The 2022 Otolaryngology Workforce

AMERICAN ACADEMY OF OTOLARYNGOLOGY–HEAD AND NECK SURGERY®

American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS)

American Academy of Otolaryngology–Head and Neck Surgery,
The 2022 Otolaryngology Workforce

Alexandria, Virginia, United States, July 20, 2023

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AMERICAN ACADEMY OF
OTOLARYNGOLOGY–
HEAD AND NECK SURGERY®

THANK YOU

This work is dedicated to all readers whose lives this may shape so we may better serve our patients. A special thanks to those members who completed this survey. Without you, none of this would be possible.

American Academy of Otolaryngology–Head and Neck Surgery

Leadership Team and Workforce and Socioeconomic Survey Task Force

2021-2022 LEADERSHIP REGARDING TASK FORCE CREATION

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BACKGROUND

Otolaryngology-head and neck surgery (OHNS) is a dynamic, continually evolving specialty that provides primary expertise in disease processes essential to daily living as well as many directly affecting quality of life from birth until death. Even though OHNS is a relatively small specialty it encompasses a broad range of clinical knowledge and therapeutic advancement that patients routinely access. These include issues specific to breathing and swallowing, hearing and balance, sinus and allergy, head and neck cancer, thyroid and parathyroid disease, pediatric and geriatric head and neck diseases, sleep disorders, voice problems, skin disorders, and facial plastic and reconstructive surgery. Comprehensive otolaryngologists often provide care in all of these areas, and OHNS also has a consistently growing cadre of physicians with specialty and subspecialty training in each of the areas above. Collaborative interactions between the two groups have resulted in rapid evolution of the knowledge base and treatment options available for patients across the spectrum of clinical expertise in OHNS.

As the healthcare system in the United States strives for equitable access and greater affordability for all patients and the system in general, strategic planning requires an accurate accounting of resources available in order to achieve these goals. This ideal is particularly true for Americans with more limited healthcare access, both from a socioeconomic and distance standpoint. For OHNS, that requirement means having a reliable accounting of physicians currently available, their location and capacity, the type of patients they treat, how long they plan to practice, how many are in the pipeline, and what type of patients they plan to see. Currently we do not have a reliable answer to most of those questions.

Previous efforts over the past 50 years have made attempts to assess the otolaryngology workforce, identify current trends, and predict future advancements in the specialty. The most accurate of these was funded by a National Institutes of Health (NIH) grant in 1975. The results of this study were instrumental in the separation between ophthalmology and otolaryngology in 1978 and the establishment of the AAO-HNS. This study predicted otolaryngology's dominance in head and neck surgery, the beginning of fellowship training in the specialty, the expanded role women otolaryngologists would play in the near and long-term future of the specialty, and the significant technological advances that would propel the specialty. This study was done at a time when otolaryngology was clearly in a growth mode, and the projections made turned out to be clairvoyant over the following 20 years.

Subsequent to that study, more recent notable studies occurred that measured our supply adequacy by otolaryngologists per 100,000 population. The Academy was involved in a 2000 workforce analysis by Pillsbury et al. and subsequently had a Workforce Task Force that was active until 2016.[1,2] Interestingly, while the initial concern in 2000 was an expected decline of otolaryngologists per 100,000 population, what we witnessed was a rise over this period of time. Numerous other articles have examined the otolaryngology workforce through different lenses. This 2022 study produced by the AAO-HNS Workforce and Socioeconomic Survey Task Force was designed to include a combination of questions that will lead to the most comprehensive analytics and information since the 1975 study.

The information obtained in the first study year, 2022, will act as a baseline, and hopefully participation will grow in future years of this annual survey so we can identify trends helpful in advocacy endeavors, education and training decisions, and optimal construction of physician practices both in the private and academic sectors. It is widely felt that medicine in general is facing a severe shortage of physicians

1 Pillsbury, et al. The workforce in otolaryngology - head and neck surgery: Moving into the next millennium. *Otolaryngol Head Neck Surg.* 2000; 123(3): 341-356. doi: 10.1067/mhn.2000.109761.

2 Hughes CA, et al. Otolaryngology workforce analysis. *Laryngoscope.* 2016; 126: S5-S11. doi: 10.1002/lary.26238.

in the upcoming 20 years, but those projections may not be accurate for otolaryngology. Almost certainly, variations will exist among specialties, and as we lobby for a system that allows us to provide the best patient care, it will be essential to have data-driven evidence to support whatever position we take.

The Task Force, chaired by Andrew J. Tompkins, MD, MBA, was deliberate and inclusive in putting together the survey that was distributed to the AAO-HNS membership in August 2022. While similar in some respects to other specialty-related workforce analyses, this instrument was specifically designed for OHNS.

The workforce study sought to provide as complete a data set as possible on the number of practicing otolaryngologists, the training each has received, practice type and location, fellowship training, practice history, productivity, use of advanced practice providers (APPs), call arrangements, retirement plans, and income. The Task Force felt that it was critical to be able to analyze each of these areas as they relate to the demographic information provided by each of the survey respondents.

When looking at the supply side of the equation for OHNS for current and future adequacy, no one question or statistic provides an accurate answer by itself. The specialty is experiencing constant change in the demographics of those entering the workforce as well as the training paradigm as it relates to additional fellowship training, transition away from small-group private practices to large-group practices and employed practice models, the use of APPs, changes in number of patients seen per day, in-office and outpatient procedures, and call responsibilities. Information received from survey participants helped us set a "current status" baseline for the above-mentioned areas that will be important to follow longitudinally for planning purposes. The survey includes data provided by residents-in-training at the front end of the cycle all the way to those at the end of their careers contemplating retirement and retirees.

The results of the survey should be useful for medical students and residents as they plan their training and future practice model by identifying areas of practice by subspecialty that have the greatest need as well as those that might be saturated. The survey can also identify geographic areas where need is the greatest. Specific areas of the survey highlight fellowship training and how those individuals are currently practicing, both in academic and private settings, including what percentage of patients are directly related to their area of fellowship training.

For those already in practice, the survey results help paint the picture of what the typical academic and private practice looks like today. This includes patients seen, number of office locations, utilization of APPs, operating room time, income, and perceived adequacy of the local supply of otolaryngologists as well as fellowship-trained subspecialists. The answers to these questions also provide guidance to both current and future practitioners as to where opportunities may be the greatest for the type of practice they are looking for as well as identifying areas of lesser need.

The days of relying on the old maxim that it took a population of approximately 30,000 people in order to support each otolaryngologist is no longer valid, particularly for subspecialists. Different geographical areas have very heterogeneous dynamics that require considerably more complex evaluations than in the past. The data provided in the survey will be invaluable in some of those determinations.

One of the most important questions that we need to answer as physicians/specialists is, "What determines an adequate supply?" Is it based on number of physicians, timeliness of medical and surgical access, or some other markers that we have yet identified? Surprising as it seems, there is no one source that provides an accurate count of otolaryngologists in the U.S. As we will show, the best estimates will come from a combination of databases with sampling.

Much will be riding on the question of the right number of physicians, as Graduate Medical Education (GME) funding is debated in Congress, private payer networks are created, and value-based care is instituted. We encourage you to participate in our future workforce surveys so that we can have the most reliable data possible to inform the changes that will be occurring in the practice of OHNS in the U.S. and help guide our members in their training and practice model selections as they plan their future.

Sincerely,

James C Denneny III

James C. Denneny III, MD
AAO-HNS Executive Vice President and CEO

METHODOLOGY AND GLOSSARY

The 2022 Workforce Survey questions were designed by the Task Force in the spring of 2022 and separated into module categories of interest. The questions were designed to understand the larger categories of interest to our field, as determined by the diverse array of Task Force members. The Academy partnered with Cvent in June 2022, which programmed the questions into an online survey with logic formatting.

The 2022 Workforce Survey was initially released to the Academy membership in early August 2022, with ongoing marketing efforts through the *Bulletin* and *OTO News* with email reminders. The survey was closed November 12, 2022.

The raw data were downloaded on December 15, 2022, and stored on a secured server with password protection. Protecting respondent information was of utmost importance at all times. Unique response codes were generated by Cvent based on member replies through the survey link provided. This ensured unique responses; however, because of potential sharing of the survey link, names and email addresses were used to double check and ensure single responses, and redundancies were eliminated. Survey responses of "other" that described a respondent's practicing status that could not be categorized into one of the investigated categories—resident, fellow, actively practicing physician, or retiree—were not included in the analysis. Responses deemed unreliable (e.g., age entered as 99+ yet not matching Academy data or selecting all categories of ethnicity including "prefer not to answer" with no other responses) were not included (two instances). Following this process, all unique, identifiable information either provided by the respondent or linked to Academy member roles were deleted, and the data were saved for the final analysis.

