

# The Training of Head and Neck Surgeons: The Care of Head and Neck Patients



2002 Presidential Address, American Head and Neck Society

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**P**erhaps the greatest honor bestowed on the president of the American Head and Neck Society is the opportunity to speak at the annual meeting. I have chosen to address 2 topics of great concern to me: the training of head and neck surgeons and the care of head and neck patients.

Two years ago in San Francisco, our president, Jesus E. Medina, MD, in his inspirational address entitled “Tragic Optimism vs Learning on the Verge of More Change and Great Advances,” analyzed the factors that influence the decision of residents to select advanced fellowship training in head and neck surgery.<sup>1</sup> He challenged us to be flexible and reminded us that the future belongs to those who are learners and can cope with change, not to those who are learned and live in the past. The following year, responding to that challenge in his presidential address, Ernest A. Weymuller, Jr, MD, explained how the American Head and Neck Society had modified fellowship training, making it more flexible and permitting 1-year fellowships with appropriate curricula.<sup>2</sup> He warned us about disturbing trends in applications to otolaryngology residencies and challenged the leadership of the specialty to modify residency program requirements.

I consider the head and neck fellowship program to be the most important accomplishment of our society. Originally conceived as a response to “dabblers,” those individuals without adequate training or experience to appropriately care for patients with head and neck cancer, the goals of the fellowship program have matured through the years. The curriculum has changed, and the intent now is not simply to graduate competent head and neck

surgeons but also to train the researchers and teachers who will be the future leaders of our specialty.

Just as we have come to rely on evidence-based medicine to analyze the outcome of medical treatment, I thought it would be worthwhile to study our fellowship program to determine if our graduates are indeed achieving the goals that we have set for them. To do this, I created a questionnaire that was sent to all of the graduates of our approved fellowships during the past 11 years. This questionnaire asked for information about the residency training of the fellows, the current nature of their clinical practice, their research accomplishment, and their degree of satisfaction with their practices.

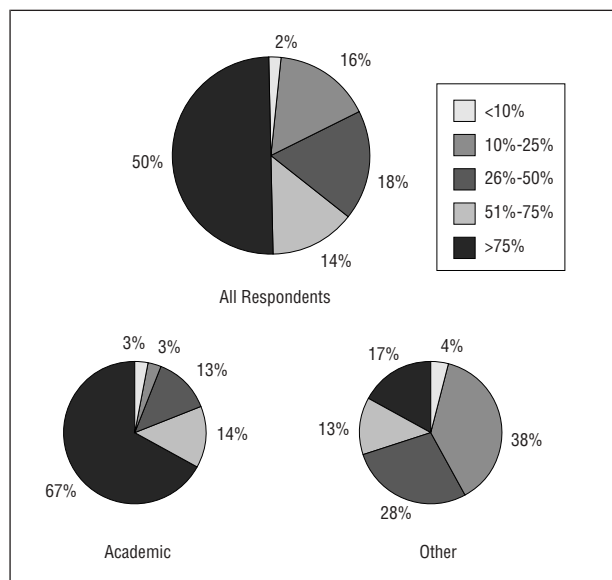
The study was limited to North American graduates of Advanced Training Council–approved fellowships. This decision was made with difficulty. Our international members have become one of the greatest strengths of our society. One of the most important achievements of our fellowship programs has been the training of international graduates who return to their home countries, where they become the leaders of our specialty abroad. They were excluded from this survey, not because of a lack of respect for what they have accomplished but because the nature of medical practice overseas is so different from practice in North America that comparisons would be meaningless. I also did not include graduates of those fellowships that are not approved by our Advanced Training Council, recognizing that there are some unapproved fellowships

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**Table 1. Fellowship Graduates Responding to Survey**

Program	No. of Fellows	Program	No. of Fellows
State University of New York at Buffalo*	1	Northwestern University, Chicago, Ill*	3
University of Cincinnati, Cincinnati, Ohio	8	Ohio State University, Columbus	5
University of California—Davis, Sacramento	5	University of Oklahoma, Oklahoma City	3
University of Texas—Galveston*	3	University of Pittsburgh, Pittsburgh, Penn	12
University of Iowa, Iowa City	2	Roswell Park Cancer Institute, Buffalo, NY	11
John Hopkins University, Baltimore, Md	4	Stanford University, Stanford, Calif	7
University of Texas M.D. Anderson Cancer Center, Houston	17	University of Toronto, Toronto, Ontario	7
University of Michigan, Ann Arbor	10	University of Virginia, Charlottesville*	4
Montefiore Medical Center, Bronx, NY*	8	University of Washington, Seattle	4
Memorial-Sloan Kettering Cancer Center, New York, NY	12	<b>Total</b>	<b>126</b>

\*Fellowship program no longer active.



