Planning the Future of Anesthesiology

In his recent book, *The Cost of Talent*, Derek Bok opened the chapter on "Doctors" by stating, "Of all the private professions, medicine has been the most successful in shielding its compensation from the chill winds of competition." That privileged era is well behind us, and we have entered an interval of marked change in health-care financing and health-care delivery; consequent changes in medical education are inevitable. Reves et al. outline some factors involved in these changes and recommend reducing the size of graduate medical education programs in anesthesiology. This subject has been discussed widely among academic and community practice leaders in the specialty and among medical educators and students in recent years. The authors are to be congratulated for defining the issue in economic terms and for taking a stance for the future. However, Reves et al. analyzed training in anesthesiology strictly as a financial matter; they did not consider quality issues in their assessment of future workforce needs nor comment on the scope of anesthesiology practice in 2000–2030, for example. The issue demands a more balanced assessment that includes an analysis of the relative contributions of physician and nonphysician providers and considers the scope of anesthesia practice in the next century.

Their economic arguments do not consider the value of anesthesiologists in the health-care system. A prudent business approach would include some consideration of cost versus benefit or the value of the service provided in arriving at a strategy for the future.

Further, their argument is diminished by extreme examples. For instance, they present only the drastic predictions of physician oversupply, such as Weiner’s prediction of an oversupply of 165,000 physicians (28% of those practicing) by the year 2000. Reves et al. selectively ignored the predictions with a more balanced view of physician supply and demand, those tending to cluster around a modest surplus of less than 10% in the year 2000 or predicting an oversupply of 5–8% in 2000–2010, followed by a shortfall thereafter. More importantly, their arguments do not consider the contributions of anesthesiologists to the delivery of anesthesia services. To develop a balanced view of supply and demand, we must consider the current status of the specialty, contributions of anesthesiologists to clinical outcomes, validity of predictions of need, and impact of market forces that may effect change in the interim. Finally, an approach for the future must consider graduate medical education needs based on predictions of the scope of anesthesia practice in the first quarter of the 21st century.

Reves et al. emphasize the increased numbers of anesthesiologists in practice, the obvious result of increased training in the past 50 yr, especially the past two decades, yet fail to identify the benefits from such training. Review of the data for perioperative mortality associated with anesthesia and operation reveals marked decreases in that mortality during the same intervals, and all would acknowledge that we perform more complex surgical procedures on sicker patients than we did previously. Although cause and effect cannot be established unequivocally, the idea that the skill mix of the provider influences the quality of service provided is fundamental in all aspects of society. I choose to believe that part of these improvements in perioperative outcome were related directly to the number of highly skilled physicians who entered the discipline of anesthesiology in recent decades, and there is evidence to support this view.

Recently, Silber analyzed factors that contributed to mortality (death rates), complications (adverse event rates), and failure to rescue (death rate in patients who experienced adverse events) after operation. Their intent was to examine patient and hospital factors that contributed to these three negative outcomes. Their two studies involved 5,972 patients requiring cholecystectomy or transurethral prostatectomy and 73,174 patients who received various general surgical operations, respectively. One of the hospital factors analyzed was the proportion of board-certified anesthesiologists on the anesthesia provider staff. The data demonstrated that adverse events were predicted primarily by patient factors, indicating that complication rates alone are a poor measure of provider quality (an intuitively obvious concept, if we consider the clinical results of surgeons who operate on healthy patients only versus those who care for patients with multiple comorbidities, for example). Further,
they concluded that failure to rescue from complications was a better measure of the contribution of the provider to the quality of care (again an intuitively obvious conclusion if the complication is considered to result primarily from patient factors). Death rate and failure to rescue from complications were negatively related to the proportion of board-certified anesthesiologists on the anesthesia provider staff. Stated in the positive form, the more board-certified anesthesiologists involved in the delivery of anesthesia care, the better the outcomes as measured by mortality rates and rescue from complication rates. These studies support the value of anesthesiologists in the delivery of anesthesia care.

