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Retirement Age and the Work Force in General Surgery

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Objective

This study examines the age of retirement of general surgery Fellows of the American College of Surgeons from 1984 through 1995 and analyzes the potential effect on the work force in general surgery of age of retirement.

Summary Background Data

Data from the Fellowship files of the American College of Surgeons, the American Board of Medical Specialties, and the American Medical Association disclosed that the number of practicing general surgeons in the United States in 1994 was between 17,289 and 23,502, or approximately 7 general surgeons per 100,000 population in the United States.

Methods

The Fellowship files of the American College of Surgeons from 1984 through 1995 were searched for general surgeons who had written to ask for retirement status or who had died before retirement. Calculations were made of the effect of years in practice on the total general surgeon work force. All living retirees from 1984 to 1985 and 1994 to 1995 were questioned to learn the factors leading to a decision to retire.

Results

The average age of retirement for general surgeon Fellows has risen from 60.45 in 1984 to 62.97 in 1995. Because of increasing diversion of general surgery graduates into surgical specialties, total practice years are declining despite increasing length of practice time. The principal factors for retirement decisions in 1984 and 1985 were disability (26%), leisure time (20%), and unfavorable changes in surgery (29%). In 1994 and 1995, disability was a major factor in 14% of decisions, leisure time in 20%, and unfavorable changes in surgery in 56%.

Conclusions

Fewer general surgeons enter the work force each year. Thus, despite working longer, the total number of years practiced by each cohort of new general surgeons has decreased.

Despite many studies of the number of physicians needed to care for a growing and aging population in the United States,[1-7] attempts to predict the use of physician services and the work force required to provide these services have been fraught with uncertainty and error.[8-10] The work force in general surgery and the need for general surgical services have been particularly difficult to measure.[11] As recently as 1991, 13 general surgeons per 100,000 population were estimated to be needed by the year 2010 as a consequence of an aging population requiring more surgical care.[12] The advent of managed care has changed these estimates considerably.[13] Established managed care organizations use fewer physicians, and the actual need for general surgeons appears to be approximately half of that anticipated.

We recently have analyzed the work force in general surgery[11] and the trends in graduate surgical education.[14] The number of graduates from general surgery residency programs is essentially stable at an average of 1004 per year for the past 12 years. We found that the number of practicing general surgeons in the United States is between 17,289 and 23,502, a ratio of 7 per 100,000 population. This figure is consistent with current managed care use of general surgeons[13] and the added requirements for surgical care in rural areas.[15-17] If general surgeons were to be well distributed in urban and rural areas, the supply appears to be similar to the need.

The work force is determined by the number of residency graduates entering general surgery each year and the number leaving through death or retirement. This study considers trends in age of retirement and documents the principal reasons for retirement as reported in a survey of retired general surgeons.

METHODS

Records from the Fellowship Department of the American College of Surgeons for the years 1984 and 1995 were analyzed to determine the number of general surgeon dues-paying Fellows retiring or dying each year and their age at retirement or death. The mean and median ages were calculated for each group. Deaths were identified only in general surgeons who had not retired and were younger than 65 years of age at the time of death.

Data from the Longitudinal Study of Surgical Residents[14] also were analyzed to calculate the number of general surgery residency graduates who enter the general surgery-based (require or usually complete a general surgery residency) specialties of plastic, thoracic, vascular, colon and rectal, pediatric surgery, transplantation, and surgical oncology each year; from these figures, the number of graduates entering the practice of general surgery was estimated. An assumption was made based on 1994 data[14] that residents graduated from general surgery residency programs at 33 years of age throughout the time of this analysis. From these data, total practice years were calculated for each cohort of residency graduates. It was also assumed that two thirds of general surgeons are Fellows of the American College of Surgeons, and that those who are not Fellows retire and die at similar ages as Fellows.

A survey instrument was developed and mailed to all living retirees from 1984, 1985, 1994, and 1995 (Table 1). Fellows who had indicated their reason for retirement in their initial correspondence with the college to initiate retirement (and release from dues payments) were not included in the mailing, and the reason for retirement as originally stated was recorded. The questionnaire asked the retired surgeon to check any or all of the reasons for retirement provided in the questionnaire and to indicate the principal reason with an asterisk. The respondents were anonymous. A total of 373 questionnaires were mailed with a self-addressed, stamped envelope included for reply.