**Figure 1.** Percentage of practice devoted to head and neck surgery.

that year after year train highly accomplished head and neck surgeons. There was simply no way to objectively decide which nonapproved fellowships should be included and which should be excluded.

Responses were obtained from 126 fellows who finished training between June 1990 and June 2001. Graduates of all approved fellowship programs responded, including those who completed training in the 5 programs that are no longer active (Table 1). It is no surprise that most of our fellows originally trained in otolaryngology—head and neck surgery. A total of 113 (89%) were graduates of otolaryngology residencies. There was 1 graduate of a plastic surgical residency and 1 oral maxillofacial surgeon. Eleven (9%) had completed general surgery residencies. Four of these 11 completed fellowship training at programs that are no longer active, and 6 of the remaining 7 trained at one institution, Roswell Park Cancer Institute, Buffalo, NY. It is obvious that head and neck surgery is now a subspecialty of otolaryngology. To plan for the future of our specialty, we must look to the otolaryngology residents as our source of new head and neck surgeons.

A total of 62% of fellows surveyed are currently in academic practice, 30% in private practice, 6% in mul-

**Table 2. Research Activities of Fellows\***

Research Type	Fellows, %	
	Academic Practice	Other Practices
Laboratory research	52	13
Clinical research	97	38
Grants	54	23
Publications	81	61

\*Data are given as percentage of fellows responding to the survey who have participated in each research activity, received research grants, or published their research after completion of their fellowship.

tispecialty groups, and 2% in the military. Of those who are not in full-time academic practice, 45% have academic appointments. Clearly, we are achieving our goal of training academic head and neck surgeons. Most graduates of head and neck fellowships devote most of their practice to treating head and neck patients (Figure 1). A total of 50% spend more than 75% of their time performing head and neck surgery and only 18% spend less than 25% of their time doing the same. There is a difference, though, between those in private practice and those in academic institutions. It is becoming increasingly difficult to treat large numbers of patients with head and neck cancer in a private practice. Our graduating residents and fellows need to understand that if they want a career in head and neck surgery it will almost certainly be in an academic institution.

It was the intent of the Advanced Training Council that head and neck fellows be capable researchers. Has this goal been achieved? I think the answer is yes (Table 2). Most fellows currently in academic practice are involved in laboratory research and have successfully competed for research funding. Nearly all are doing clinical research. Most of those who have not published the results of their research completed training in the past few years and will undoubtedly publish in the future. Many fellowship graduates who are not currently in full-time academic practice have also performed important research. It is no surprise that all fellowship graduates practicing in academic institutions are involved in resident education. It is a tribute to the quality of our fellowships that 60% of those fellows not in

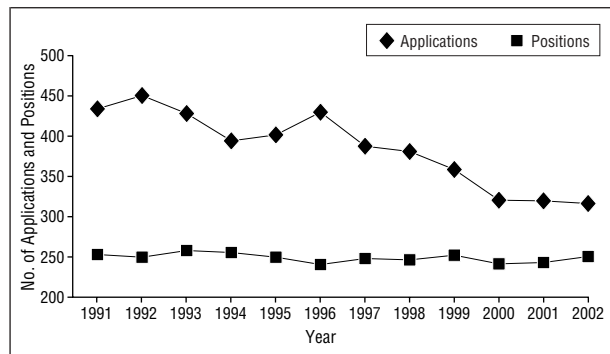


Figure 2. Otolaryngology residency trends.

full-time academic practice participate in the training of residents.

The decision was made to require that all head and neck fellowships beginning July 1996 and thereafter be 2-year programs. Before this, 75% of fellows spent only 1 year in advanced training. The intent was to ensure that fellows have adequate opportunity to develop the research skills necessary for a successful academic career. Did this change have the desired effect? A total of 49% of 1-year fellows are currently in academic practice, whereas 73% of 2-year fellows are in academic practice. I am not convinced, however, that a cause-and-effect relationship exists. Some head and neck surgeons who begin their careers in academic institutions ultimately leave to enter private practice. Those who finished training 5 or more years ago are more likely to have left academia than those who finished training more recently. In addition, the financial pressure of declining reimbursement for surgical procedures makes it increasingly difficult to have a large head and neck practice in anything other than an academic institution. Unless our more recent graduates are willing to enter practices where their training will not be fully used, they have virtually no alternative to full-time academic practice. The higher proportion of recent graduates who are currently in academic practice may simply be a reflection of these 2 observations.

