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PRESIDENTIAL ADDRESS

THE ASSAULT ON SPECIALTY MEDICINE AND THE MODERN SURGEON

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I would like to talk with you about specialty medicine and the contemporary thoracic surgeon. I shall briefly trace the development of specialty medicine, of which thoracic surgery is a leading example, describe the challenges to the authority of the specialist, and finally suggest some responses called for in this new, rapidly changing, and embattled era. I believe that an assault on the specialist is adding to the burdens of the modern surgeon and calls for a response affirming what we stand for.

Development of specialty medicine

The history of specialization in medicine began in the 1920s and 1930s, when a few doctors were able to limit their practices to a single disease, a single organ system, or region of the body. These physicians, who lived in New York, Boston, Philadelphia, and a few other large Eastern cities, were able to restrict their practices because of the increasing urbanization of America, improvements in transpor-

tation, and some emerging technologies that differentiated the specialist from the general physician. For example, electrocardiography distinguished the heart specialist from the general practitioner.¹

Dr. Paul Samson exemplified early specialization in surgery. Thoracic surgery was in its infancy when Samson completed his training in chest surgery in 1935 under John Alexander in Ann Arbor, Michigan. Samson moved to Oakland, California, and was one of perhaps only 20 or 25 surgeons in the United States limiting their practices to chest surgery. His practice consisted of thoracoplasties, bronchoscopies, phrenic nerve crushes, and drainage of empyemas in patients scattered among the tuberculosis sanatoriums of Northern California. In 1941, he took his surgical skills to the North African and European theaters of war, operating in primitive facilities near the front lines in what later became known as "MASH units." He collaborated with Lyman Brewer and others in a book entitled *Forward Surgery of the Severely Injured*, in which an experience of treating more than 10,000 battle casualties was described.² It was after World War II, when Paul Samson and many others returned to civilian practice, that medical specialization began to flourish.

The reasons for the tremendous growth of specialty medicine in this country are both simple and complex. On the one hand, an ever-expanding knowledge base in medicine compelled mastery of

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the special tools and skills, as it has in every organized activity in our culture, from athletic teams to manufacturing to higher education. At another level, complex social, political, and economic forces combined to produce medical specialization, a phenomenon that became much more pronounced in this country than in other developed nations.

The experience of World War II led to huge government expenditures in medical research and in the education of experts who could apply the new scientific discoveries to the care of patients. Science had played a major role in winning the war, and President Roosevelt, perhaps because of his own medical history, believed that science, particularly medical science, could, with government support, bring great benefits to the American public in peace time.³

An analogy was made to the Manhattan Project. A war against disease could be won with sufficient government funding. This military metaphor was accepted by the American people and their political leaders. The idea of conquering disease became all the more believable with the advent of antibiotics, which dramatically reduced the incidence of rheumatic heart disease, cured endocarditis, and abolished the tuberculosis hospitals. The notion of conquest was reinforced by the Salk polio vaccine, introduced in the mid 1950s, which virtually eliminated infantile paralysis, iron lungs, and hospitals dedicated to the care of affected patients. Success in treating infectious disease with the new antibiotics led to an increasing concern about chronic diseases such as stroke, cancer, and heart disease.

Time constraints do not allow me to fully describe the building of the health care system that became the envy of the world. The federal government committed vast resources to medical research, education, and delivery of medical care. Annual support for biomedical research increased 1000 times, from \$3 million to \$3 billion, between 1940 and 1975. The emphasis was on research, the research-oriented medical center, and the training of specialists who would pursue research during training and then apply the new scientific discoveries to the care of patients. The Hill-Burton legislation, enacted in 1946, provided for the construction and modernization of nearly 7000 hospitals in more than 4000 communities throughout the nation.

