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"Work Force Issues in Surgical Training and Practice"

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Work Force Issues in Surgical Training and Practice

J. David Richardson, M.D.

For the past quarter century, I have had the opportunity to be involved in the training of 145 general surgery chief residents as a member of the surgical faculty at the University of Louisville. I have also been privileged to have served as a director of the American Board of Surgery and to have been a member of the Residency Review Committee for Surgery. With these several perspectives, I will share some thoughts on the state of our general surgical workforce and the training of surgery residents and address what I view as challenges for the next generation in the provision of surgical care.

It is my belief that our country has major general surgical workforce issues that are likely to reach a crisis level within the next decade and beyond. Clearly, this is a bold statement and one that is factually difficult to prove. It is difficult to accurately assess how many surgeons are in active practice in the country; it is doubly difficult to quantify how many surgeons are needed. The calculated proper number of surgeons needed per capita would vary greatly depending on the surgeon's workload, the type of cases performed, and geographic location, among other factors. Even if we seem to have an adequate number of surgeons on a per capita basis for the country, it is my contention that there is a maldistribution of surgical workforce in geographic distribution and type of surgical practice. There may be an overabundance of surgeons for populous areas in pleasant places to live; however, many areas in our country are having a difficult time attracting qualified surgeons. There may not be a shortage of surgeons to perform elective laparoscopic cholecystectomies on insured patients, but there are fewer to care for small-bowel obstruction in the middle of the night, patients who have experienced trauma, or a complicated surgical problem in a patient with major comorbidities regardless of payer status.

In the absence of statistical validation of workforce problems, an enumeration of concerning observations must suffice:

1. The recruitment of general surgeons in many parts of the country is difficult if not impossible. Each year, my stack of correspondence from surgeons seeking colleagues grows; calls from headhunters are frequent, and discussions with them often disclose the frustrations that hospitals, communities, and potential partners feel when attempting to recruit general surgeons. This is a problem for cities and towns of various sizes and not merely rural areas. How will their citizens have access to surgical care? There are various possible solutions to the perceived deficiencies in primary care. These may include physician assistants, nurse practitioners, and other alternative caregivers. However, surgery does not lend itself to care by proxy. Likewise, many surgical problems, such as appendicitis, gastrointestinal bleeding, trauma of all sorts, strangulated hernias, and ruptured aneurysms, demand urgent, if not absolutely immediate, care. If competent surgeons are not available, people die--it sounds melodramatic, but is nevertheless true!
2. There is an increasing disconnect between broad-based general surgery practice and that of general surgical subspecialties. Many specialists can define the nature of their practice in a way that broad-based practitioners cannot. Specialists in various areas often are able to decide what they will or will not do. Increasingly, there are fewer surgeons available for the less glamorous aspects of surgical care, especially the unscheduled nocturnal cases. Clearly, the country needs high-quality surgical specialists. But, many patients who require care do not come neatly labeled and will not be able to wait for an

appointment scheduled weeks hence with a superspecialist. These patients often need broad-based general surgeons, who are in short supply.

3. There seem to be fewer surgeons available to manage difficult cases even in elective circumstances when funding for their care is not an issue.
4. Early retirement of general surgeons is an issue that has impacted the surgical workforce. The average age of retirement for general surgeons, according to American College of Surgeons data, is 62 years. Many surgeons with years of potential productive professional life are retiring.

There are a myriad of other issues that cause concern about our current workforce situation in general surgery, but none of these is as alarming as a survey of our prospects for the future number of general surgical practitioners. A simple review of the numbers of residents training in general surgery and the career path they immediately choose is enlightening. There are approximately 900 residents who finish training annually; approximately half of these residents select advanced training. Many of these advanced trainees choose surgical oncology, colorectal surgery, vascular surgery, or a discipline that treats patients who were historically within the general surgeon's purview. These specialists are a vital part of the workforce needed to care for the nation's surgical needs. Many trainees choose plastic or cardiac surgery, both of which are vital specialties; nevertheless, they are removed from the general surgery workforce. If the roughly 400 surgeons who perform general surgery are divided among the 50 states, a potential problem can be seen. Clearly, the number choosing broad-based practice is diminishing, with little evidence of decreased demand for the services they provide.