In general, our fellows have been satisfied that their additional fellowship training has been worthwhile. A total of 86% of those in academic practice state that their practice has met their expectations. Of the 14% who did not feel that their practice had met their expectations, a surprisingly large number are performing a high percentage of head and neck surgery. It is the absolute number of head and neck cases that has been disappointing, not the percentage of head and neck cases. Of those not in academic practice, 30% state that the practice has not met their expectations. Surprisingly, 45% of those whose practices are less than 25% head and neck surgery state that they are doing as much head and neck surgery as they had anticipated. It is apparent that different fellows have different expectations on entering fellowship training.

Disturbingly, only 62% of graduating fellows become members of the American Head and Neck Society: 75% of those in full-time academic practice and only 40% of the remainder. This is a failure of this society, which needs to do more to include our fellows in our scholarly and social activities. It is also a failure of the fellowship

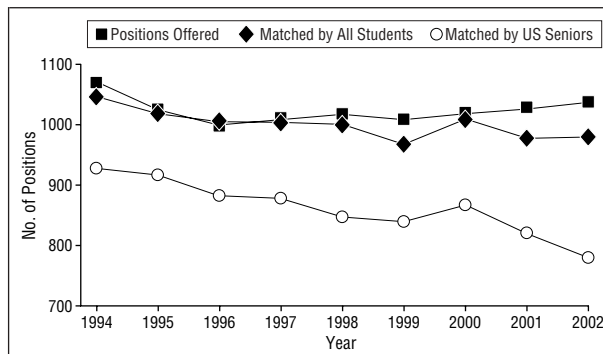


Figure 3. General surgery residency trends.

program directors who have the responsibility of ensuring that their graduates become a part of the community of head and neck surgeons represented by membership in this society. We will do more to prevent this from happening in the future.

Overall, I believe that the results of this survey demonstrate that the head and neck fellowship program supervised by the Advanced Training Council of the American Head and Neck Society has succeeded in meeting its objectives. Graduates of approved programs devote a substantial part of their practices to head and neck surgery and have been active in both clinical and basic science research and resident education. We are indeed training the future leaders of our specialty.

There is cause for concern, however. In the most recent head and neck fellowship match, there were only 17 applications for 16 available positions. Of approximately 250 graduating otolaryngology chief residents across the country, only 17 individuals were interested in obtaining approved advanced training in head and neck surgery. Eleven positions were ultimately filled, and 5 positions went unfilled. We are training the leaders of our specialty, but are we training enough head and neck surgeons to care for our patients?

Figure 2 demonstrates the trend in applications to otolaryngology residencies.<sup>3</sup> If one extrapolates from this curve into the future, it would be easy to conclude that in several more years positions in otolaryngology will be unmatched. I think there is another explanation for this, however. The United States Medical Licensing Examination scores of medical school seniors who match for otolaryngology residencies are high and continue to improve.<sup>3</sup> These scores indicate that our entering residents are among the brightest students in their class. The decrease in applications for otolaryngology residencies may simply represent better counseling of medical school seniors who now realize that, unless they are at the top of their class, application for otolaryngology residency will be unsuccessful. Interest in otolaryngology remains strong. The quality of our residents continues to improve.

Compare this to general surgery, where a real problem exists (Figure 3).<sup>4</sup> Each year, slightly more than 1000 categorical positions are available in general surgical residencies. For the past several years, between 5% and 10% of those positions have gone unmatched. More disturbing is the percentage of those positions filled by graduates of American medical schools, which has fallen to about 75% and continues to decrease.

**Table 3. Head and Neck Surgical Experience and Comfort Level, Graduating Otolaryngology–Head and Neck Surgery Residents, 2000**

Procedure	No. of Cases*	Comfort Level, %†
Parotidectomy	18	94
Thyroidectomy	20	92
Neck dissection	36	91
Laryngectomy, total	8	77
Composite resection	7	61
Maxillectomy	4	49
Laryngectomy, partial	1	38

\*Median number of cases performed during entire residency by graduating chief residents.

†Percentage of graduating chief residents who indicated they felt comfortable performing each type of operation without the assistance of a more experienced surgeon.

Overwhelmingly, graduates of American medical schools identify lifestyle and quality of life as the reasons for not considering a career in general surgery.<sup>5,6</sup> Perhaps I am being a cynic, but I cannot help but think that lifestyle is at least in part a euphemism for inadequate income. If insurance reimbursement better represented the work performed by surgeons, then perhaps our medical students, in choosing their careers, would be more willing to accept a little less free time in exchange for a more reasonable standard of living.