Tax breaks were given to employers to provide health care benefits for their employees, creating a private system of health insurance, a uniquely American system that today pays for approximately

50% of health care. In the mid 1960s, Medicaid and Medicare programs were enacted to provide health care for poor and elderly persons, many of whom had previously been treated as charity patients. The Medicare and Medicaid programs also funded postgraduate medical education, the education of medical and surgical specialists. Today the federal government spends, in 1993 dollars, an average of \$70,000 annually on each resident or fellow in training beyond medical school.⁴

Responding to a concern about a perceived shortage of doctors, new medical schools were built and existing schools were expanded. This resulted in a further increase in the number of physicians. A vast cadre of medical and surgical specialists was produced. Before World War II, 75% of doctors in active practice identified themselves as general practitioners or part-time specialists. By 1966, 69% reported themselves as full-time specialists. This is in marked contrast to the number of specialists in other industrialized countries, where they account for only about one third of practicing physicians. Most dramatic was the growth in surgical specialists, from 10% of the profession in 1931 to more than 30% by 1969.³

The specialty of thoracic surgery, initially a part of general surgery, continued to evolve. It acquired its own residency programs, its own certifying board, and a residency review committee that establishes standards and guidelines for thoracic surgical training and education.

American industry contributed importantly to the building of the health care infrastructure. The pharmaceutical industry and medical device manufacturers became world leaders in the development of health care products.

This so-called "Golden Era" of American medicine, dominated and led by medical and surgical specialists, recorded a brilliant series of achievements. Not the least of these was a decrease in the death rate from cardiovascular disease by 55% from 1950 to 1990. Moreover, it has been shown that medical and surgical treatments, rather than diet or preventive measures, account for about 70% of this decline in mortality rate.^{5,6}

The assault on specialty medicine

Ironically, despite this outstanding record of accomplishment, questions arose about our health care delivery system. These questions challenged our emphasis on technologically complex care and the dominant role of the specialist.

Medicare Physician Reimbursement Redistribution Vocabulary	
"Inherent Reasonableness"	OBRA 1987
"Overpriced Procedures"	OBRA 1987
"Resource-Based"	OBRA 1987
"Behavioral Offset"	HCFA Actuarial Assumption 1992

Fig. 1. Medicare physician reimbursement redistribution vocabulary. *OBRA*, Omnibus Budget Reconciliation Act; *HCFA*, Health Care Financing Administration.

In the early 1970s, one began to hear about a "crisis" in health care.⁷ "Skyrocketing" costs threatened to price medical care out of the reach of many Americans. On assuming office, the Nixon administration was confronted with the rapidly escalating costs of Medicare and Medicaid. Business interests complained that employee health benefits were making American products less competitive in world markets.

Government support for building the health care infrastructure had been given as a commitment to fund without meddling, to leave the details to the experts. And the experts, the leaders of medicine, were committed to scientific discovery and the application of the new knowledge to the care of patients by well-trained medical and surgical specialists. There was little emphasis on the costs of care as part of the medical school curriculum. Doctors and patients were insulated from the economic consequences of their decisions. And cost was the problem, with health care expenditures rising at two to three times the consumer price index.

Medical economists agree that technology is the predominant driver of medical costs.⁸ The key to cost containment apparently lay in limiting access to expensive medical technology. In its simplest terms, less care, and especially less care of the expensive, high-technology variety by specialists, was seen as the key to constraining health care costs.

Concern about escalating costs of medical care led to questions about other deficiencies in the system. It was asserted that the health of Americans

did not compare favorably with that of other countries. Magazine articles discussing the health "crisis" pointed out that Americans had higher infant mortality rates and lower life expectancies than did most Europeans, despite the fact that our per capita spending on health care was the highest in the world.⁷ The implication was that our much-envied, sophisticated, expensive, specialist-dominated care did not produce any better health outcomes than did other, simpler, less-expensive health care delivery systems.

The so-called "Small Area Variation" studies of Wennberg and colleagues⁹ pointed out unexplained variations in the use of procedures. For example, they showed that coronary bypass grafting was twice as likely to be performed per unit population in New Haven as in Boston. These studies suggested that if the experts cannot agree on the proper use of technology, then perhaps they do not know either. These unexplained variations in clinical practice raised questions about appropriate use of technology and, more importantly, about the authority of specialists.