The demographics of the potential resident pool have been altered dramatically. Half of the medical school graduates are women, and there is an increased number of nonwhite men in medical school. Surgery has not done a good job of attracting and retaining women and minorities into the discipline. The failure to properly use half our potential workforce is an enormous challenge for the future.

The surgical match of 2001 was certainly a shot fired over the bow of surgery training programs. Numerous categorical residency positions were unfilled, and many training programs that have long been regarded as excellent were not able to attract a full complement of candidates to their programs. The number of applicants for the match in general surgery declined from 2099 in 1994 to 1500 in 2001. Likewise, there was a decline in preliminary surgical residents, further decreasing the chance of this potential pool being attracted to a career in general surgery. In 1996, there were 240 candidates for categorical general surgery residency positions who had already graduated from medical school. By 2001, that number had declined to 63.

An additional area of concern regarding the pool of surgical trainees is the increased reliance on graduates of non–US medical schools to complement our surgical resident rosters. Twenty-eight percent of general surgical resident applicants were from non–US medical schools in 2001, and many of those matched were international graduates. This is not meant as a jingoistic comment, but the richest nation in the world should not have to attract international graduates to fill its surgical needs; clearly, given recent national events, reliance on noncitizens is a potential risk that may run counter to changes in immigration policies.

It is tempting to blame many of these trends in general surgical applications to some inherent unattractiveness in the discipline itself. However, a review of the applicant pool in pediatric and thoracic surgery suggests the problems are not confined to general surgery alone.

In 1998, there were 80 applicants to pediatric surgery programs; in 2000, there were 39. In 2001, the number rebounded somewhat to 54. Because there are only about 24 positions, this seems to be an adequate number, although the downward trends are concerning. On the other hand, the field of thoracic surgery has had major declines in its applicant pool. In 1997, there were 214 applicants to thoracic surgery programs. In 2001, the number declined to 167. There have been unfilled positions in thoracic surgery programs each of the last 5 years, and the ability to attract US graduates is even more problematic, with many matched candidates being international graduates. There is certainly some potential good news. It may be that these trends are aberrations and our applicant pool will rebound in the coming years.

Despite the decreased number of applicants, the quality seems to have remained high. The results of this match have also sent many of the nation's surgical leaders scrambling for new ideas and solutions to this perceived decline of the attractiveness of surgery. There were numerous panels and talks at the recently concluded meeting of the American College of Surgeons on this issue. Recognition of a problem is the first step required to finding a potential solution.

ELEMENTS OF PROFESSIONAL SATISFACTION

What factors have led to this situation regarding training and practice in general surgery? I have used a triangle of professional satisfaction (Figure 1) to illustrate 3 factors that are important in the determination of our level of career fulfillment. On one corner is professional satisfaction and a sense of pride, prestige, and intellectual stimulation in our career. The second cornerstone is economic reward, while the third relates to lifestyle and personal contentment. I will briefly discuss each of these points and how changes in them have led to a different perception of surgical training and practice than in the past.

Professional satisfaction and the prestige enjoyed by surgeons is high. All surgical disciplines, including general surgery, are held in high regard by patients, the public, and other physicians. While society, in general, is more skeptical of all professions than in the past, we as surgeons are still in a privileged position in this regard.

While our esteem is undoubtedly still high, there have been issues that have diminished the perception of prestige in general surgery and other surgical specialties. Much of the diminution of the importance of surgery begins in the nation's medical schools. The rush to produce primary care physicians has clearly led to institutional antisurgery bias in many of our medical schools. Students seeking medical school admission are given extra credit for an espoused interest in primary care and are frowned on if they express an interest in surgery. Exposure to surgical curriculum has been severely curtailed in most US medical schools. The use of terms such as *cognitive disciplines* to describe nonsurgical specialties implies that surgeons do not (or cannot) think! The surgeon as "dummy." I do believe this repetitive devaluation of

surgery in our medical schools has a negative effect on who might choose the discipline as a career.