We need to ask ourselves whether these same concerns are discouraging otolaryngology residents from choosing head and neck surgery as a career. Head and neck surgery is, of course, a subspecialty of otolaryngology. Yet, it may in fact have more in common with general surgery than with some of the other otolaryngology subspecialties. After all, ours is predominantly a hospital-based specialty. We spend long hours in the operating room. We do not spend most of our day in the office. The procedures that we do are performed in the hospital, not in the clinic. The operations we perform are time-consuming. Our patients are sick. They develop complications. We work late into the night. We come into the hospital on weekends to see our patients. We may indeed be closer to general surgeons in our lifestyles, at least our professional lifestyles, than we are to a subspecialty such as pediatric otolaryngology.

The problem is not limited to America. Our 2001 Hayes Martin lecturer, Dr William I. Wei of Hong Kong, wrote to me earlier this year stating, “The futile struggle to make ends meet has not gone unnoticed, at least by our smart and gifted residents, who are turning away in droves from a career in head and neck oncology. . . . It does not take a genius to realize that time is running out. In the absence of young, talented surgeons coming up through the ranks, when experienced and senior surgeons retire from practice, then so too will the expertise and enthusiasm for our specialty diminish and fade.”

Remember too that the incidence of head and neck cancer in this country is not decreasing. More than 60 000 patients each year are diagnosed as having head and neck cancer.<sup>7</sup> Numerous patients previously diagnosed as having head and neck cancer require care, and many patients with benign conditions, particularly of the thyroid, also

require surgery. More than 60 000 new patients; only 11 fellowship trainees this year. There is a problem.

The other question that needs to be answered is where patients with head and neck cancer are treated. We are training fellows to work in the universities, to be the professors and the researchers. Are our patients being treated in the academic medical centers where our fellows practice? The New York State Department of Health maintains a comprehensive database, the Statewide Planning and Research Cooperative System (SPARCS), which contains extensive information about all hospitalized patients in the state, including diagnosis and the hospital in which the patient was treated. Although it is always dangerous to extrapolate from a local experience, I think it is worthwhile to look at patterns of care in New York State.

Information was obtained from the SPARCS database on all patients discharged from hospitals in New York State in 2000 whose diagnoses included *International Classification of Diseases, Ninth Revision (ICD-9)* codes 140 to 149.9 and 160 to 161.9. These codes include most head and neck cancers with the exception of thyroid cancer. A total of 5317 discharges representing 3384 different patients were identified. Hospitals were classified as teaching hospitals if they were part of an approved otolaryngology–head and neck surgery residency program. The 2 major cancer centers in the state, Memorial-Sloan Kettering Cancer Center, New York, NY, and Roswell Park Cancer Institute, were also included in this group. Unfortunately, information about patients in Veterans Affairs hospitals is not included in the SPARCS database, and those patients are not included in this study. A total of 61% of patients studied were treated in teaching hospitals and 39% in community hospitals. In fact, 25% of patients were treated in hospitals treating fewer than 25 patients with head and neck cancer annually.

Is this a cause for concern? There are many studies that correlate the influence of hospital and surgeon volume on surgical mortality.<sup>8,9</sup> For cardiovascular and major oncologic operations, there is an inverse correlation between volume and mortality. Although published studies address mortality, it seems reasonable to assume that the same relationship would be true for nonfatal complications as well. There are no similar studies of complicated head and neck surgical procedures. There is no reason to think, however, that the same relationship that has been demonstrated for abdominal and thoracic cancer surgery would not be equally true for a procedure such as laryngopharyngectomy with free flap reconstruction.

Who are the physicians in these community hospitals responsible for the care of patients with head and neck cancer? They are certainly graduates of our otolaryngology–head and neck surgery residencies. Do they have adequate training and experience to care for these patients? **Table 3**, modified from Dr Medina’s presidential address, summarizes the surgical experience of graduating otolaryngology residents and includes their own assessment of their confidence in their ability to perform these procedures independently.<sup>1</sup> Certainly, for some procedures, such as parotidectomy, thyroidectomy, and neck dissection, our residents have adequate experience and an appropriately high comfort level. For some

of the more common major cancer operations, such as laryngectomy, composite resection, and maxillectomy, the numbers are not as high as one would hope. Many residents do not feel comfortable performing these procedures independently.

We are training a small number of skilled head and neck surgeons who are practicing in large academic medical centers, yet many head and neck patients are being treated in community hospitals. The physicians responsible for the care of these patients may not have sufficient experience to provide optimum care for them. I would make several proposals to address this problem.