Access to care, particularly among the urban poor and in rural areas, was deficient, suggesting a maldistribution of medical manpower in a system that had grown helter-skelter, without any systematic organization. There was increasing support for national health insurance, led by organized labor and liberal Democrats and opposed by the American Medical Association and the hospital and insurance industries.

November 1996

MUSIC: OPENING SOUND IS A HEART MONITOR OPERATING.

ANNOUNCER: If you or someone you know, is a candidate for heart surgery, consider this: most open heart surgery begins with a foot long incision, then the patient chest bone is cut in half, and then...the heart is stopped. From that point on, it's a race against time.

MUSIC: PIANO AND A HEART BEATING STARTS IN BACKGROUND.

ANNOUNCER: But at Columbia Centennial, Doctors can now perform open heart surgery, in some patients, through an incision less than four inches long. With no broken chest bone, and without stopping the heart. Open heart surgery with faster recovery, less risk, and less cost.

 And here's something else to consider, Columbia Centennial was the first hospital in Tennessee to offer this advanced heart surgery. If you're experiencing heart problems, or if you just want more information, get to the heart of the matter, call Columbia today at: 1-800-Columbia.

Fig. 2. Advertisement for minimally invasive heart surgery by the Columbia HCA Hospitals in the Nashville, Tennessee, region.

The Health Security Act of 1993 (Clinton's health plan) promised a solution to the perceived health care crisis. The plan featured a central role for the primary care physician. According to the plan's authors, this physician would provide preventive care, less-expensive but equally effective care for common conditions, and, acting as "gatekeeper," a barrier to patient access to specialty care.

The theme of less-expensive, less-sophisticated care given by family doctors, helping to prevent illness rather than treating people only when they are sick, was a powerful image. One heard about "caring and cognitive" physicians, in contradistinction to the specialist-technician-proceduralist. If the specialist could be demonized as not caring, not thoughtful, not interested in prevention, interested only in applying, often inappropriately, technology that was poorly understood and sometimes frightening to the public, it would become easier to restrict access to specialty care and mitigate the "skyrocketing" costs of care.

The Clinton health plan was perceived as overly bureaucratic and was rejected by the 103rd Congress. However, the idea of building health care delivery systems in which the primary care physician is given incentives to limit access to specialists became well accepted within managed care plans.

Not surprisingly, reimbursement for specialty care became a target. By dividing the house of medicine into primary and specialty care and promising primary care physicians a windfall increase in reimbursement, it became politically possible for Medicare payments to specialists to be sharply reduced.

The relative value process, with a pretense of scientific methodology, succeeded in lowering reimbursement for procedural services relative to evaluation and management services. Several surgical procedures, among them cataract extraction, hip replacement, and coronary artery bypass grafting, were arbitrarily termed "overpriced procedures" under an assertion of "inherent reasonableness" and were reimbursed at lower rates according to an accelerated time table. The terminology used to justify payment reductions to specialists would cause even the most ardent central economic planner to blush (Fig. 1).

More recently, the opportunity to again decrease Medicare physician reimbursement, by attacking the practice expense component of the resource-based relative value scale formula, promises to diminish the specialist's income even further. The methodology used to estimate practice expenses, a methodology that cannot be scientifically defended, favors office-based versus hospital-based practice. It is yet another turn of the screw in redistributing physician income away from the specialist. The total payments to thoracic surgeons for coronary artery bypass grafting in Medicare patients is projected to be cut by as much as 44% by lowering the practice expense component alone.