Surgeons admitted to Fellowship in the American College of Surgeons between 1960 and 1963 were subject to a special assessment and, in return, were considered to be in a category of "dues fully paid" upon reaching age 65. These Fellows would not routinely report the age of their retirement if this took place after age 65. Before and after this period, the designated age for retirement and release from dues payment is 70. Other surgeons became "life members" by paying a lump sum; they would not pay annual dues and would not notify the college of their retirement age. An assumption was made that if a dues fully paid surgeon retired earlier than age 65, he or she would write to indicate retirement, and that life member surgeons retired at a similar age to that of dues-paying surgeons.

RESULTS

The number of general surgeons retiring from active Fellowship in the American College of Surgeons is rising each year, as has the number of initiates into Fellowship. In 1984, fewer than 50 individuals were known to have retired, whereas in 1995, 250 retired. There was a distinct increase in the number of initiates in the 1950s as the post-World War II residency graduates entered the work

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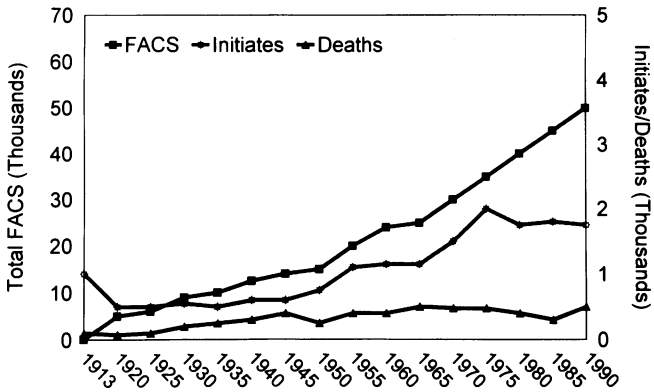

Figure 1. The total Fellowship (■) of the American College of Surgeons (living Fellows) has risen progressively, with a higher rate of new Initiates (*) each year beginning in 1950. The number of deaths (▲) of Fellows each year has been nearly constant since the 1950s. Source: Fellowship files of the ACS.

force (Fig. 1), and these surgeons practiced for approximately 30 years before retiring at about the time of this study period. The average age of retirement has risen progressively from 60.45 years in 1984 to nearly 63 years in 1995 (Fig. 2). The number of deaths of Fellows younger than 65 years of age is quite low, averaging 30 per year (at an average age of 57.7 years). This rate has changed little since 1940 (Fig. 2). The average age of death of general surgeons overall is 77.2 years (median = 80 years).

The number of general surgery graduates has fluctuated between 1042 in 1986 to 976 in 1990, averaging 1004 a year between 1984 and 1995 (Table 2). The number of general surgery graduates who continue in general surgery-based subspecialty residency programs has risen from 373 in 1984 to 515 in 1995, reducing the number

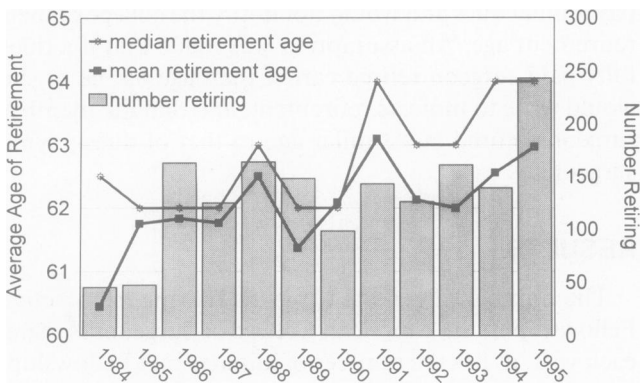

Figure 2. The number of general surgeon Fellows of the American College of Surgeons who retire each year (bars) from 1984 through 1995, and the mean (■) and median (*) age at which general surgeons retired during those years. Source: ACS Fellowship Files.