The first is to encourage the regionalization of care. We must eliminate financial barriers that prevent the treatment of patients in academic medical centers. Private insurers should not be allowed to deny care because a university hospital was unwilling to sign a financially punitive agreement with them. We must be patient advocates in making that practice illegal. We must encourage the selective referrals of more advanced cases to major cancer centers. It is certainly safe to do a partial glossectomy in a community hospital. It may not be reasonable to enter patients into complicated combined chemotherapy-radiation protocols in institutions that do not have extensive experience caring for such patients. Because there does not seem to be a great financial incentive to care for these patients in community hospitals, we need to open pathways with our colleagues to encourage them to refer these more difficult cases to the major teaching centers. Finally, this is the 21st century. We must avail ourselves of electronic teleconferencing. There is no reason why physicians in community hospitals 50 or 100 miles (80 or 160 km) away cannot participate in a tumor board at a university. There is no reason why patients and x-ray films cannot be evaluated by experts many miles away or why protocols cannot be supervised even if the drugs and radiation therapy are administered in the community.

We must modify residency training. I do not believe we can train all residents to do all procedures. We simply do not perform enough of some cancer operations to have this luxury. Sometimes, while spending hours helping a resident through a difficult case knowing that he or she is planning a career in facial plastic surgery, I wonder what I am accomplishing. I am not proposing that only those who want to be head and neck surgeons should have the benefit of exposure to head and neck cases during their residency. However, those residents who have no intention of ever performing head and neck surgery in their practices do not need to be trained to do some of these more difficult procedures. We need to permit residents to individualize their training to maximize their exposure to subspecialties of particular interest to them.

We must make a stronger effort to encourage our residents to choose head and neck surgery for their careers. We must improve the quality of life of our residents. We must decrease their work hours. We must continue to emphasize education over service. We must make sure that they are paid adequate salaries. Our residents

are adults. They have families and children. They should not be required to live below the poverty level.

We must improve reimbursement for our specialty. This is not a question of selfishness or greed. It is a simple fact of life. If a career in head and neck surgery provides an income that is inadequate, then none of our residents will be interested in our specialty. The American Head and Neck Society is working hard to make the reimbursement for head and neck surgery more accurately reflect the work that we do. We will improve reimbursement, but it will be a time-consuming, expensive task. We need your help.

We must emphasize mentoring. Teaching and mentoring are not the same. We are all good teachers, but we need to ask ourselves whether we are truly good mentors. When our graduating fellows do not join the American Head and Neck Society, we have failed as mentors. Mentoring means knowing our residents, their aspirations, their strengths, their concerns. It means opening doors for them. It means maintaining contact with them when they leave our residencies and our fellowships. For those who have chosen a career in head and neck surgery, it means helping them as they mature in our specialty, getting them on the right committees, advising them on their research, aiding them in obtaining funding. Mentoring is a lifelong commitment.

Finally, I urge you to remember our heroes; remember those we have spoken of today: Elliot Strong, Helmut Goepfert, and Bob Byers. Remember what it was about these individuals, and all those others like them, that made you want to be a head and neck surgeon. And in remembering them, try as well to become a hero yourself so that you may be a hero for the next generation of head and neck surgeons.

Accepted for publication September 18, 2002.

This address was presented at the annual meeting of the American Head and Neck Society, Boca Raton, Fla, May 11, 2002.

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## REFERENCES

1. Medina JE. Tragic optimism vs learning on the verge of more change and great advances. *Arch Otolaryngol Head Neck Surg.* 2001;127:749-755.
2. Weymuller EA Jr. Harnessing the energy of fusion. *Arch Otolaryngol Head Neck Surg.* 2002;128:226-228.
3. Perry D. *Otolaryngology Match Report.* San Francisco, Calif: AADO/Head and Neck Surgery; 2002. Letter to members from the Association of Academic Departments of Otolaryngology.
4. Bland KI, Isaacs G. Contemporary trends in student selection of medical specialties: the potential impact on general surgery. *Arch Surg.* 2002;137:259-267.
5. Hennington JA. Why the numbers are dropping in general surgery: the answer no one wants to hear – lifestyle! *Arch Surg.* 2002;137:255-256.
6. Meyer AA, Weiner TM. The generation gap: perspectives of a program director. *Arch Surg.* 2002;137:268-270.
7. Jemal A, Thomas A, Murray T, Thun M. Cancer statistics, 2002. *CA Cancer J Clin.* 2002;52:23-47.
8. Birkmeyer JD, Siewers AE, Finlayson EVA, et al. Hospital volume and surgical mortality in the United States. *N Engl J Med.* 2002;346:1128-1137.
9. Hannan EL, Radzyner M, Rubin D, Dougherty J, Brennan MF. The influence of hospital and surgeon volume on in-hospital mortality for colectomy, gastrectomy and lung lobectomy in patients with cancer. *Surgery.* 2002;131:6-15.