This process yielded a total of 1,790 responses (141 residents, 30 fellows, 1,483 actively practicing otolaryngologists, 136 retirees). Not all of these responses indicated fully completed surveys. When analyzing each question, blank/no responses were not included. This allowed us to capture data from partially completed surveys for any question that was answered.

Generally speaking, 10 responses were used as cut-off for inclusion in a question analysis, though discretion was used when wanting to only look at the five major practice type response categories that dominate our specialty (academics, nonacademic hospital, private multispecialty group, private single-specialty group, solo practice). The final report was presented in themes of current and future interest that emerged, rather than following the survey modules.

Where free text responses were allowed, categories were manually created by one of the study's authors, Andrew J. Tompkins, MD, MBA, based on those responses, and all responses were then reviewed and placed into either a predetermined category or newly created category. Where income amounts were described, if median or 25th/75th percentiles did not fall cleanly on an income boundary of the $25k ranges, the midpoint was used within that $25k range.

The American Urological Association (AUA) data team also helped with segments of the analysis. Specifically, they cross-referenced zip code data provided on practice locations to aid in our understanding of the urban/rural aspect of our care delivery. This was done using Rural-Urban Commuting Area (RUCA) codes generated by the U.S. Department of Agriculture (USDA) and a zip code-to-RUCA crosswalk data file provided by the USDA. This file was based on the most recently available (2010) U.S. Census. RUCA codes 1-3 were coded as "urban" whereas codes 4-10 were coded as "rural," per USDA guidance.

Also, the AUA performed a multivariate regression analysis on income data, with specific interest in what variables were significant drivers of the high-income category (top 25%). The lowest and highest 3% income extremes were removed prior to this analysis to eliminate unique situations and speak to a broader interpretation of the results. Statistical analyses were performed on the RUCA and income data sets only.

The graduating resident and program analyses were conducted separately and have been part of an ongoing effort by one of the Task Force members, Andrew J. Tompkins, MD, MBA, to account for resident

and program growth. In the springs of 2021-2023, ever since the osteopathic programs were included in the National Residency Match Program (NRMP) and Accreditation Council for Graduate Medical Education (ACGME), each program and its residents were checked using a combination of departmental websites, the ACGME page for that program, Doximity, and Otomatch.com. Where the departmental site did not describe specific graduation years or account for the research track with specificity, the latter two websites were used to augment this understanding. This allowed a full accounting of both a resident compliment by year and accounted for research years. New program accreditation was derived from the ACGME website for otolaryngology programs.

The limitations of the 2022 Workforce Survey are worth discussing. Our analysis is based on survey responses and are accurate to the degree recall is accurate. This limitation might be most pertinent in the Income section, though we tried to give leeway to this by providing income ranges rather than discrete amounts. Our understanding of the results is also shaped by the number and quality of the questions. Importantly, the survey was predominantly taken by Academy members. Therefore, the responses are generalizable to the degree that membership and those choosing to respond to our survey are representative of the broad array of otolaryngologists in different practice settings. However, we tried to overcome this issue by breaking descriptive data into categories (e.g., practice type) where relevant/possible.

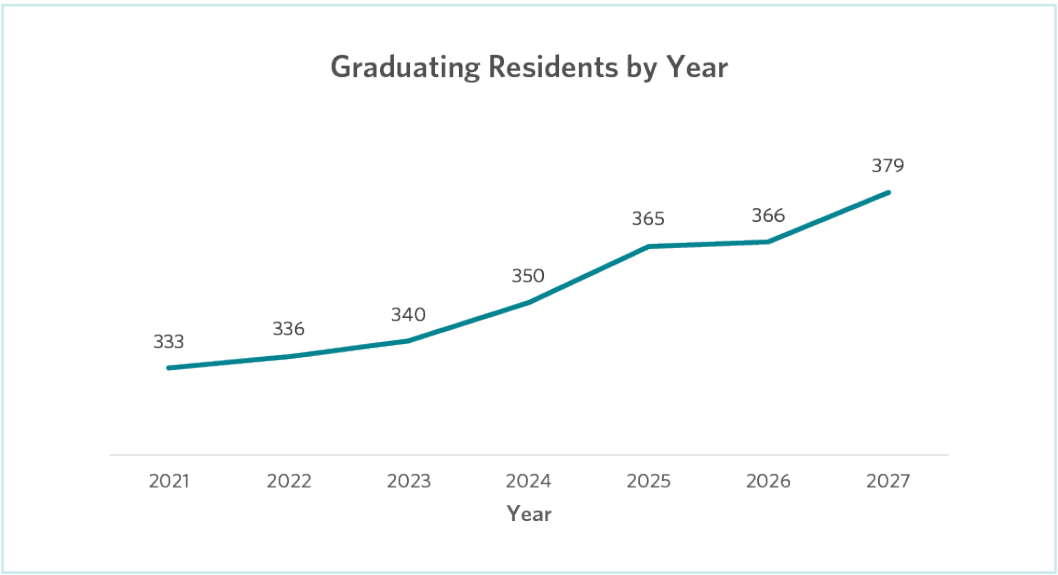
GLOSSARY OF TERMS

American Academy of Otolaryngology–Head and Neck Surgery	AAO-HNS
American Board of Otolaryngology – Head and Neck Surgery	ABOHNS
Accreditation Council for Graduate Medical Education	ACGME
American Medical Association	AMA
Advanced Practice Provider(s)	APP(s)
American Urological Association	AUA
Full-time Equivalent	FTE
Graduate Medical Education	GME
Multispecialty Group	MSG
Operating Room	OR
Rural-Urban Commuting Area	RUCA
Single-specialty Group	SSG
Veterans Affairs	VA

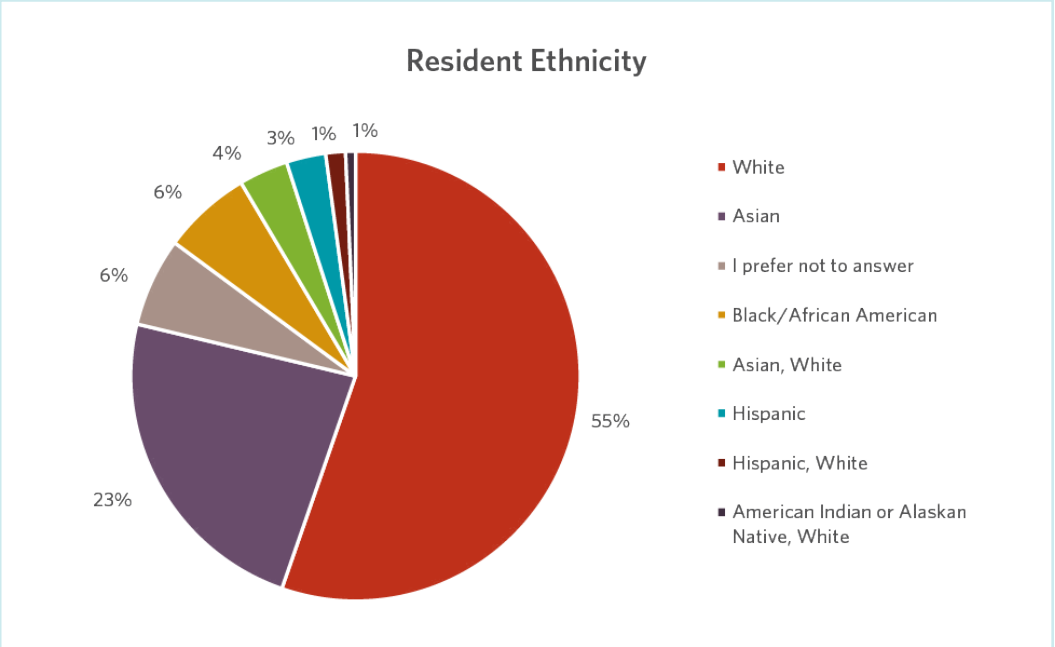
TRAINING, RESIDENTS, AND FELLOWS

Graduate Medical Education Training

2022-2023 ACGME-approved Otolaryngology Training Programs	131
Total 2022-2023 ACGME Otolaryngology Residents	1,830