Table 1. SURVEY OF RETIREES IN 1984–1985 AND 1994–1995

Items in Survey
1. Retirement to pursue leisure activities
2. Retirement to pursue employment in nonsurgical activities
3. Retirement because of physical disabilities
4. Retirement because of loss of interest in the practice of surgery
5. Retirement because of favorable pension/annuity circumstances
6. Retirement because of unfavorable changes in surgical practice
Comments added

entering the practice of general surgery from 654 in 1984 to 485 in 1995. The average age of general surgery residency graduates is 33 years, thus the average number of years in practice has risen from 27.45 in 1984 to 29.97 in 1995. The total number of practice years (new general surgeons × average years in practice for that cohort) has declined progressively from 17,952 total years for the 1984 cohort to 13,788 total years for the cohort of 1993. In 1994 and 1995, this figure has risen slightly as the age of retirement and years of practice have increased. In 1995, total practice years for this cohort (who graduated from residency in 1965) is 14,535.

Three hundred thirteen (84%) questionnaires were returned. No attempt was made to recontact those who did not respond. Of 40 questionnaires sent to 1984 and 1985 retirees, 34 (85%) were returned; of 333 questionnaires sent to 1994 and 1995 retirees, 279 (84%) were returned. Retirees from 1984 and 1985 checked a number of reasons for retirement in the survey instrument. The most frequent factors selected by this group were "pursue leisure activities," "physical disabilities," "favorable pension/annuity circumstances," and "unfavorable changes in surgical practice" (Table 3). Fewer 1994 and 1995 retirees indicated that physical disability was a major factor in their retirement, but 72% indicated that unfavorable changes in surgical practice was a factor and more than half reported that this was the most important factor in their decision. Of those selecting more than 1 factor, 129 selected unfavorable changes together with pursue leisure activities, and 89 selected pursue leisure activi-ties together with favorable pension/annuity circumstances. A combination of pursue leisure activities, favorable pension/annuity circumstances, and unfavorable changes in surgical practice was chosen by 59 respondents.

Many also included written comments expanding on their reasons for retirement. Of note were many comments regarding concerns with malpractice threats and cost of liability insurance, comments expressing discomfort with technologic advances especially in laparoscopic surgery, and many comments expressing disap-

Table 2. GENERAL SURGERY COHORTS AND TOTAL PRACTICE YEARS

Year	General Surgery Graduates*	Total Specialties†	Total in General Surgery	Age of Retirement (yrs)	Years of Practice§	Total Years‖
1984	1027	373	654	60.45	27.45	17,952
1985	1024	401	623	61.75	28.75	17,911
1986	1042	400	642	61.83	28.83	18,508
1987	1023	436	587	61.76	28.76	16,882
1988	995	436	559	62.50	29.5	16,490
1989	993	444	549	61.37	28.37	15,575
1990	976	469	507	62.09	29.09	14,749
1991	991	499	492	63.10	30.01	14,765
1992	995	503	492	62.13	29.13	14,332
1993	979	506	473	62.15	29.15	13,788
1994	1001	514	487	62.56	29.56	14,396
1995	1000	515	485	62.97	29.97	14,535

* Data from Longitudinal Study of Surgical Residents, 1994.[14]

† Plastic Surgery (completed general surgery residency), Thoracic Surgery, Vascular Surgery, Pediatric Surgery, Colon Rectal Surgery. Data from Longitudinal Study of Surgical Residents, 1994.[14]

‡ Average age of retirement, general surgery Fellows of the American College of Surgeons.

§ Assumes that graduates are 33 years of age when entering practice.[14]

‖ Product of the total in general surgery × years of practice.

pointment and distress with loss of freedom, regulations and paper work, and with "working harder for less income." Several specifically commented on the loss of the doctor–patient relationship and "burn-out." Others wrote concerning their pleasure in the practice of surgery and now in retirement. Many believed that planned retirement at a certain age was appropriate and that young, well-trained surgeons were available to take over their surgical practice. Several had entered second careers in a variety of nonmedical activities, and others wanted to spend more time with their families. A number commented that they would have retired earlier if financial circumstances had permitted.