Predicting the supply and demand for physicians is an uncertain exercise at best. Most have considered that supply rates of specialists, including anesthesiologists, can be predicted easily, yet there is ample evidence that this is no longer true. As Reves et al. describe, there are a variety of proposals to control the influx of international medical graduates into graduate medical education and thus into practice in the United States. (Approximately two-thirds of international medical graduates remain in practice in the United States.) Further, major shifts are occurring in medical student choice of specialty, especially anesthesiology, that occurred in the immediate past and are occurring more dramatically at present.

It is more difficult to predict demand for physician services than to predict physician supply. Widely disparate variations in demand have resulted in projections of overall physician need that vary from major surpluses (emphasized by Reves et al.) to minor variations that are near the range of error for such predictions. Further, most predictions of demand are based on data from health maintenance organizations (HMOs), but data from these organizations have not been reported consistently (note the major discrepancies acknowledged by Reves et al. in these data), and many of the older data are from HMO populations that did not include full representation from elderly, poor, and sick persons, all of whom require relatively more care than other segments of the population.

Cooper described several broad areas of uncertainty regarding predictions of demand for physician services. These include uncertainty regarding the development of practice, the HMO data that form the basis for most predictions, and the role of nonphysician providers in the delivery of care. The latter factor is unusually important in anesthesiology, as there is essentially a balance between physician providers and nonphysician providers currently. This balance will be influenced by a variety of factors, including market forces that influence choice of careers, cost, efficiency of delivered services (physician providers have greater earnings but provide more hours of care per week than nonphysician providers), and the quality of those services as measured by indicators sensitive to provider skills. Silber stated, “From a management perspective we believe that hospital administrators may benefit from knowing not only their institution's mortality rate, but also their institution's ability to prevent adverse occurrences or to rescue patients from adverse occurrence.”

Anesthesiologists likely will work less in the future. Employed physicians, female physicians, and older physicians work fewer hours per annum than their counterparts, and it is likely that these segments of the anesthesia workforce will continue to increase as we enter the next century. Further, physicians in general have been working fewer hours per week, a trend that can be expected to increase in a managed-care environment.

The future practice of anesthesiology likely will expand considerably, especially if current practitioners and educators pursue new opportunities. Most of the predictions of demand for anesthesiologists are based on the historical concept of the anesthesiologist as a care provider in the operating room only, but several academic and private practices are broadening the scope of anesthesiology practice dramatically. These groups are leading increased commitments to preoperative preparation of surgical patients (not simply anesthetic evaluations), postoperative care of surgical patients, operating room administration and management, acute and chronic pain management, and critical care medicine, among others. Those visionary academic departments and community practices that have adopted a broader view may become the models for anesthesiology practice. These concepts were described elegantly in the 1994 ASA Ravenstone memorial lecture presented by Saidman. Others also see this potential: Wickham conjured, “The anaesthetist will be responsible for preoperative and postoperative care” as specialties realign in the future.

Market forces dominate decision-making regarding anesthesiology practice and graduate medical education. It is inevitable that these forces will result in fewer American medical graduates entering the discipline in the future, as students respond to the widely publicized perception that there are too few generalists and too many specialists in the United States. Market forces will decide the needs for anesthesiologists in the early decades of the next century also. Those market forces are at least partially under our control, for they will be influenced...
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by the quality of care, diversity of practice, and breadth of education provided by practitioners and educators in the immediate future. In this regard, anesthesiologists must rededicate their commitment to the concept that anesthesiology is the practice of medicine that encompasses all aspects of periperaoperative medicine and pain management. If Reves et al. have alerted us to some potential concerns for the future, the response should be to expand our horizons, speak for our accomplishments, and resist the tendency of others, and sometimes ourselves, to view our role as limited in the new health-care system. Overemphasis on downsizing and retrenchment, based on financial data or extreme examples only, will not serve the long-term interests of the specialty or the public. Moderate downsizing overall, with increased emphasis on the quality of residency programs and breadth of residency experience, should be the goals for graduate medical education in anesthesiology.

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