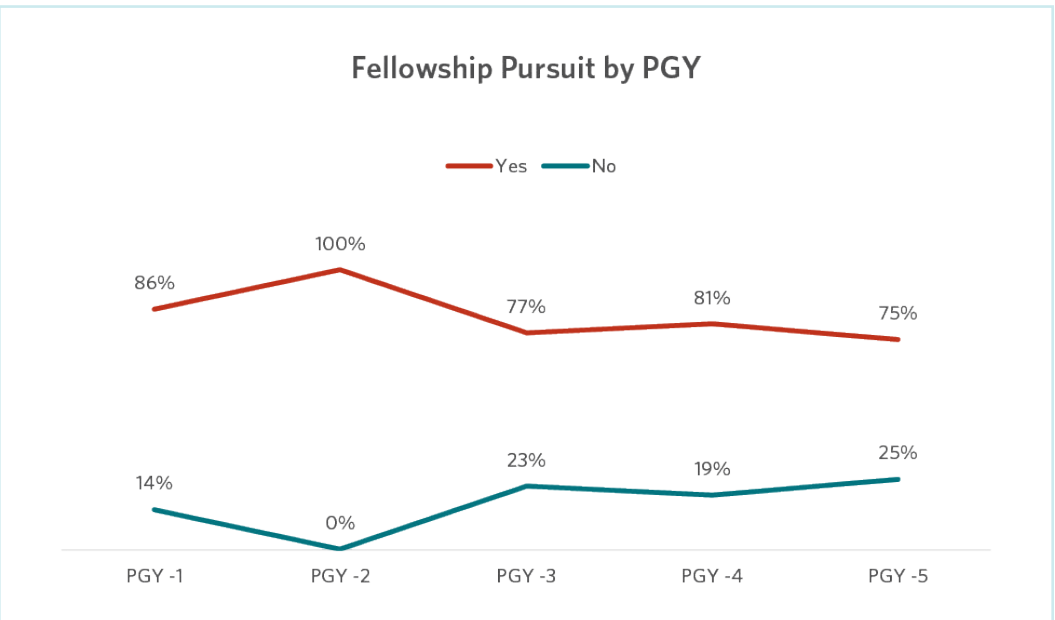


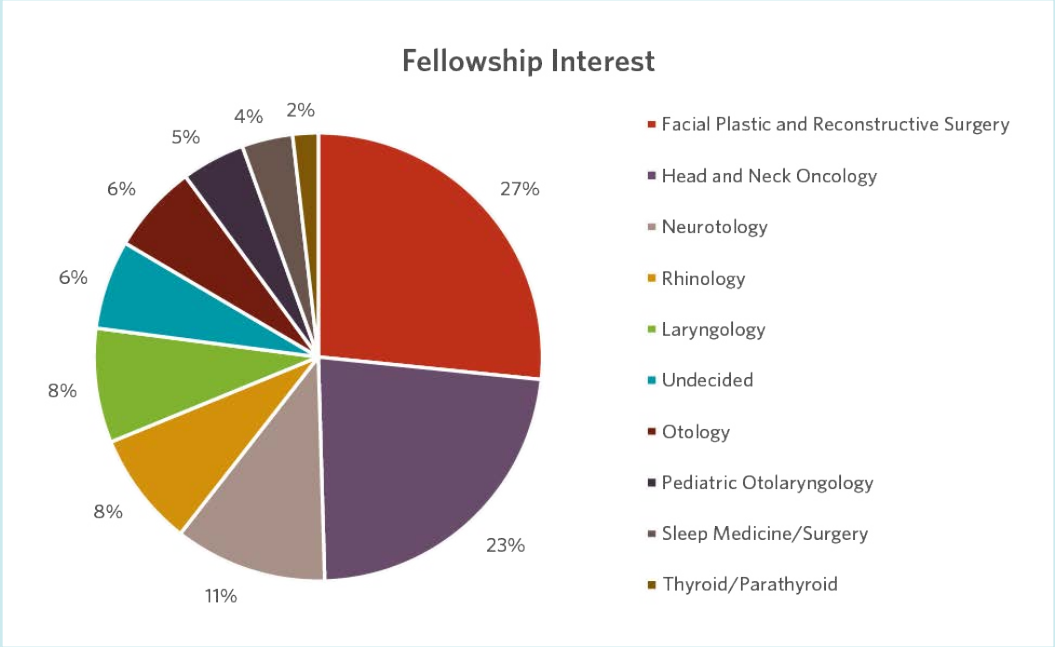
Current Residents

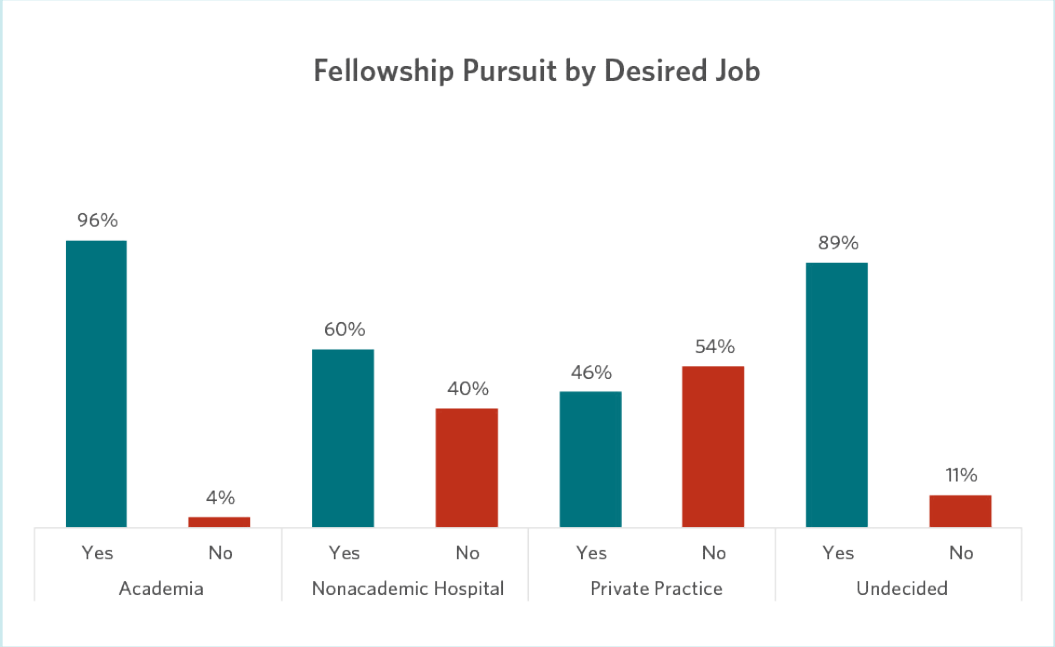


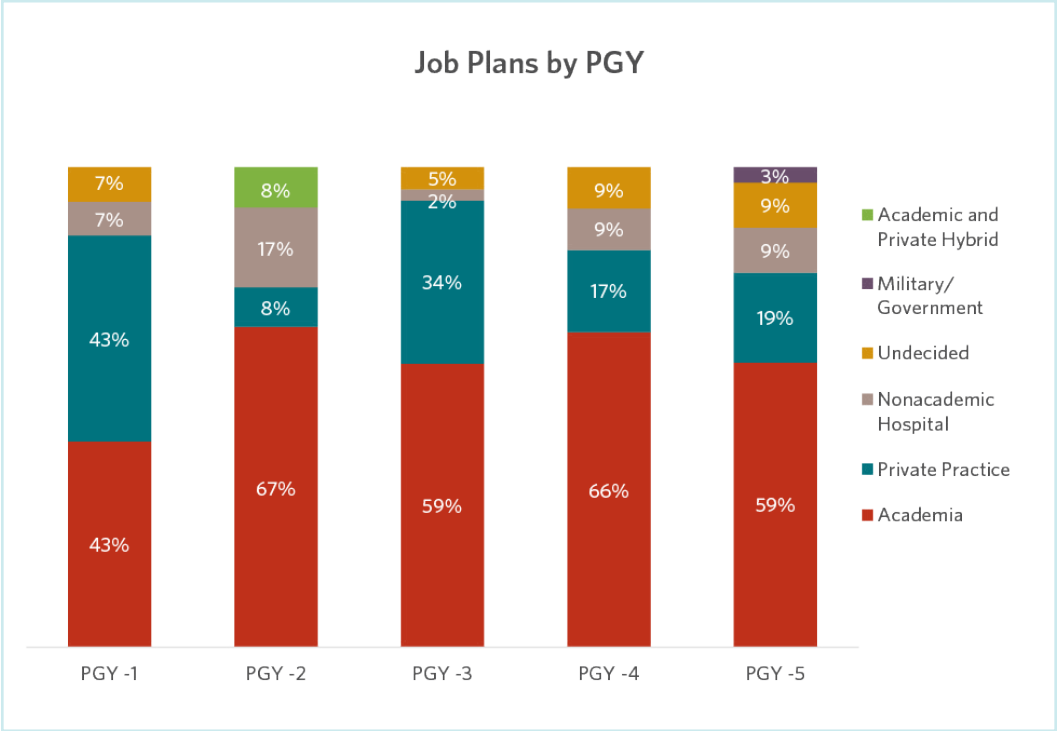
Gender of Respondents	
Male	49%
Female	51%