Table 3. FACTORS SELECTED AS IMPORTANT IN DECISION TO RETIRE

	Retirees in			
	1984–1985		1994–1995	
	Factor Selected	Most Important*	Factor Selected	Most Important*
1. Leisure activities	19	7 (20%)	168	46 (20%)
2. Nonsurgical activities	7	3 (9%)	20	4 (2%)
3. Physical disabilities	12	9 (26%)	48	33 (14%)
4. Lost interest	3	3 (9%)	41	6 (2%)
5. Pension/annuity	13	2 (6%)	108	13 (6%)
6. Unfavorable changes	12	10 (29%)	202	129 (56%)

* Refers to percent of respondants indicating factor(s) most important. Not all respondants in 1994–1995 indicated that one or more items were most important factors.

DISCUSSION

In our review of retirement ages of general surgeon Fellows of the American College of Surgeons in the 11 years since 1984, we found that their average retirement age progressively has increased from just older than 60 years of age to nearly 63 years. This trend also has been observed for U.S. Fellows in all of the surgical specialties (data not shown). Although these observations are limited to Fellows, we have extrapolated the results to all practicing general surgeons and have assumed that the non-Fellows (approximately one third of U.S. practicing general surgeons) have similar patterns of retirement. Death of general surgeon Fellows younger than the age of 65 years is infrequent; extrapolating this number (an average of 30/year) to the entire general surgeon population yields only 45 deaths annually during the practice years. The average age of death of general surgeons is 77 years, and the median age is 80, considerably longer than the average of 73 years for all white men in the United States in 1993.[18]

We have determined previously that there are approximately 20,000 practicing general surgeons in the United States, a ratio of 7 per 100,000 population.[11] This ratio,

assuming an optimal geographic distribution, is consistent with the rate of use of full-time general surgeons by well-established managed care organizations, the needs for rural surgical care, and an aging population.[12,13] A trend to working longer would supplement this work force. However, instead of an increase in total general surgical practice-years worked by each cohort of new graduates from general surgery residency programs (as they retire later and work longer), we have calculated that the total practice-years contributions of each new group have decreased. Only in the past 2 years has this trend plateaued at a rate that is 81% of the total practice-years in 1984. Whereas the annual number of graduates of general surgery programs has remained nearly constant since 1982, movement into the general surgery-based subspecialties of thoracic, plastic, vascular, colon and rectal, pediatric surgery, transplantation, and surgical oncology has increased.[14] The number of general surgery graduates who do not specialize further in formal graduate surgical education programs, and, presumably, provide the full range of general surgery services, has decreased by 25% since 1984. This counterbalances a longer practice time and suggests that general surgery services are less and subspecialty services greater than in 1984. If general surgery residency programs were to be reduced, the loss of graduates would decrease general surgery services even further.

Retirement of a surgeon is an abrupt event. Cessation of a surgical practice means "a sudden change in the pattern and rhythms of life, with loss of status, diminution of income, and reduced contact with workmates."[19] Moreover, two thirds of the surgeons surveyed by Greenfield and Proctor[20] in 1993 had made no or minimal plans for their lives after retirement. Little wonder, then, that many surgeons view retirement with ambivalence. They seem to be susceptible to "push factors," pushing them out of surgery, rather than "pull factors," the positive anticipation of a pleasurable retirement.[21] There is, generally, a positive relationship between age and work orientation with older workers being more satisfied with their jobs and their acquired skills, wisdom, and experiences. As retirement age draws closer, however, a preretirement dynamic has been observed wherein older workers begin to find their work and their position more burdensome.[22] Physical disability and, especially in recent years, perceived unfavorable changes in surgical practice appeared to be prominent push factors in our survey. For these surgeons, the role exit process was one of disappointment and anger at the changes accompanying increased regulation and managed care. Pursuing leisure activities or a new career became secondary to the burdens of modern surgical practice.