Reimbursement issues are difficult to counter, especially in a profession whose dominant ethic is beneficence, placing the patient's interests above all other interests, and especially above the financial interests of the doctor. Nonetheless, there comes a point when declining reimbursement does affect

Fig. 3. Hospital observed, expected, and risk-adjusted mortality rates. Coronary Artery Bypass Surgery in New York State, 1992 to 1994, New York State Department of Health, Albany, NY 12220.

access to care and the ability to attract high-quality people to careers that demand long years of preparation and commitment. This strategy of restricting the supply of specialists and access to specialty care might be termed "rationing behind the veil." If one reduces incentives to provide service, less service will be provided, and less money will be spent, without overt rationing of care.

The modern surgeon

This assault on the specialist places an additional burden on the contemporary thoracic surgeon. It is no longer enough to provide excellent surgical care for our patients, although this remains our highest responsibility. I want to be clear about that. The care of patients, one patient at a time, is what matters most and will continue to be the bedrock of our professionalism and of our professional satisfaction. Beyond this, however, we must assume a leadership role during this time of change and restructuring of our health care system. I believe that thoracic surgeons can exert a positive influence in shaping the future and are perhaps uniquely qualified to make the case for specialty medicine.

What is the case to be made? Simply stated, specialty medicine works, and care by experts is more effective and more efficient. As such, it has the

potential to save money and add value. All medical progress since World War II has come from specialists. Americans have voted with their feet for specialty care. The rationing of expert care by turning back to a nostalgic past is not the direction we should be heading. Who can better make this case than the thoracic surgeon, whose activities are highly visible, whose outcomes are easily measured, and who work in the vineyards of heart disease and other life-threatening conditions that touch the lives of so many Americans?

I see two areas where we can have a positive influence. One is in the discussion of technology; the other is in the discussion of quality.

Technology

Americans are fascinated, awed, and sometimes frightened by medical technology. I am talking now about technology in its broadest sense, including procedures, devices, pharmaceuticals, and organized systems of care. We need to explain our technology more clearly to our patients and to the public. We, who are to a great extent defined by technology, should be leaders in explaining the safety, effectiveness, and appropriate applications of our technology. In this era, when business ethics are replacing professional ethics in health care and

Fig. 4. Annual postoperative length of stay summary. First-operation elective coronary artery bypass ($n = 355,219$). *CI*, Confidence interval. *1996 data are for first half of year only; patients with missing dates censored.

powerful economic interests in the hospital, device, and pharmaceutical industries are marketing directly to the public, we have a responsibility to lead and to educate. The commercial interests cannot be allowed to get out in front, creating public expectations that we may not be able to fulfill.

For purposes of illustration, consider a tape played for a wide radio audience in the Nashville, Tennessee, region, touting minimally invasive heart surgery by the Columbia HCA Hospitals (Fig. 2). Whatever one might think of the potential of minimally invasive approaches in thoracic surgery, this blatant advertisement, overstating evolving surgical technology and scaring people about existing and well-proven technology, is a challenge to our professionalism.

Another area where we need to speak up is in the application of expensive technology in end-of-life situations. The public fears the specter of dying a protracted, dehumanizing, expensive death in the hospital because of the mindless application of complex technology. We must convince the public that there is consensus among experts, that we are capable of writing practice guidelines that are based on the best available scientific data, that we are sensitive to the transition from critical to terminal illness, and that we respect patient autonomy.

Finally, we need to offer a more "cognitive" service to our medical colleagues. They must come to understand that a surgical consultation offers the patient more than simple agreement to do the procedure, and that the appropriate application of technology begins early in the clinical encounter. The decision to perform cardiac catheterization, for example, may engender expectations in the patient or the patient's family, expectations that make decisions not to perform a revascularization or other procedure difficult even when such a procedure was not appropriate from the very beginning. We need to educate our colleagues, as well as our patients and the public, about the interconnectedness of care and to work toward systems of health care delivery that integrate competing technologies for our patients.

Quality

The public discussion of health care reform is beginning to shift from cost containment to quality of care. It is here that we have the best chance to make our case. Legislative proposals to limit gag clauses in managed care contracts with physicians, to disclose financial incentives that restrict access to specialty services, and to forbid premature hospital discharges (as in drive-by deliveries and drive-by

mastectomies) are evidence for the increasing concern about quality. We need to add our voices linking quality with access to specialty care.