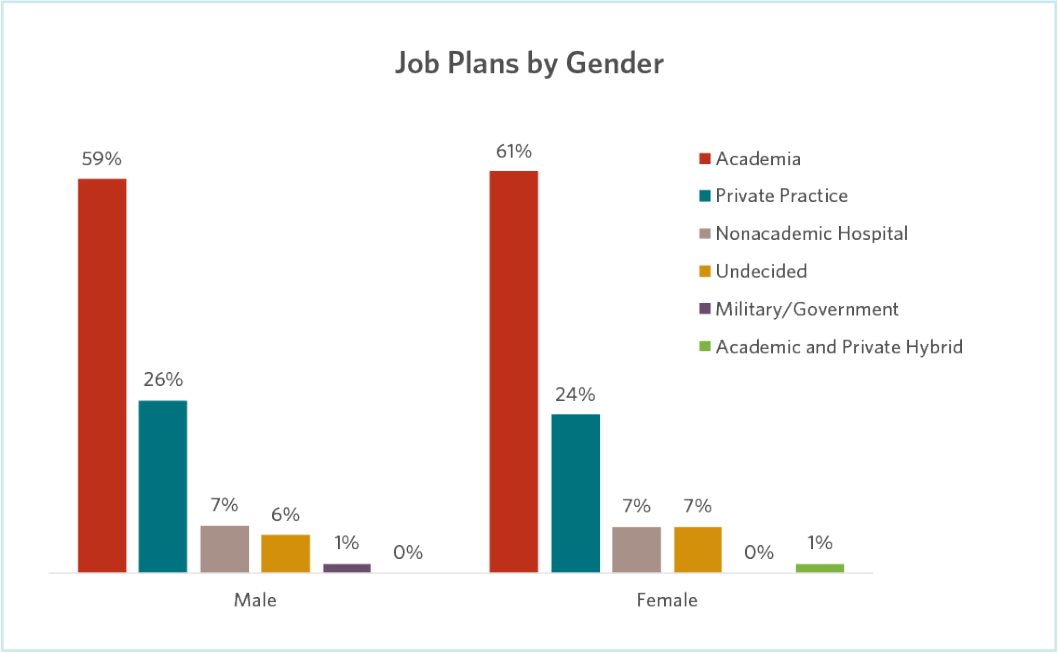
Plans to Pursue Fellowship by Gender	
Male	81%
Female	79%



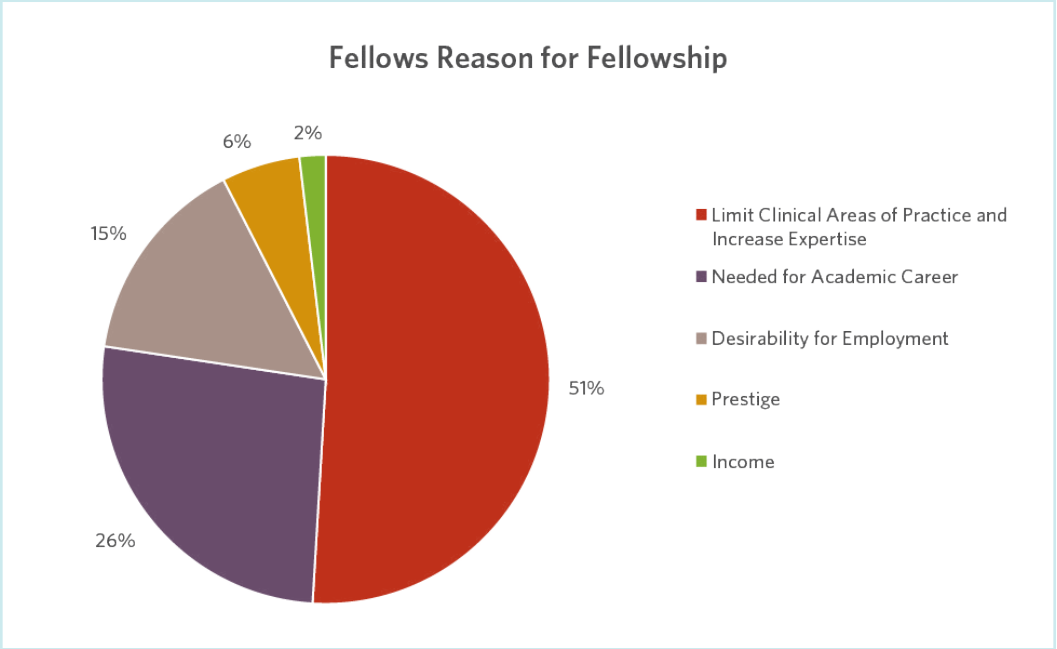

Fellowship Interest
27%
23%
11%
8%
8%
6%
6%
5%
4%
2%
Facial Plastic and Reconstructive Surgery
Head and Neck Oncology
Neurotology
Rhinology
Laryngology
Undecided
Otology
Pediatric Otolaryngology
Sleep Medicine/Surgery
Thyroid/Parathyroid

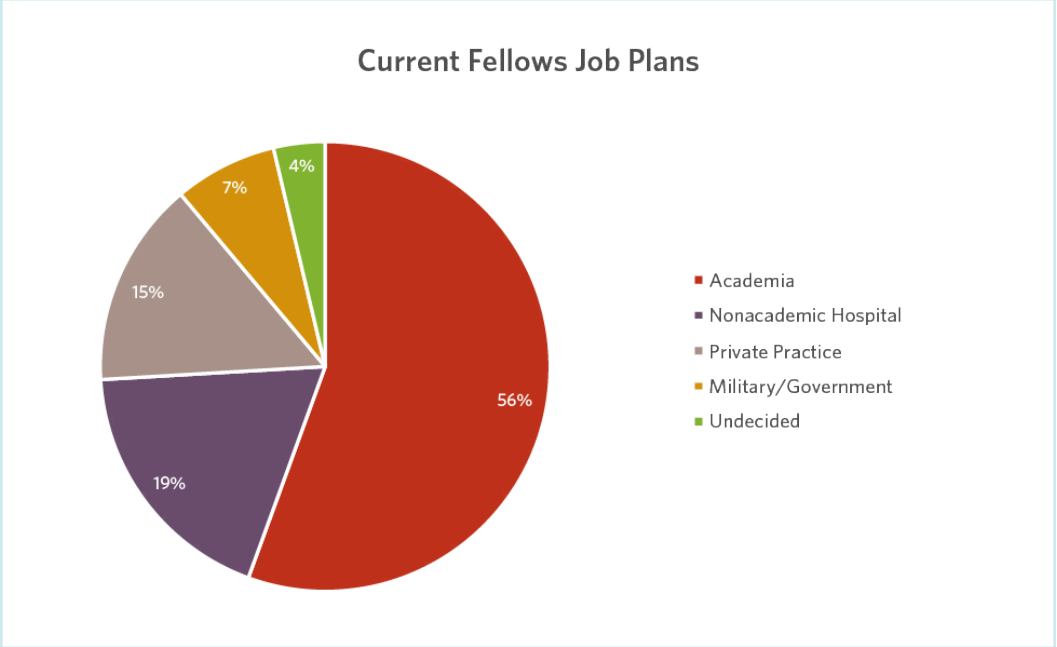

Fellowship Pursuit by Desired Job
96%
4%
60%
40%
46%
54%
89%
11%
Yes
No
Academia
Yes
No
Nonacademic Hospital
Yes
No
Private Practice
Yes
No
Undecided


Job Plans by PGY
7%
7%
43%
43%
8%
17%
8%
67%
5%
2%
34%
59%
9%
9%
17%
66%
3%
9%
9%
19%
59%
PGY -1
PGY -2
PGY -3
PGY -4
PGY -5
Academic and Private Hybrid
Military/ Government
Undecided
Nonacademic Hospital
Private Practice
Academia


Job Plans by Gender
59%
26%
7%
6%
1%
0%
61%
24%
7%
7%
0%
1%
Male
Female
Academia
Private Practice
Nonacademic Hospital
Undecided
Military/Government
Academic and Private Hybrid

Current Fellows





Graduate Medical Education Commentary

Since 2017, one to two new otolaryngology residency training programs have been established annually, with the exception of 2022, during which four new programs arose. In all, 13 new programs have been established in the past seven years; nine of which are located in the Northeast. This growth brings the total number of ACGME-approved otolaryngology training programs to 131 programs for the 2022-2023 academic year.