A substantial number of survey respondents, especially in the group retiring in 1984 and 1985, described pull factors in which planned leisure or new endeavors were prominent. Many returned to school in entirely new directions for them, traveled, or moved to favorable climates. The comments appended by many of these respondents emphasized their pleasure in retirement. Another group, especially well represented in the 1994 and 1995 retirees, selected both a push (unfavorable changes in surgery) and a pull factor (pursue leisure activities) in their decisions to retire. Nonetheless, the more recent retirees from 1994 and 1995 practiced longer and retired later than did the surgeons retiring in 1984 and 1985 for reasons that are unclear and were not identified in this study.

Our study has documented an 11-year trend toward later retirement and longer time in practice among general surgeons in the United States. However, because of a parallel trend for general surgery graduates to enter subspecialties, actual general surgery practice-years have declined by 20% in the past 10 years. Presumably, these services have been replaced by specialists in the general surgery-based subspecialties. Changes in subspecialty enrollment and in educational programs (*e.g.*, separation of a specialty from general surgery certification requirements, as is occurring in plastic surgery)[23] or reduction of positions in general surgery residency programs should be monitored closely to ensure that the work force in general surgery is appropriate for the health care needs of the nation.

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Discussion

DR. FRANCIS D. MOORE (Boston, Massachusetts): I congratulate Dr. Jonasson for giving us this interesting look at man- and woman-power in surgery and at total years in practice and the termination events for surgical practitioners, two things that we did not examine at all in our surgical manpower studies several years ago.

As we all realize, general surgery is the least anatomically defined of the surgical specialties, and it is the specialty of surgery that contains the largest number of nonboard-certified specialists in the United States. The "occasional surgeon" calls himself a general surgeon. The general practitioner who does some surgery is a "general surgeon." One must be cautious in understanding what they do and who they are, especially in small communities. In our work, we tried to control this problem by concentrating on board certification.

All of our studies in the last 15 or 20 years have been confined to the board-certified cohort. We showed that board-certified surgeons contribute the predominance of leadership in surgery, have the largest hospital practices, command the largest facilities, are predominant in the referral centers, and remain in practice longer.

What is the content of general surgery? It deals largely with the gastrointestinal tract, its satellite glands, the peritoneal cavity and its contents. And yet it is not "gastrointestinal surgery." General surgeons also take care of breast tumors and certain other peripheral tumors (especially thyroid, parathyroid, and sarcoma). Breast surgery is a major component of general surgery. Maybe general surgery should be denoted as "guts and glands." But we also take care of a very large component of trauma and accept the huge burden of burn care. Possibly "guts, glands, and trauma" is general surgery. In academic terms, general surgery is the garden from which the other specialties grow, as Dr. Jonasson has so clearly expressed. And, it is responsible for a large share of undergraduate teaching.

The need for any category of surgeon depends primarily on the scope, epidemiology, and nature of the diseases treated by that particular group of surgeons. This seems to be a platitude, but it bears a lot of reflection. I will give you an example. Coronary heart disease has not changed very much in its incidence and distribution in this century. Yet the development of coronary artery surgery first reported, as I remember so well, to this Association in about 1965, has completely revolutionized the need for experts in thoracic and cardiac surgery. Here is an example where a discovery, a development, an innovation has radically increased the need for surgeons of a certain category.

Consider the "manpower effects" of antibiotics on mastoid and osteomyelitis surgery. During my student and internship days, mastoidectomy was a common procedure and mastoid infection was the most common cause of brain abscesses in children. Osteomyelitis occupied a great deal of our time. This entire range of surgery, which was handled largely by otolaryngologists, orthopedists, and general surgeons, simply has vanished.

In considering future projections, let us look at what is going on currently. Transplantation is the largest entirely new field of medicine, surgery, and basic science to have originated in this century. The first description of extensive experience was with kidneys in 1952 and 1955. This is rapidly developing into an entirely new field of surgery with measurable increases in manpower (and womanpower) needs. There are approximately 1200 transplant surgeons in this country. They have grown a new society, approved training programs, and a modified term of certification. And in terms of what Dr. Jonasson has mentioned, they may be, possibly already are, the next group to break off from "general surgery." She has very rightly used the term "general surgery-based specialties." This would include most of transplantation, but not all.