We have seen a number of studies showing the superiority of outcomes in the management of myocardial infarction by cardiologists versus general internists and primary care physicians.¹⁰⁻¹² A similar story can be told, for example, in pulmonary resection by thoracic surgeons compared with that by surgeons without formal thoracic surgical training. Such data have been published,¹³ and more are forthcoming.

Obviously, the word *quality* means different things to different people. There is no agreement on the definition, and the measurement of quality varies considerably according to whether one is talking about health plans, hospital care, or physician performance.

Thoracic surgeons have the most advanced data bases for measuring outcomes for specific interventions of any of the medical or surgical specialties. Perhaps the best example is the Society of Thoracic Surgeons database, with its risk-stratified mortality algorithms for coronary artery bypass grafting. It is a credit to our specialty that we have led the way from the reporting of raw mortality data to a reporting system that gives a much more accurate picture of surgical performance. It is also to our credit that we have achieved a high degree of voluntary participation in our databases. If these information systems are well conceived, properly audited, and explained to the public with the proper caveats, we should welcome public disclosure of our results.

It is necessary that we provide leadership in the definition of quality, because an enormous amount of information is being collected about our activities from administrative databases, billing records, and the like, data that are worthless at best and misleading at worst. The editor of the *New England Journal of Medicine*, Jerome Kassirer, puts it well¹⁴:

From a system that until recently was dominated by reliance on intelligent and thoughtful decision making by individual doctors, we seem to have embarked on a path of codifying the practice of medicine. In part we are doing so in the name of quality. To be sure, we are developing the tools to measure and monitor quality, but before we embrace them we must be sure that they are equal to their intended tasks and that the benefits of standardization are worth the costs.

We must be faithful to our scientific training and insist that when we say we are measuring quality we are in fact doing so.

Risk-stratified operative mortality rates in coronary artery bypass grafting are useful and legitimate measurements of effectiveness. There is danger, however, if a single number is accepted as a surrogate for quality in the broad range of services provided by thoracic surgeons. If the many facets of surgical excellence, such as the use of arterial conduits, the ability to reconstruct rather than replace valves, the management of complex aortic dissections, and the whole range of ethical and interpersonal qualities we bring to the care of our individual patients, are assumed to be represented by a single number, our service may be misrepresented by overly broad interpretation.

There is another danger. In the New York experience, very few surgeons or institutions are statistically different; most are neither better nor worse than the state average for risk-adjusted mortality rates for coronary artery bypass grafting (Fig. 3).¹⁵ If this example of "report card medicine" helps to homogenize surgeons and programs, so that payors can claim that quality is assured and then choose entirely on price, the public will not be well served.

Although we embrace good reporting systems and strive to improve measurements of quality, we must, as Kassirer¹⁴ says, make sure that the databases, practice guidelines, and other attempts to codify are properly understood and properly applied.

Conclusion

Yes, there is an assault on specialty medicine. To the extent that the criticisms are valid, we should be agents of change. Thoracic surgeons have led efforts to lower costs. Same-day surgery, early extubation, and movement of patients along accelerated clinical pathways have lowered costs by reducing lengths of hospital stay (Fig. 4).¹⁶

George Will,¹⁷ in an op-ed piece in the *Washington Post*, calls the plan to contain medical costs by decreasing the number of specialists a "Medieval Cap on Doctors." In this piece he quotes Walter Reich:

"The idea that one should avert the expense of medical procedures by getting rid of the specialists who understand or carry them out, or by making sure that new specialists aren't trained . . . [is] a deliberate dumbing down of medicine."

We have much to offer our patients as thoracic surgeons. We were all convinced early in our careers of the value of specialty medicine by the experience of making a difference in the lives of our patients. We now must make sure that our voices are heard in defense of specialty medicine and of direct access for our patients to the benefits of modern, scientific care by experts.

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