% reduction in costs for technical staff, and a 67% reduction in costs for professional staff. The successful example in the AAC was used to substantiate extending the methodology to other integrated care units at MD Anderson.<sup>12</sup>

Anesthesiology has vast opportunities to lead wise and sustainable continuous institutional process reassessment and change. It is imperative that we examine, in the words of the Harvard Business Review article, “whether all of the processes currently performed by physicians and other skilled staff members require their level of expertise and training . . . [in order] to free up physicians and nurses to focus on their highest value-added roles.”<sup>12</sup> In 2005, Dr. Warner had already similarly cited overstaffing by “extraordinarily well-trained and excellent anesthesiologists who markedly restrict their full potential to provide a positive impact on public health and safety by delivering one-on-one care to patients who do not warrant such physician-intensive, inefficient, and cost-ineffective care.”<sup>2</sup>

In their 2005 ASA Newsletter article, “Anesthesiology’s Choices for the Next Century,” Drs. Miller and Hannenberg urged us, in effect, to get a “correct mental map” to create a continuum of risk-stratified case assignments.<sup>5</sup> They asserted that “recent major changes . . . in health care have produced a compelling need to look toward the future of the specialty.” In other words, the environment has changed and we need to be sure that we can dispassionately assess our position, not limit our vision by our past experience, and see clearly where we are positioned. Drs. Miller and Hannenberg pointed out that “the prevalence of physician extenders and the breadth of their practice in numerous specialties had grown dramatically.” Then they challenged us to stratify anesthetic assignments to appropriate providers by patient and procedural complexity, as other specialties have done.<sup>5</sup>

Already successful anesthesiology practices of all types regularly stratify complexity of cases for provider assignments. Academic practices stratify cases for the level of training of the housestaff, care-team practices stratify which cases go to what level of experience of nurse anesthetists or anesthesia assistants, and physician practices stratify based on experience and life cycle, with senior-most partners cutting back on some types of cases. However, in recent years because of obstacles created by regulatory, billing, and reimbursement concerns,<sup>11</sup> there has often not been the opportunity to wisely stratify our level of supervision based on provider experience and training and/or complexity of the case, leaving us with an “all or none” proposition for supervision. Reimbursement rules, such as the Center for Medicare and Medicaid Services medical direction rules, have required seven-step oversight for every case under that mode, without any variability permitted to flex for the complexity of the procedure or the severity of the patient’s comorbidities. This imperative for logical, safety-, and quality-based supervision ratios extends to education as well. We can reexamine the concept of 1:2 supervision for all of our trainees, which has

been applied regardless of their experience or the simplicity of the case.

***“Already successful anesthesiology practices of all types regularly stratify complexity of cases for provider assignments.”***

Some years back, a large Midwestern center participated in a Center for Medicare and Medicaid Services demonstration project in which the institution was paid globally for anesthetics and sedations in a low-risk procedural and day surgery suite, with the department able to determine personnel types and supervision ratios for safe and effective anesthesia care. A physician evaluated the preoperative suitability of patients for the unit, was on-site and available for immediate consultation and medical rescue issues, for postprocedure care, and to determine when the patients were medically stable for discharge. Because of careful patient screening and risk stratification, outcomes were excellent and excessive costly supervisory ratios were not required in that particular setting. This spared several of the department’s physicians to be assigned to more complex surgeries in other operating rooms (OR).

**Leading When New Technology Comes Online: Tele-ICU and Tele-OR**

To exercise leadership, we must even have the correct mental map that tele-ORs may be the logical extension of the oncoming tele-ICU implementations.<sup>13</sup> Tele-ICU management, with continuous remote monitoring of patients’ hemodynamic and respiratory variables, lab values, as well as video and audio connection to each patient and their caregivers, has had remarkable benefits in some locations. Tele-intensivists often also rotate as bedside intensivists, but when on-duty in the tele-ICU control center, serve as a back-up for the bedside intensivist to assure online monitoring of all parameters, as well as real-time oversight of care on off-hours, evenings, nights, and weekends. Benefits have included reductions in ICU and in-hospital mortality, shortened ICU and hospital stays, and marked improvement in clinical practice guideline adherence: for cardiovascular protection, prevention of stress ulcers and deep vein thrombosis, and for reduction of ventilator-associated pneumonia and catheter-related blood-stream infections.<sup>13</sup> In satellite hospitals with tele-ICU connections, fewer transfers to higher-level hospitals have occurred in some circumstances, as nurses have been more comfortable managing ill patients in community settings because of the easy availability of their tele-ICU physicians at all hours. Our anesthesiologist-intensivists can lead in the adoption of this new technology and pave the way for such improved care across larger numbers of institutions.

Like the tele-ICUs, someday tele-ORs may have anesthesiologists rotating through tele-control room assignments, with

two-way video and audio connectivity to each OR or procedure suite, and access to physiologic monitor output and the electronic anesthesia record. In addition, the tele-anesthesiologist could see images from fiberoptic laryngoscopes and bronchoscopes, regional block ultrasound units, and transesophageal echocardiography and transthoracic echocardiography units. The tele-anesthesiologist could oversee and advise in the care of multiple rooms in a cost-effective manner. He or she could instantaneously respond to a query, even switch attention from room to room on a minute-by-minute basis. Tele-OR capability would also allow our rural and underserved hospitals, as well as battlefield hospitals, to have high-quality tele-consultation and tele-supervision.