With the increased specialization within all of medicine and certainly within surgery, there is a tendency to devalue the "generalist" general surgeon. Certainly, those who practice general surgery are familiar with the question, "Are you just a general surgeon?" or "Did you specialize?" This image problem for general surgery is a real issue and one for which there is no simple solution.

The second aspect of career satisfaction is economic reward. Clearly, surgeons have had huge losses of income on a per case basis in the past decade.

While most of us are in all likelihood not motivated primarily by money, some of the reimbursement for surgical procedures is so low there is simply no way they can be performed by a person who is rational and must consider practice expenses and the potential medicolegal risks inherent in these procedures. I am convinced that many of those who point to lifestyle issues as the reason they do not choose surgery as a career are also greatly influenced by the declining economic rewards in a surgical practice. It is not politically correct for students and residents to use money as a reason for career choices. On the other hand, it is quite de rigueur to use lifestyle as the rationale for career choices. As one young surgeon recently told me, "It is so much easier to get up at night and leave my family when there is a reasonable financial reward for doing so." Failure to appreciate economic factors as being important in workforce issues will be a major mistake as we develop a comprehensive plan to address these problems.

A recent survey of the membership of the Western Surgical Association disclosed that 80% of 210 members who completed the questionnaire believe they are working harder for less economic reward than in the past. Two thirds of the respondents state that their professional satisfaction is less than in the past. Again, economic issues were the primary problem cited.

Lifestyle issues have become the most frequently stated reason for the decline in general surgery applicants in the past few years. I have conducted extensive student interviews during the past several years about professional choices. Clearly, lifestyle is the reason most frequently stated for disaffection with a possible career in surgery. Most of the women freely admit they have never or would never consider a surgical discipline. Increasingly, their male counterparts give the same responses, citing lifestyle concerns. Most of the objections from students concern the residency training itself, and few have enough information, insight, or long-range vision to address lifestyle issues in practice.

The most frequently mentioned lifestyle complaint about residency training is related to work hours. Surgery residents have long worked 80 to 100 hours per week, but are increasingly unwilling to conform to such a schedule, and I believe rightly so. However, surgical training and practice is hard work, and it seems to me that it has become politically incorrect to work hard, regardless of the reason. Students regularly challenge me with their belief that it is impossible to be a good husband and father (in my case) and work long hours. Such assertions have often developed an a priori quality that implies one cannot be a good spouse and/or parent and be a surgeon. The balance between hard work with a purpose and grueling work hours to merely cover a service must be achieved better.

The students and residents of today are much more intolerant of activities primarily seen as service rather than education. It is not uncommon for residents to spend months of their training on services in which the educational value could be achieved in far less time. I have had an abiding interest in trauma but have worried for several years about the hundreds of minimally injured patients with blunt trauma whom our residents examine for hours. Certainly, the

educational value of this activity gives way to pure service at some point. Similarly, there are many residencies in which junior surgical trainees spend months on cardiac, transplantation, or other demanding surgical rotations whose educational value could undoubtedly be achieved in less time. Conferences are often considered a luxury that residents may attend if their work is done. Scut work continues to be a feature of many rotations in many hospitals. From my experience with the Residency Review Committee for Surgery, I can attest that these issues are real in many programs. Residents often see themselves being used and are sometimes correct, I fear.

Two years ago, I was involved in a discussion on professionalism with a group of medical students. A couple of the students stated their belief that the idea of profession was outmoded. Furthermore, they asserted that the notion of the societal benefit of medicine was at times overstated. Their point was, I believe, that medicine was only one of many ways to benefit society and that it was only a job, like many other important jobs. This led to a discussion of the relative importance of medical practice to society compared with other jobs.