With the establishment of new training programs, the pool of graduating residents will continue to expand. While roughly six DO programs shuttered with the ACGME merger, we have seen recent and expected growth that has far outpaced these losses. Otolaryngology saw 333 residents graduate in 2021, increasing to a projected 379 graduates in 2027; this averages out to a 2.18% annual growth rate. This growing supply of new otolaryngologists will need to be closely tracked longitudinally, along with otolaryngology workforce demands, as our patient population and demand needs transform over time.

Residents and Fellows Analysis Commentary

Seventy-five percent (75%) of graduating residents plan to pursue fellowship. The most common reason for fellowship training is to refine an area of clinical expertise. The majority of resident survey respondents seeking fellowship subspecialty training are interested in facial plastic and reconstructive surgery (27%) and head and neck oncology (23%). Residents interested in facial plastic and reconstructive surgery should take note of the fact that this fellowship is at the low end of the perceived demand need by practicing otolaryngologists, as shown later in this report. Most residents intending to pursue jobs in academics, nonacademic hospitals, or in an undecided practice setting plan on further fellowship training, while the majority of residents going into private practice do not.

Fifty-nine percent (59%) of graduating residents pursue jobs in academia versus 19% who go into private practice. Of graduating fellows, 56% pursue academic appointments, while 19% and 15% of responding fellows take jobs in the nonacademic hospital and private practice settings, respectively. Interestingly, resident interns are more equally divided as they consider future career plans, with 43% of PGY-1 residents contemplating academic or private practice jobs. Residents will naturally find it difficult to escape the bias of academia, but they may benefit from earlier, structured exposure to alternative practice models/settings in order for residents to make informed career decisions in their formative training years. Given the low response rate among trainees (<10%), we will be engaging them more robustly in future iterations to ensure we are as accurate as possible with understanding their needs.

NUMBER OF PRACTICING OTOLARYNGOLOGISTS

What may seem like an easy task of knowing how many actively practicing physicians exist in one of the smallest specialties is anything but. One can look back at our own workforce literature and find very different supply numbers for the same or similar time periods, depending on the study and database used. While several databases exist that show our supply numbers, none are particularly accurate, or at least to the degree that we want or need them to be.

To embark on a deeper understanding of this topic, one of the Task Force members, Andrew J. Tompkins, MD, MBA, and acknowledged contributor, Meredith Lehoe, DO, combined four publicly available/searchable databases for the state of Ohio (National Provider Identifier [NPI] Database, Ohio Medical License Database, Medicare Provider Database, and the ABOHNS providers [searchable online by state and first initial of last name to create a list]) and the AAO-HNS membership list for Ohio (approved by AAO-HNS for use). These databases were downloaded in April 2022. Each individual in each database was then researched to see if they were actively practicing. This process extended from April to May 2022. Active practice was determined by finding their name on their practice website, but also by calling available practice phone numbers based on the NPI database and Google search to verify active practice in cases where practice information was not available.

This process revealed that as of May 2022, Ohio had 360 actively practicing otolaryngologists, with 20 more marginally attached with primary practices in other adjacent states. The following table shows the supply each database would have suggested and, of the 360 actively practicing and based in Ohio, how many were identified by the given database. Problems encountered with each database are also described.

DATABASE	SUPPLY SUGGESTED	NUMBER FOUND OF 360	DATABASE ISSUES
NPI	568	325	*Not updated by taxonomy or state, retirement not well accounted for*
Ohio Medical License	529	330	*Many states don't have specialty data, some of Ohio's specialty data inaccurate, many not practicing in Ohio but hold license, retirement not well accounted for*
Medicare	361	313	*Only included if billing Medicare in last six months (pediatric and facial plastic and reconstructive surgery most affected), taxonomy accuracy*
ABOHNS	361	290	*Osteopathic information not included, national or even state access moving forward is limited*
AAO-HNS	275	257	*Not all actively practicing are members, some were retired, some states incorrect*

Notably, the Ohio otolaryngology supply number listed on the AMA Health Workforce Mapper was greater than 450, after taking out the known residents noted previously in this report and the approximate fellows in the state. Also, two separate national estimates of actively practicing otolaryngologists provided by two separate AMA Masterfile licensees differed by nearly 1,000, making use of these data questionable. This should give us pause when relying on the AMA Masterfile database, which has been the most widely used in our previous workforce studies.

Despite the problems with using any one database, over 98% of actively practicing otolaryngologists are captured by combining the NPI, Medicare, and AAO-HNS databases, but this will produce significant overage, largely due to the NPI database not tracking retirement well. Therefore, the best we can do moving forward to know our workforce supply is combine these databases, perform sampling to assess for active practice, and estimate a range rather than provide a pinpoint estimate we accept as the truth.

Knowing our supply numbers likely has the most utility with respect to applying sampling percentages, such as those obtained in this report, in order to understand the entire market and perhaps make medium-term projections.

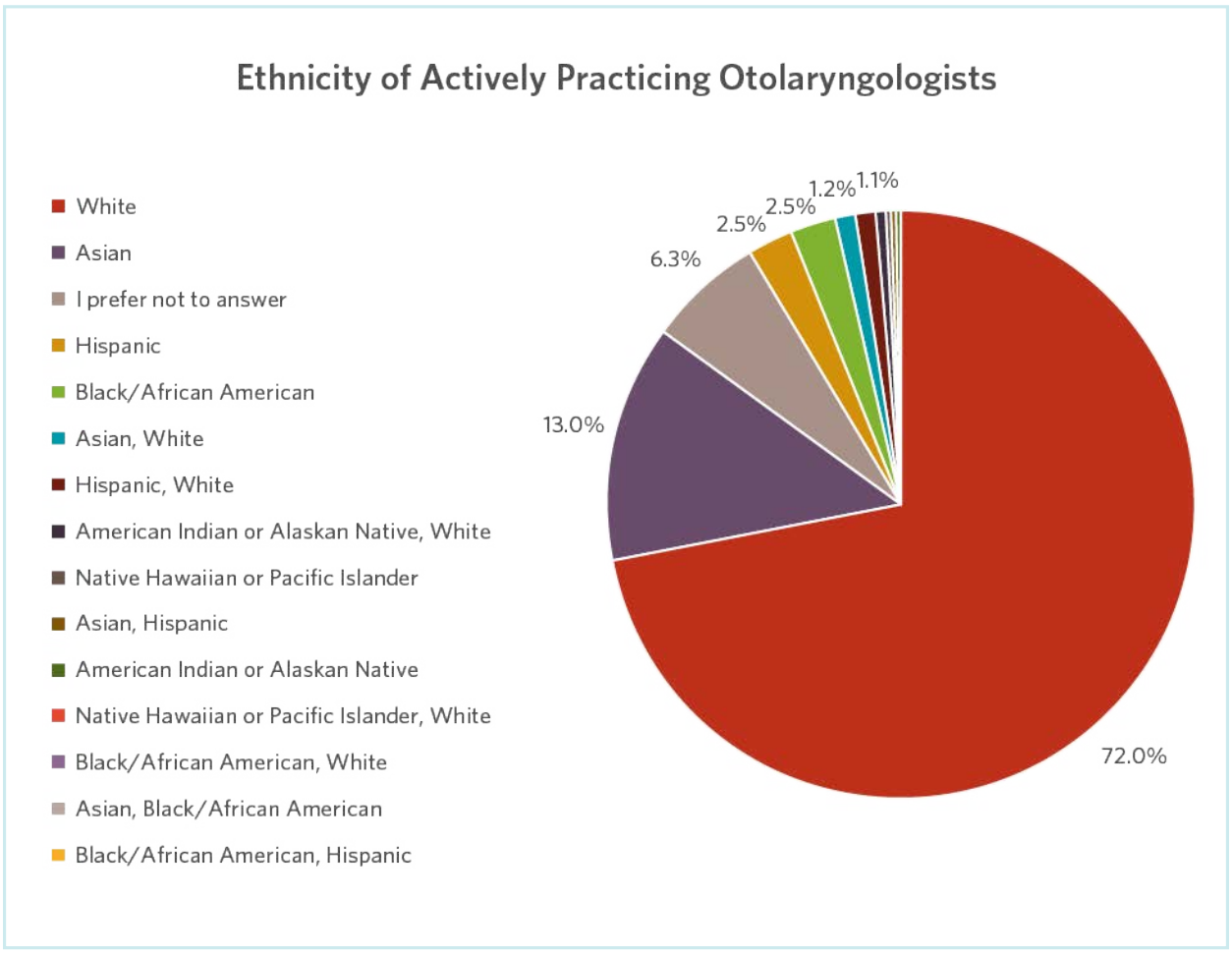
This exercise also begs the question of what we are trying to accomplish by knowing our supply numbers, or approximate the historically utilized supply per 100,000 population. Ultimately these numbers seek to understand or estimate one factor—access. In other words, do we have enough physicians to provide for patients? From a patient's point of view, these supply metrics do not matter. A patient cares about whether they can be seen soon, what their wait time is, how far they have to drive to be seen, if the physician they are going to see can address their problem adequately, and how far they might have to travel to find someone who can.

