

Presidential Address
General Surgery Under Siege

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LADIES AND GENTLEMEN, members and guests, it is a significant privilege and honor to address you today at the 45th Annual Meeting of the Midwest Surgical Association. As I reflect on my career in General Surgery, the area which has been most rewarding is Program Director of the General Surgical Residency Program at St. John Hospital and Medical Center in Detroit, Michigan for the last 20 years. Recently, however, multiple forces have influenced and are influencing the way we train general surgeons. These forces have influenced me to talk today about "General Surgery Under Siege." It is important that I point out at the outset that the following remarks are my own personal opinion and may or may not be shared by others.

I have divided the invasions in the way we train general surgeons into four categories: 1) the match decline; 2) the six competencies; 3) the current lawsuit against the very institutions that are involved in the selection of all residents, and 4) the 80-hour work-week. We will first look at the match decline in general surgery. In 2001 at the Program Directors Meeting we were shocked to see that 68 positions in general surgery went unmatched. In 2002, 53 positions went unmatched. However, this decline actually began in 1998 when 24 positions went unmatched and in 1999 when 38 positions went unmatched.¹ If we look more closely at the number of positions filled by U.S. medical school graduates we can see a gradual but persistent overall decline. What are some of the potential reasons for the decline in interest in this once coveted and highly competitive residency? I feel there are five potential reasons. The first is resident work hours. Surgical residents have always put in a significantly greater number of working hours than those in many other specialties. They have had to balance their time between the operating room and bedside patient care. These working hours may now be, however, a moot point with the new Accreditation Council for Graduate

Medical Education (ACGME) rules. The second is the gender of medical school graduates, number three is the lack of role models, number four is the undergraduate degrees of our medical students, and number five is the postresidency lifestyles and remuneration.

Traditionally the number of females in medical school from the early to mid-1900s was a very small percentage. However, over the past 20 years the number of female graduates has risen to 47 per cent.² If we look at the demographics of general surgical residents in training from 1991 to 2000 we can see a significant rise in the number of females and a decline in the number of males. If we also look at the percentage of surgical residents to the total number of residents however we can see that there is a definite decline in the interest of medical students going into general surgery. At first glance one may conclude that the pool of males in medical school is going down and the residency and the lifestyle of general surgery is less attractive to females. This could account for the decline of overall applicants. A longitudinal study of surgical residents in 1994 through 1996 by Kwakwa and Jonason³ found that while the percentage of beginning male and female residents was relatively stable there was a significant decline in the interests of white persons. Therefore if one looks at gender of medical school graduates and the demographics of the general surgical residents one must conclude that not only is there a larger pool of female students with a lower interest in general surgery there is also a declining interest in white males in general surgery.

Neumayer et al.⁴ found that the choice of surgery as a career for women was strongly associated with the higher proportion of women on the surgical faculty. With an increasing percentage of women graduating from medical school it will be important for the surgical faculty of medical schools to increase their proportion of women surgeons to attract women into the field. It is also important to have good positive role models for the male medical students in order to affect their declining interest in general surgery.

Another factor that influences the number of medical students interested in general surgery is the undergraduate degrees of the students that enter medical school. Over the last 20 years medical schools have looked for medical students with a wider variety of

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interests than the traditional science degree. This was done to potentially expand the number of medical students who may be interested in primary care as a career. I looked at the undergraduate degrees of our graduating surgical residents over the last 10 years, and as you can see (Table 1) almost all had science degrees. This is the group that is more likely to be interested in general surgery.

The last area that I feel has caused the reduction of interest in general surgery is the perception of postresidency lifestyles and remuneration for general surgeons. Students feel that general surgeons in practice work too hard and have limited time for family or other pursuits. They see fellowships developing in the primary components, surgeons limiting their practice to less demanding lifestyle areas such as breast and hernia surgery, and now there are empty spots in the once-coveted vascular and trauma critical care fellowships. They see a continuing decline in reimbursement for the amount of work and time put in. In the first 10 years of the conversion factor implementation general surgery was hit particularly hard. According to the *Wall Street Journal* Technology and Health Sections published in September 1996 the average loss of income to physicians in 1994 was 4 per cent. This decline in reimbursement to surgeons became a particular concern to the Board of Governors of the American College of Surgeons who in their 1998 report stated, "Concerns about reduction and reimbursement [were] the most commonly expressed issue. In many instances private payers are reimbursing surgeons at levels that are lower than those determined by the Medicare program. This has forced surgeons to work longer hours for less income." The special national alert on practice expenses from the Society for General Surgeons in 1997 stated that the changes in the resource-based relative value scale system could cause general surgeons' income to fall more than 25 per cent. More hard work and tremendous responsibility coupled with a significant fall in reimbursement is not the recipe for attracting high-caliber people into general surgery. I have the following recommendations—this is certainly not a complete list—to attract medical students back into general surgery. First resident work hours is a moot issue. As of 2003 all of us are required

to live under the 80-hour workweek rule and failure to comply carries significant penalties. We should assign mentors to students and expose them to private practicing physicians to demonstrate to them a variety of lifestyles. Consider admitting a great number of science majors to medical school, which may expand the pool interested in general surgery and also to become clinical investigators in their careers. Improvement in the remuneration of general surgical procedures is a critical factor.