I asked this group of students the following question, "If you were a physician in private practice working 45 to 50 hours weekly, and wanted to give a gift of your time to benefit society, would you be more effective providing indigent care or teaching an inner-city child to read?" I have subsequently had this discussion with more than 200 of our medical students in small groups. There are considerable differences in responses by sex, but the results have been remarkably consistent from group to group: 80% of the women queried believe they would contribute as much by teaching reading than by providing indigent care. Twenty percent of the men feel the same. I posed a second question to the students, "Do you view your medical career as a job or a profession?" Eighty percent of the women state it is a job, while 50% of the men make the same response. Women usually state that the all-consuming commitment to profession is not what they want. Before rushing to judge me as antiwoman, let me tell you that I have a daughter in medicine who has made me sensitive to the need for a life away from our patients. The need to balance work with home and family is a feeling stated by virtually all students regardless of gender. This need for a balanced life is crucial and should be encouraged. On the other hand, it is clear from my discussion with students that the "only a job" mentality often translates to tightly fixed or controlled working hours with a "shift" mentality. The phrase "I want to be off duty when I leave the office or hospital" is frequently heard. The notion of continuity of care is not valued much in this ethic. I believe this attitude of wanting to do shift work is common and is another lifestyle factor that makes surgery less attractive as a career.

I worry that this emphasis on a job rather than a profession does not serve patients well and is particularly ill suited to surgery, with its important emphasis on continuity of care. If the only factor involved in motivating physicians to get up at night to see a patient, persevere on a hard case, or do other necessary but sometimes onerous work on behalf of our patients is because it is a job, we may be in trouble. One can always change jobs.

Professionalism, a sense of duty to patients, and the recognition of the inherent value of what we (and often only we) can bring to patients sustain me through a lot of hard work. I realize this is an old-fashioned notion and one that many prospective young physicians view in a different light.

The third cluster of concerns that students loosely group under lifestyle issues involve what I would term as *style* of our training. Many students decry the “hazing” aspects of our training, the “boot camp” mentality of residency programs, the rigidity of our faculty, and the general inflexibility of surgical training. In the past, these traits were fodder for year-end

lampoons and considered features that “came with the territory.” Today, many aspects of our training are regarded as boorish, overbearing, sexist, or worse.

Length of training is an issue with many residents today. The belief that specialization is required to be competitive in practice adds the potential for even longer training. Length of training, coupled with increased educational debt, has caused many to never consider surgical training. This may be especially true for women, who may have the additional issue of family planning to add to the equation.

There are some lifestyle issues inherent in general surgery for which I have no solution. Unfortunately, people need operative care at night and will likely continue to do so for the foreseeable future appendices will rupture, ulcers will bleed or perforate, cars will crash, and vessels will burst or occlude at inopportune times. Similarly, surgical care will be required in communities that may not have the best restaurants, the finest schools, a good opera, or other amenities to which we feel entitled. I do not know how to address these lifestyle issues.

POTENTIAL SOLUTIONS

Because my basic premise supposes a workforce problem based on my experience, it would be appropriate to validate such a belief. I would urge the American College of Surgeons to undertake a study of our nation's surgical workforce and determine its adequacy. However, any meaningful study of this topic must not simply look at the nation's population divided by those who profess to be or once were surgeons. An in-depth study of the number and type of working surgeons and their distribution is needed. Such a study would examine surgical workforce not only in metropolitan and suburban areas but rural locales and small- and medium-sized towns. It would need to examine the availability of surgeons who take emergency department call and are available to underserved areas. It would need to determine the number of broad-based surgeons and surgical specialists. If I am correct and there are current or potentially unmet surgical workforce needs, there are several positives that could derive from this knowledge. First, it could be used to inform medical students that their services will be required in the future. I am amazed at the number who believe there will be no need for general surgeons in the future. This will not lead to a stampede toward surgical training but may help those inclined toward our discipline.

The additional potential benefit from informed workforce statistics relates to supply and demand. There is, and will continue to be, a large demand for surgical services, particularly as our population ages. If I am correct that we have inadequate providers of this care, it may give pause to those who have devalued surgical care in rhetorical and economic terms.

The ability to attract and retain an adequate number of surgical trainees needs to be considered in societal rather than selfish terms. If a residency does not fill its quota of trainees, I have never heard of a faculty member voice concern about the loss of a surgeon for America. I have heard many worry at great length about how their service will be covered and who will take night call. This argument simply does not resonate with anyone but ourselves. Focusing on service to patients rather than on rotations will serve us better.