Also, input variables affecting a given supply's and demand's capacity to provide (receive) care change over time and are geographically distinct, making supply numbers incomparable over time from an access point of view. The upshot is that while we seemed to have broken the code of the database/supply accuracy issue, the real task is understanding our access from the patient's perspective as we move forward, and in a geographically nuanced way. In doing so, we can then hope to accurately understand if we are truly providing equitable access to all Americans.

PRACTICING OTOLARYNGOLOGIST DEMOGRAPHICS

Gender of Respondents		
Male	Female	Other
77.3%	22.6%	0.1%

Age of Respondents	
Mean	51
Median	51



Demographics Commentary

When evaluating our demographics, we first must recognize that these responses reflect, for the most part, AAO-HNS members. While a majority of AAO-HNS members are in private practice (as shown later), those in the academic community are more likely to be AAO-HNS members, based on information obtained from the previously described supply database analysis. And based on the generational practice patterns shown later, the academic community is also skewed to a younger age. These apparent realities may indicate that the average age of practicing otolaryngologists is indeed higher than age of 51 described here. Despite this potential reality, what will be more interesting and revealing is tracking these data moving forward and comparing them over time, especially in the context of our rising trainee numbers previously noted.

We also are more heavily weighted toward the male gender and white ethnicity, but our demographic makeup is set to change over time based on resident demographic data previously described.

DEGREES, TRAINING, AND FELLOWSHIP ANALYSIS

Primary Medical Degree			
MD	DO	Other	Multiple Degrees
96.6%	2.8%	0.6%	19%

Was your medical school in the United States?	
Yes	94.1%
No	5.9%

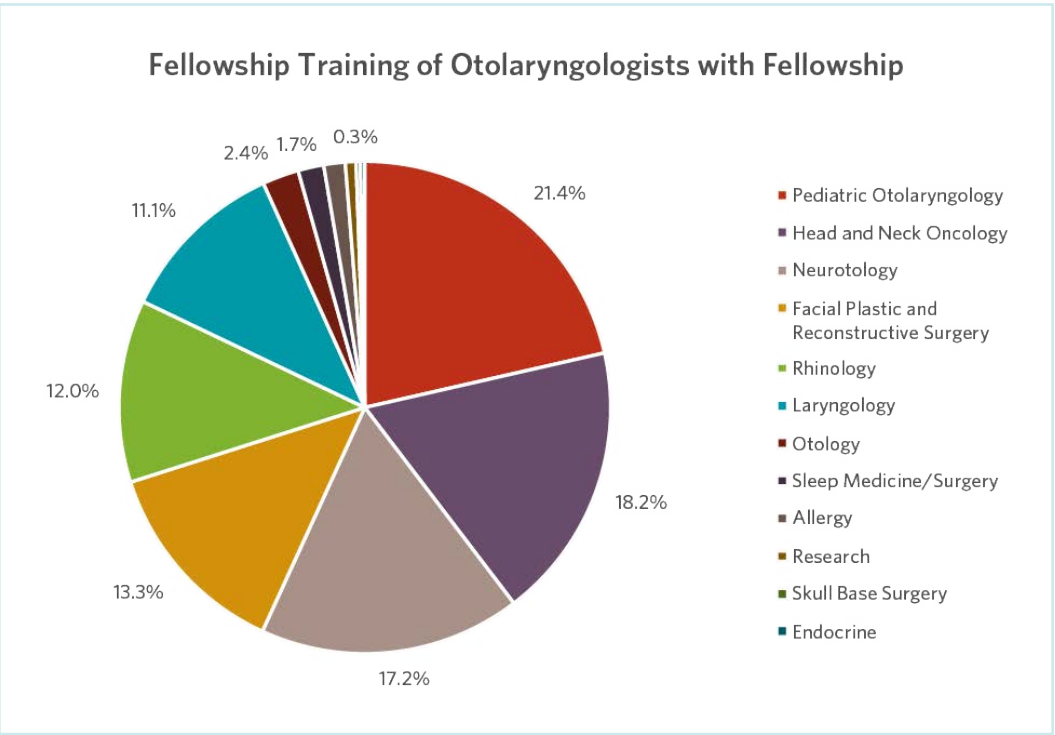
Was your otolaryngology residency in the United States?	
Yes	97.5%
No	2.5%

Any Board Certification Below? **98%**

American Board of Otolaryngology - Head and Neck Surgery	
Yes	96.5%
No	3.5%

American Osteopathic Board of Ophthalmology and Otolaryngology - Head and Neck Surgery *(If No to above)*	
Yes	44%
No	56%

Have you completed a fellowship?	
Yes	48.4%
No	51.6%



Fellowship Utilization

Overall Fellowship Utilization

Fellowship	Total Responses	Mean Utilization	Median Utilization
Allergy	10	25%	20%
Facial Plastic and Reconstructive Surgery	93	57%	53%
Head and Neck Oncology	129	68%	78%
Laryngology	79	76%	88%
Neurotology	122	89%	98%
Otology	17	60%	58%
Pediatric Otolaryngology	152	90%	98%
Rhinology	85	75%	83%
Sleep Medicine	12	57%	63%

Academics Fellowship Utilization

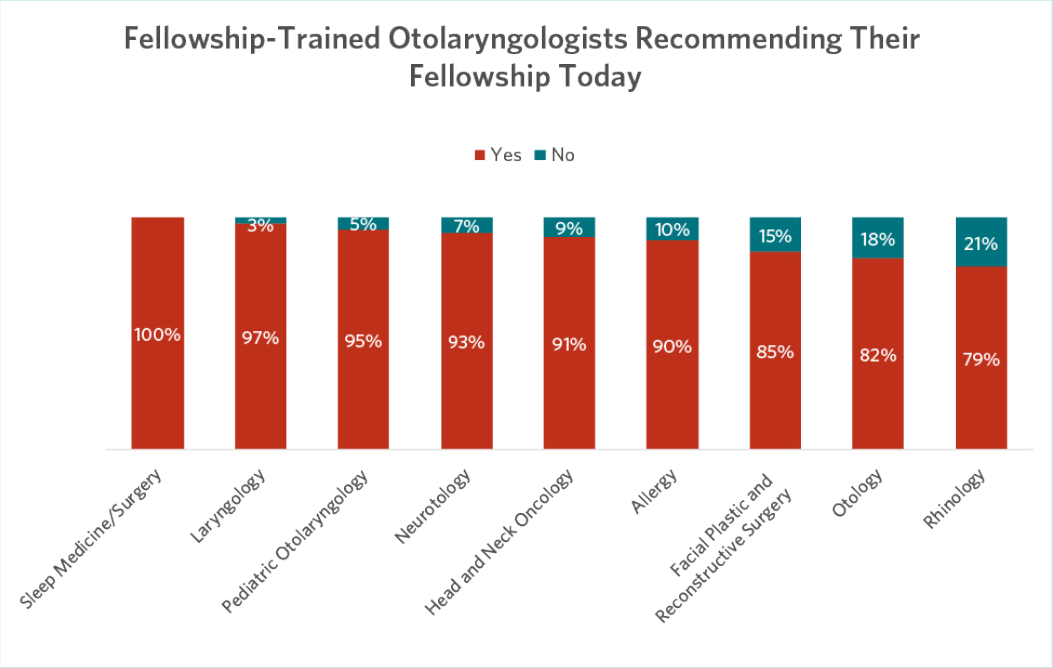
Fellowship	Total Responses	Mean Utilization	Median Utilization
Facial Plastic and Reconstructive Surgery	31	79%	93%
Head and Neck Oncology	89	76%	83%
Laryngology	46	87%	93%
Neurotology	76	91%	98%
Pediatric Otolaryngology	110	93%	98%
Rhinology	49	87%	93%