**Leading to Match Professional Resource Expenditure to Patient Comorbidities, Surgical Complexity, and Staff Training and Experience**

Another Midwestern institution is experimenting with developing a classification scheme for “green,” “yellow,” or “red” assignments for surgical/procedural patients based upon an algorithm combining patient comorbidity status with the potential for physiologic disruption by the intended surgery or procedure. Such assessment categories could serve to assist manpower planning by anticipating the potential intensity of physician involvement in the management of individual cases in a care-team model. These types of systems-based practice questions lend themselves to hypothesis-based testing in protocol-driven studies. The findings of such studies may serve to guide resource allocation through evidence-based supervision models.

***“Like the tele-ICUs, someday tele-ORs may have anesthesiologists rotating through tele-control room assignments, with two-way video and audio connectivity to each OR or procedure suite . . .”***

Exactly to this point, of appropriate personnel allocation as a component of adding value *versus* merely adding cost, Kaplan and Porter opined that “some facilities that serve patients with unpredictable and rare medical needs . . . carry extra [personnel] capacity. . . . Much excess resource capacity . . . is due not to [a uniformly high prevalence of] rare conditions . . . but to the tendency to provide [that level of] care for . . . every type of medical problem.”<sup>12</sup> We do that in current anesthesiology care models, when we inflexibly assign fixed low supervision ratios without regard to patient acuity or surgical complexity. However, we had already been challenged in 2005, “Are there better anesthesia care models that will allow us to free our physicians to extend their skills to new areas and to expand the influence and scope of our specialty?”<sup>2</sup> To set our own course for the future, we should lead the development of those new models of

anesthesia care with evidence-based supervision paradigms. Similarly, when the time comes, we should embrace tele-ICU and tele-OR, and determine how to make those models work most effectively, and assure quality as those system changes are adopted.

### Leadership with Global/Bundled Payments

Kaplan and Porter also point out what is now widely recognized: “Any true health care reform will require abandoning the current complex fee-for-service payment schedule altogether ... that payors should introduce value-based reimbursement, such as bundled payments, that covers the full care cycle and ... rewards providers who deliver the best overall care at the lowest cost and who minimize complications rather than create them.”<sup>12</sup> The Center for Medicare and Medicaid Services has recently introduced a pilot application process for any one of four approaches for health systems to explore the efficacy and applicability of bundled payments, and to obtain “real-world” experience with the pluses and minuses of four different approaches. Kaplan and Porter said the adoption of cost-based measures coupled with better outcome measurements will lead to “reimbursement methods that better reward value ... and encourage provider[s] ... to contemplate innovative reimbursement approaches.”<sup>12</sup> Kocher and Sahni have similarly recommended that the combination of a risk-based payment model tied to outcome goals, along with reimbursement coding rules that are applicable to a variety of systems approaches to achieve agreed-upon quality goals, “could inspire the implementation of innovative, technology-based, analytically informed approaches that increase productivity.”<sup>11</sup> ASA is already leading the way to determine benchmark measurements for quality outcomes in anesthesiology through the Anesthesia Quality Institute. We will soon have information to be able to demonstrate comparable with benchmark, or even better, performance in each of our institutions.

How will we demonstrate value to receive a portion of an institutional bundled payment? The answer again is to step up to leadership:

1. We must determine quality benchmarks and equal or exceed them.
2. We must oversee and solve perioperative, periprocedural, intensive care, and pain issues throughout the health system, utilizing a cost-effective mix of providers appropriate for the severity of the cases.
3. We must facilitate procedural through-put at all levels, including critical care.
4. Organizationally we must become integral to the management of all areas where acute care and pain services are being delivered.
5. We need to become the acute care go-to people, the acute care solution, for each of our clinical sites.

As Miller and Hannenberg stated in 2005, “None of the existing medical specialties is fully equipped to provide com-

prehensive care in all of these areas, but anesthesiology is a strong contender for the best qualified. We will not [have] this role, however, without a major commitment ... [as] others, such as internal medicine hospitalists, are ... laying claim to the role of the perioperative physician.” To lead in this regard, we need to assess “our strengths, opportunities and potential contributions to medicine without regard for present-day payment implications. ... Fear of the monetary impact [now] of the choices available to the specialty [for the future], can easily blind us to options offering long-term growth and stability.”<sup>5</sup> A closed mind, as Gonzales says, may cause us to miss something important.<sup>9</sup>

### *“We need to become the acute care go-to people, the acute care solution, for each of our clinical sites.”*

If we accept as the correct mental map that the healthcare system is changing, a subset of every practice group needs to address how to become of maximum value to our institutions or practice settings, by considering the following leadership questions:

1. What acute care needs of patients in the healthcare system are not being adequately met? How can anesthesiologists take the lead to do so?
2. Do members of the anesthesiology group have leadership experience or training? Can someone be sent for business or health administration education?
3. How can the anesthesiology group free up a member to attend every important committee meeting of the medical staff or medical center? Who is getting in line to be chief of the medical staff or to be president of the multispecialty group?
4. Who in the anesthesiology group can step up to lead institution-wide quality and safety initiatives?
5. Who in the anesthesiology group is interested to take on leadership in the OR, the PACU, the preoperative screening clinic, or other directorship duties?
6. Who is interested in leading critical care or in establishing or directing rapid response teams?
7. Can anesthesiology leadership expertise help non-OR procedural suites work more smoothly and be more productive? Who in the anesthesiology group could offer to do that?
8. Are some of the anesthesiology group members maintaining general medical skills to manage the pre- and postprocedure components of the patient’s entire hospital stay, *i.e.*, able to manage the entire surgical home experience?

### Leading Beyond the OR Suite: Maintain General Medical Skills

Leading beyond the OR suite brings an additional very important issue for recent graduates and current and incoming

trainees, which is to maintain their general medical skills. Crucial to the opportunities opening for anesthesiologists to lead and manage the surgical home continuum is the role of the physician to diagnose and manage acute and complex diseases in surgical patients outside the operating room, as well as within the operating room. It is one of the important distinctions that will separate those who remain tied to the procedure-based role that anesthesiologists fill today, and those who can adapt to the positions that will be available in the future, including: 1) providing the whole scope of perisurgical medical care (surgical home); 2) critical care, step-down and other acute care across the institution; 3) acute and chronic pain management; 4) palliative and hospice care; 5) OR and procedural suite leadership; 6) ultrasound diagnostic expertise; 7) overseeing respiratory therapy and other ventilator care; and so on.

We must also have an accurate mental map that the future physician role for operating room and procedural areas will likely be similar to an intensivist role, *i.e.*, that of medical decision-making and provision of pre- and postcare and supervision of other providers for front-line intraoperative tasks, while reserving personal provision of intraoperative care for situations when acuity and complexity is unusually high.

### Leadership to See and Create Opportunities for the Future

Our specialty has been thinking about our future for some time, pushing the boundaries beyond OR anesthesia to take on an expanded scope of practice within the healthcare system:

1. We should think broadly of how we can address our society's healthcare needs. As the leaders and the practitioners of the future, we must free our thinking from the status quo care delivery model, even while we maintain that model until new care delivery and reimbursement paradigms are rolled out.
2. We need to identify best-practices in acuity-based, stratified anesthesia care delivery. We must do this to optimize excellent outcomes in a cost-effective manner, utilizing physicians for leadership and management, medical decisions, oversight and rescue, and for cases that warrant special care.
3. We should take the lead in the design and roll-out of new reimbursement prototypes that promote those goals.
4. We should design the education of our successors so they can contribute our unique talents successfully in new configurations.
5. New anesthesiologists should maintain their disease-based medical and diagnostic skills, prepare themselves for institutional administrative and leadership roles, and be prepared to regularly update their mental map to work in new care models and a wide variety of care settings where their unique skills will be key to address patient and societal needs.

### What's in a Name? Perception Is Reality: A Profession of Leaders with a Broad Scope and a Clear Map toward the Future

Which leads us to a final question: Should our profession's name continue to be anesthesiology? How does that affect and/or possibly limit both others' and our own perceptions of areas of potential leadership that we could fill within our local institutions and health systems, and in health care in general?

***“New anesthesiologists should maintain their disease-based medical and diagnostic skills, prepare themselves for institutional administrative and leadership roles, and be prepared to regularly update their mental map to work in new care models . . .”***

As we are expanding out of the OR into new and exciting areas of hospital-wide and health system importance, one senior level individual in my institution, upon requesting our help for acute care bedside management of an ill patient, advised me that we are limiting our potential with the name “anesthesiology.” From his point of view and the common man's or woman's point of view, our name implies limitations to our origins of surgical anesthesia. Some anesthesiology departments are attempting to deal with this conundrum by adding on one or more additional terms to their department name, such as “critical care,” “pain management,” “perioperative care,” and even “rehabilitation,” the latter because of the broad activities of their pain management team. This can sometimes create unwieldy, long names; at minimum, it is difficult to keep track of which institutions are using which names. The department at the National Institutes of Health Clinical Center is now simply called the Department of Perioperative Medicine; however, even “perioperative” alone does not apply to many of our current and potential future activities.

Despite the desirability of an all-encompassing term, it is not yet clear as to what name will best describe the very wide extent of the leadership value that anesthesiologists bring now and in the future to our patients and to the overall delivery of health care.<sup>14</sup> However, any new broader term should imply that anesthesiologists are indeed leaders:

Leaders to keep patients from getting injured or more ill when they come for acute care,

Leaders to help patients heal without complications after any acute physiologic insult, and

Leaders to help patients resolve any pain that follows them inside or outside of the hospital.

The future for leadership is unlimited, and we have an accurate mental map to get there.

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