In addition to a study to assess our workforce situation, we need to address the 3 elements of career satisfaction previously mentioned.

Certainly, the economic rewards of surgical practice do not approach that of a decade ago. Considering the length of training required for surgical practice, the skill required, the hours worked, and the risks involved, compensation for various surgical procedures may not be equitable compared with nonsurgical disciplines. We should continue to support efforts of the American College of Surgeons to inform those making decisions on physician reimbursement of

this inequity. The public needs to be better informed on this issue. If a surgeon receives less to repair a hernia or perform a breast biopsy than a plumber to unclog a sink, we have a problem! I say that as one who recognizes the value of plumbers! On the other hand, we should not lose sight of the fact that our compensation places us in the upper 0.1% of incomes in the country. My concern about the continuous voicing of dissatisfaction with our incomes is the negative impact it has on student and resident recruitment.

The previously mentioned shortage of surgeons in many locales will, if properly demonstrated, be a stronger argument for changing reimbursement than complaints about the fact that incomes have declined. Having said that, proper compensation for our work relative to other specialties is crucial if we are to attract the best and brightest to a surgical career.

The second element that needs attention relates to the devaluation of surgery as a discipline, particularly in our medical schools. Primary care is important; internal medicine rotations are important. However, many changes in medical school curricula have come at the direct expense of exposure to the surgical discipline. Often, these changes were not challenged by surgical chairpersons or departments. At the time, many of us in surgery believed ourselves in a privileged position regarding demand for surgical training. We were often complacent, and perhaps a trifle arrogant, about changes in surgery's status in our medical schools.

We should dissuade ourselves of notions of arrogance and be kinder to students and residents. Clearly, there is some need for a hierarchal structure, but treating residents as young colleagues is a powerful tool for good. The concept of the cognitive specialties vs the procedural specialties should be vigorously opposed. The concept that surgery is not intellectually challenged must be refuted. We must work to reclaim lost ground for an increased surgical presence in our medical schools. If we as surgeons do not believe that our discipline is as important as any other, and vigorously defend its equal place in the admission process and curriculum, surgery as a discipline will continue to decline.

If we are to regain lost ground in our medical schools, there are several things we must do. First, as previously mentioned, we must be advocates for surgery, we should not regard ourselves as superior to those in other disciplines but neither should we tolerate those who try to demean surgery or devalue its role in patient care. Second, surgical faculty must be willing to play the academic games and do the groundwork necessary to ensure an adequate place in the curriculum. This means we must have meaningful representation on curriculum or educational policy committees and insist on proper student exposure to our discipline. This type of work has often been an anathema to surgeons, but it is vital. We cannot ignore this fundamental committee work and then complain as our educational role is lessened.

Third, we must expose students to our discipline early in their medical school education. If a student's initial interaction with a surgical resident or faculty member is the final clerkship of the third year of medical school, it would be difficult from a logistical standpoint alone to attract the student to surgery. Preclinical students need to see surgeons through lectures, preceptorships, and mentoring. At the University of Louisville School of Medicine, we have a Surgery Club for first- and second-year students. We encourage all students to attend regardless of their perceived interest in a surgical career. In addition to a free meal, they are exposed to some aspect of surgical training or practice. If we are permitted earlier interaction with students, it is imperative that these opportunities not be lost by a lack of committed faculty.

Our students should be in contact with our strongest surgical faculty and not our weakest. Often, the student teaching is left to the most junior residents and faculty. There is a saying that "amateurs teach amateurs to be amateurs." Contact with strong charismatic faculty can often

have a galvanizing effect on students. Our department has a weekly luncheon during which a senior faculty member has an informal session with students. Many of these encounters are rated as extremely important educational experiences despite their informal nature.