Private Practice Fellowship Utilization

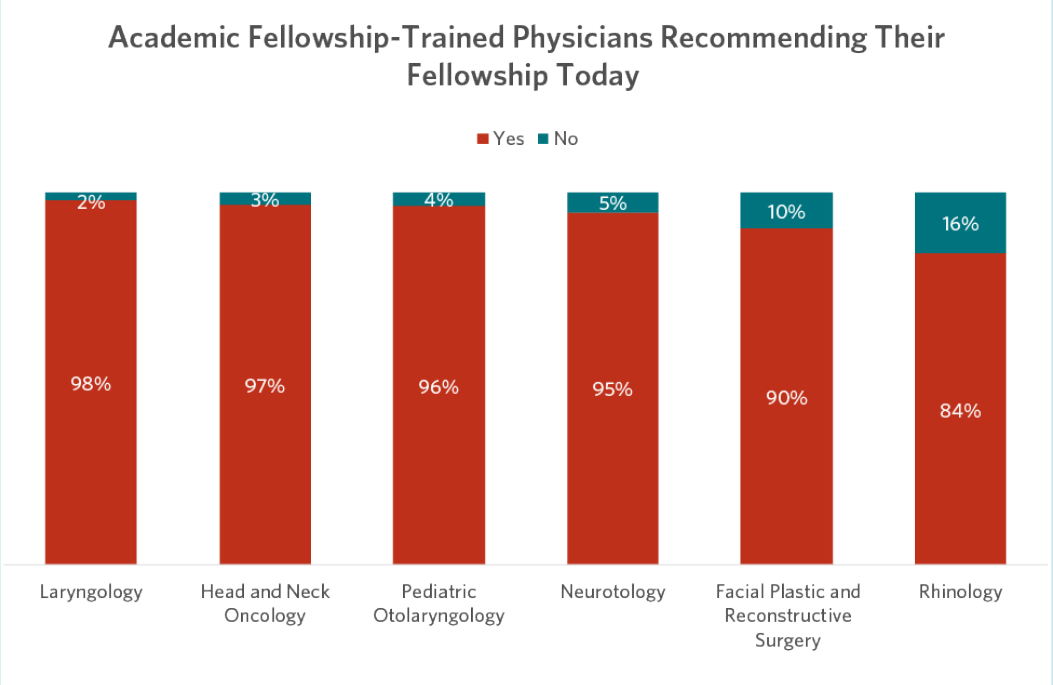
Fellowship	Total Responses	Mean Utilization	Median Utilization
Facial Plastic and Reconstructive Surgery	55	45%	38%
Head and Neck Oncology	24	48%	40%
Laryngology	25	56%	53%
Neurotology	37	87%	98%
Otology	12	61%	63%
Pediatric Otolaryngology	22	74%	95%
Rhinology	21	55%	53%

Fellowship Recommendation

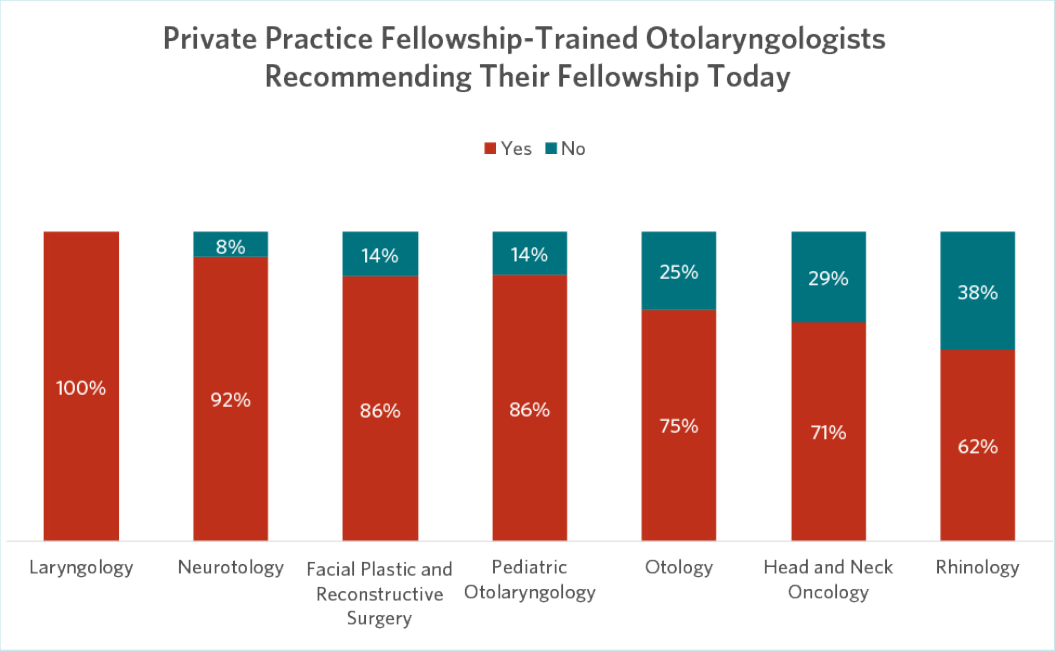
Overall Recommendation



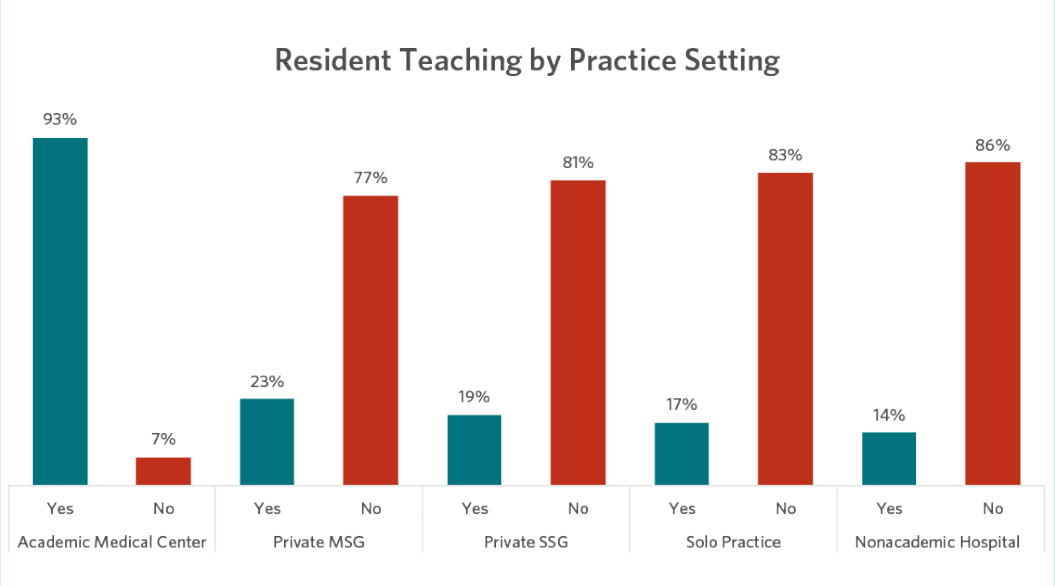
Academics Recommendation



Private Practice Recommendation



Participation in Resident Teaching/Training



Degrees and Training Commentary

The vast majority of otolaryngologists hold a doctor of medicine (MD) degree. Since the loss of roughly six doctor of osteopathic medicine (DO) residency programs with the ACGME merger and with the previously described growth in MD residency programs, we are likely to witness further skewing toward the MD degree holder. Therefore, future research opportunities should include whether or not our pipeline is constructed in the most efficient way to evaluate talent across both schools of training.

U.S.-based otolaryngologists are largely trained in the U.S., and roughly 20% have multiple advanced degrees. Ninety-eight percent (98%) are board certified. Just under half of respondents had fellowship training, with greater than 93% of fellowships consisting of pediatric otolaryngology, head and neck oncology, neurotology, facial plastic and reconstructive surgery, rhinology, and laryngology.

In terms of training the next generation of clinicians, academia expectedly dominated this arena, but, importantly, between 14%-23% of otolaryngologists in other practice settings are involved in training residents. The diverse array of practice settings in which trainees receive education will be important to follow, especially since our specialty is still largely comprised of private practitioners. Are our trainees getting diverse exposure to these practice settings so as to inform better decision-making?