The next area of invasion into the training of general surgery residents are the six competencies. These competencies are patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. While these are all laudable endeavors they have become a paper and documentation nightmare for surgical program directors.

I wondered how all of this came about. Had we not been teaching surgical residents these important points, had I erred for the last 20 years? Then I realized that this was a reaction to the loss of confidence in medicine by the public based on the Institute of Medicine's report of 1999, "To Err Is Human." This report was fueled in part by celebrated medical accidents, which garnered nationwide publicity. Most of these cases had to do with the prescribing and administering of medications. The Institute of Medicine's 1999 report stated that 98,000 deaths were from medical errors. This was based, however, on a single report in 1984 from New York hospitals. Also in the institute's report but not published by the media was a 44,000 death rate figure—still too high of course—based on a study in Colorado and Utah in 1992. The Institute of Medicine divided these errors into two main categories: One was adverse events—70 per cent of which were preventable and 60 per cent of which were of a technical or diagnostic nature. The other category was medication errors in hospitals. Ninety of these errors were caused by either prescribing or administering medication. Should we in medical training programs respond by documentation of the six competencies? Or would our efforts be better spent to reduce technical and diagnostic errors, lobby for funding to improve information systems, and have a national program for designing and implementing computerized order entry pharmacy systems?

I will make just a brief statement about the current lawsuit by doctors Jung, Llerena and Greene *versus* various institutions and hospitals. The allegations in the lawsuit are that these institutions and hospital combined and conspired to displace competition in recruitment, hiring, employment, and compensation of resident physicians and that they imposed a scheme of restraints by fixing, artificially depressing, standardiz

TABLE 1. Undergraduate Degrees of Graduated Surgical Residents from St. John Hospital and Medical Center

No. of Residents	Degree Type
18	Biology
4	Bioscience
3	Physiology
2	Psychology
1	Engineering
1	Chemistry

ing, and stabilizing resident physicians compensation and other terms of employment. There is nothing in the lawsuit specifically about hours of work, resident fatigue, or education. It appears that the lawsuit is about money. These plaintiffs forget about the origins of the National Resident Match Program. Back in 1950–1951, there were 5,800 graduating students competing for nearly 10,500 hospital internships. The competition for these students was keen. It has been stated that hospitals were soliciting students even at the second-year level to sign on the dotted line long before they had sufficient experience to make career choices. In the 1950–51 graduating class an experimental program called “The Match” was undertaken. However the students felt that the program favored the hospitals over the interests of the students. The National Student Internship Committee recommended that the Boston Pool Plan be considered. The National Inter-Association Committee on Internships adopted the plan for the 1992 match. The Match has changed little in 50 years; it is a match program recommended by the medical students.

The last area I would like to comment on is resident work hours. One of the most significant of criticisms of all residencies and general surgery in particular is that residents work too many hours and develop significant fatigue, and medical errors are made because of this fatigue. In response to these criticisms the ACGME in June 2002 stated that resident work hours should be no more than 80 hours per week, and this will become mandatory in 2003. This is based in part on the fact that as productivity increases, increasing stresses are seen on residents to the point where a critical burnout can occur. Also, in a survey of resident fatigue done in 1991, 41 per cent of 145 residents cited fatigue as the cause of their most serious mistake. In nearly one-third of the cases the patient died as a result of this error. The Libby Zion case added further fuel to

the decision to limit work hours. The 80-hour work-week will add significant worries to program directors. Will there be insufficient clinical experience to turn out high-caliber surgeons? There will be at a minimum a 20 per cent reduction in the time exposure to patients. How can we comply with the requirement of continuity of care which is so important in a general surgical residency? Are we going to a shift mentality?

We as program directors are faced with these burdens. We are the front lines, we are the role models, and we are the captains. It is we who must come up with and develop these new ideas so that we will continue to turn out the finest general surgeons.

It is a “brave new world” and the Midwest Surgical Association is the type of organization to help lead us into the future. In 1981 a friend and colleague, Dr. Richard Berg, encouraged me to attend the Midwest Surgical meeting on Mackinac Island. He said it was an excellent meeting, with great papers and great people and I could bring my family. So I packed my family up and set out for Mackinac Island. Over the next 20 years my family and I have met wonderful people and have had many wonderful experiences. The MSA has become such a part of our family that my son asked me if he, could bring his girlfriend to Mackinac so he could propose to her. The Midwest Surgical Association is the organization of science and family for others to follow.

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