Our surgery departments around the country need to reexamine third-year curricula to ensure a real-world experience that will be useful to them in subsequent practice. In most medical schools, the third-year surgery rotation simply attaches students to existing resident teams. Given the high proportion of same-day operations, preoperative evaluations are often impossible. Students may participate on more ileo-anal pouch reconstructions than appendectomies. They may be thoroughly exposed to the procedural aspects of a sentinel lymph node biopsy, while rarely being able to examine a patient with a breast mass. Quite simply, much of what students see will, in fact, be totally irrelevant to their future practice regardless of career choice. Let me hasten to add, most medical school rotations would have the same criticism. Many of us need to fundamentally restructure this educational experience for our students. This will be difficult, but mentoring arrangements with individual surgeons may be useful. Specific goal-directed objectives are vital. For example, every student must see a case of appendicitis, learn to evaluate an acute abdomen, start an intravenous catheter, acquire basic technical skills, and obtain an old-fashioned medical history and perform a physical examination of a surgical patient, reviewed and graded by a surgical faculty member. Educational reform is a popular concept for elementary and secondary schools in this country. Likewise, those of us entrusted with the surgical education of America's future physicians should examine the effectiveness of our educational models.

The third factor in career satisfaction to be addressed relates to lifestyle. Lifestyle issues in practice are largely the purview of the individual practitioner, but many aspects of residency training can be changed without negative impact on training or patient care. As previously mentioned, many aspects of pure service work should be eliminated. Those of us in faculty positions should try to eliminate resident abuse by nurses. The number of nuisance calls for diet changes, sleeping pills, laxatives, and noncritical orders in some of our hospitals is staggering. The use of nursing coordinators to screen such calls has had a remarkably positive impact on several of our rotations. Physician assistants or case managers may be needed to fulfill roles traditionally performed by residents. I am certain that the days of 100-hour work weeks are gone. The Residency Review Committee for Surgery has mandated 80-hour work weeks, and many programs are struggling to meet this requirement. Innovative thinking that may vary from long-held beliefs about resident training will be required. The work hours situation must be addressed. If we fail, external agencies will perform that task for us, as has been done in New York.

While the phrase “education rather than service” has been used so frequently it seems a cliché, that is in fact what is needed. Every resident rotation should be examined within a matrix of time allocated vs educational benefit. If this is done, I am convinced that many surgical residencies would change dramatically and the educational experience would improve.

If surgical disciplines are to meet future workforce needs, women must be a vital part of the profession. I must admit that I have enormous concerns about how that goal can be accomplished. I have heard surgical educators discuss shared residencies, but that would seem to lengthen training in an unbearable way. Clearly, we must encourage women to fulfill other meaningful roles in their lives, such as motherhood, while training for their career. Many women have told me they defer pregnancy, not only for personal reasons but because of the potential disruption of other residents' lives. These are important issues that demand new solutions and

increased flexibility if we are to attract women to our discipline. This seems to be the major workforce problem we face.

In closing, much of the discussion about lifestyles today has assumed a "warm and fuzzy" and "touchy-feely" quality that I find worrisome. I am bothered because those who benefit most from this alleged new sensitivity are the physicians themselves. "My free time," "my personal space," "my chance to be a well-rounded person," these are all important concerns, but who speaks for the patient? How are their needs met? Lifestyle as a buzzword cannot be allowed to be a "cop-out" for failure to have adequate surgeons and other physicians to meet societal needs.

I would offer an additional admonition, which relates at least tangentially to lifestyle. We must not underestimate how our perception of our own lifestyle affects our students and residents. If we demonstrate through our own lives a deep sense of purpose, of commitment to high-quality patient care, and of professional satisfaction, it will speak volumes to those we seek to influence about the value of a surgical career. If we are good spouses and good parents while being good surgeons, it will do much to refute the negativism affecting surgical training. The survey of our members mentioned earlier indicated that despite the problems we recognize in surgery, 80% of those in the Western Surgical Association would make the same career choice again. I submit that we surgeons have become too negative about much of what we do. We have enormous problems, but what professional does not? Surgery will undoubtedly be different in the future, but it is still a glorious calling. The challenge for all of us is to rededicate ourselves to a sense of professional satisfaction that will attract others to the path we have chosen. Only then can the surgical workforce needs for the future be met.