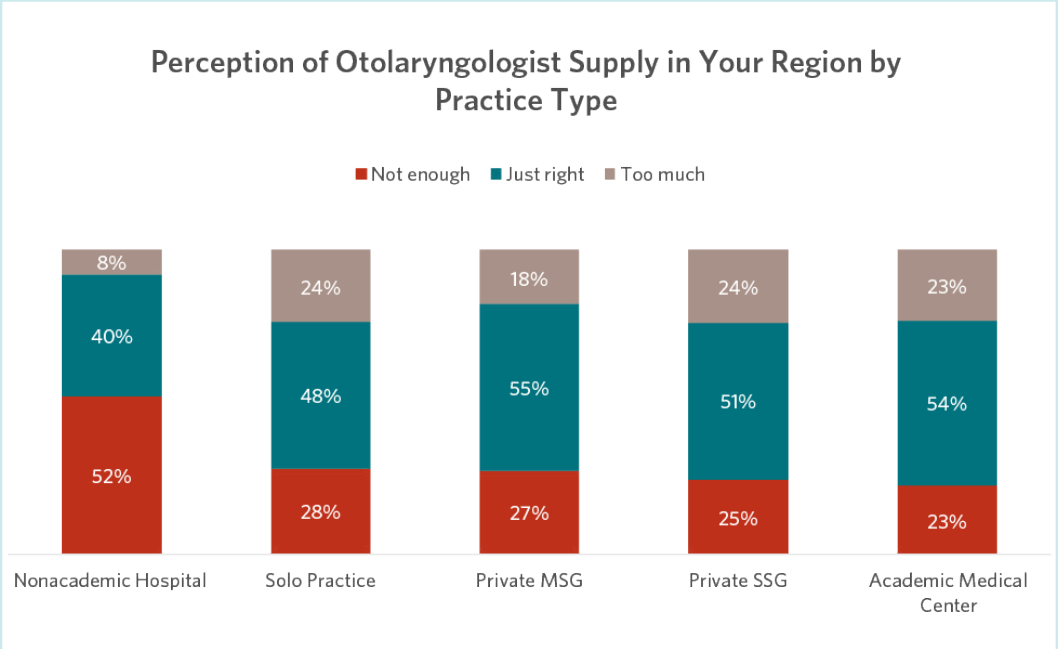
Fellowship Utilization and Recommendation Commentary

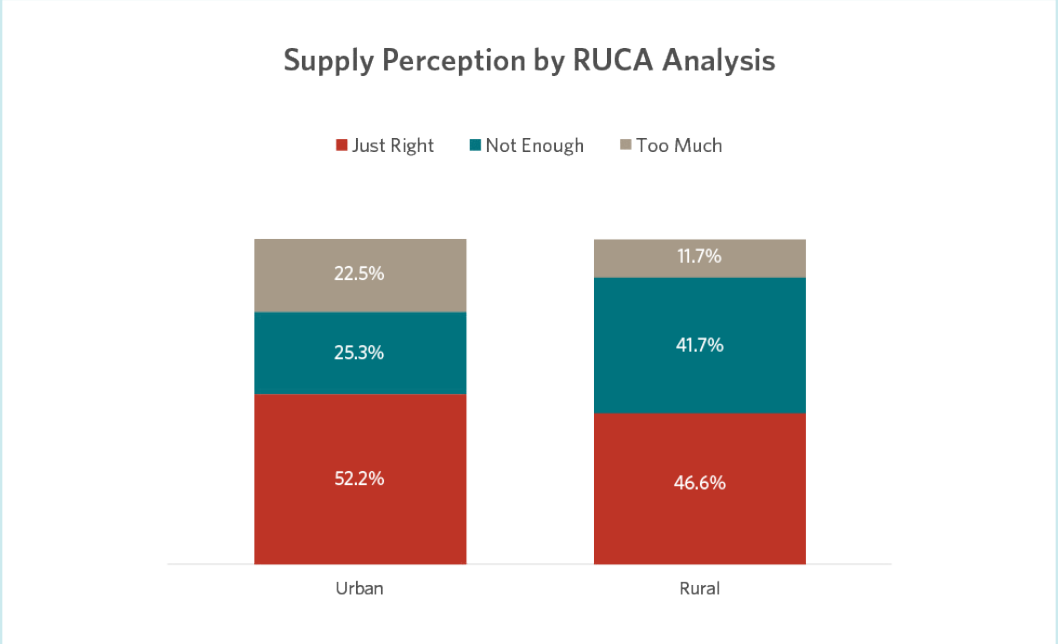
We attempted to provide fellowship utilization data so that trainees and medical students can make more informed decisions, especially with so many seeking fellowship training. However, our question failed to capture the underlying reality, at least in some instances. For example, these data would have a trainee believe that only 2% (median) of one's practice in pediatric otolaryngology falls outside the scope of that required by fellowship training. So do we believe that pediatric otolaryngologists are only devoting 2% of their time to care and skill sets mastered in residency, such as tubes, tonsillectomy, etc.? The truth is likely far different. So while these data are interesting, they highlight the need to ask better questions so as to inform trainees accurately.

What seems to be the case, however, is that one generally experiences a lower fellowship utilization in private practice than in academia, and correlating with this drop was, in many instances, a declining sentiment to recommend one's fellowship. Neurotology bucked this trend, however, and showed both high utilization in academia and private practice as well as high fellowship recommendations across both practice settings. Also, while laryngology saw a utilization decline in private practice, laryngologists recommended their fellowship at the highest level in both settings.

We will need to revisit these and new questions in future survey iterations to ensure both accuracy and transparency for those earliest in the pipeline.

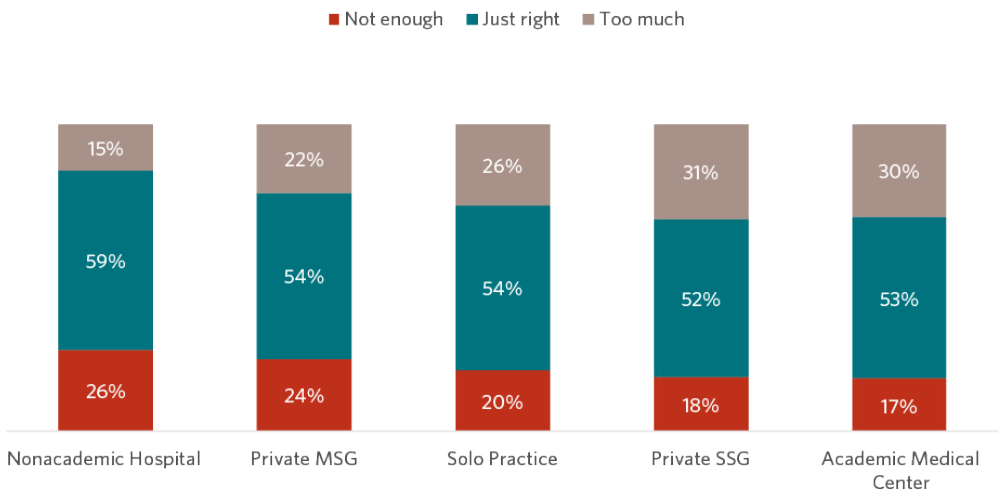
SUPPLY PERCEPTION



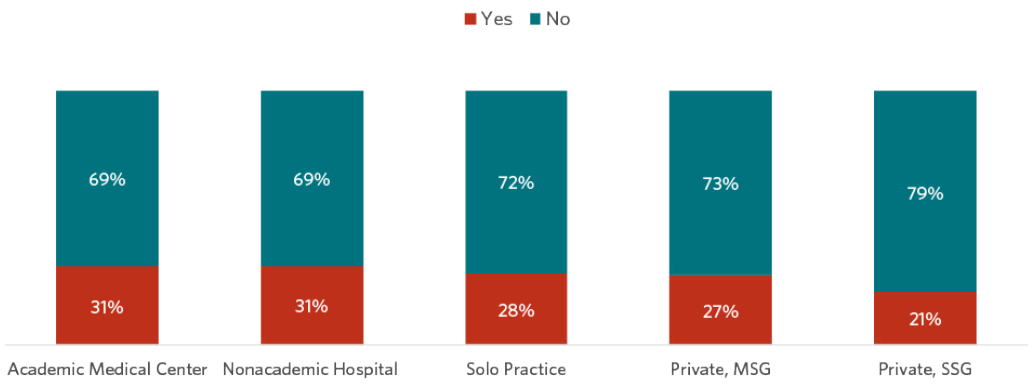


***p* value <0.001**, analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any practice zip code

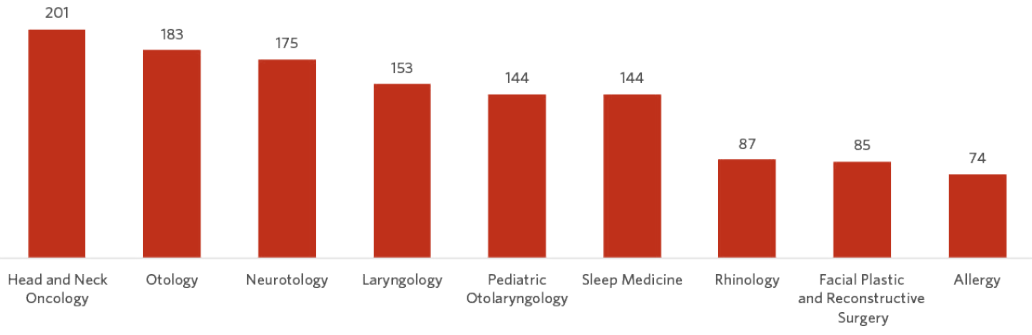
Fellowship Supply Perception in Your Region by Practice Type



Any Fellowship Need in Your Referral Region by Practice Type



Relative Frequency (Responses) of Fellowship Need Perception



Supply Perception Commentary

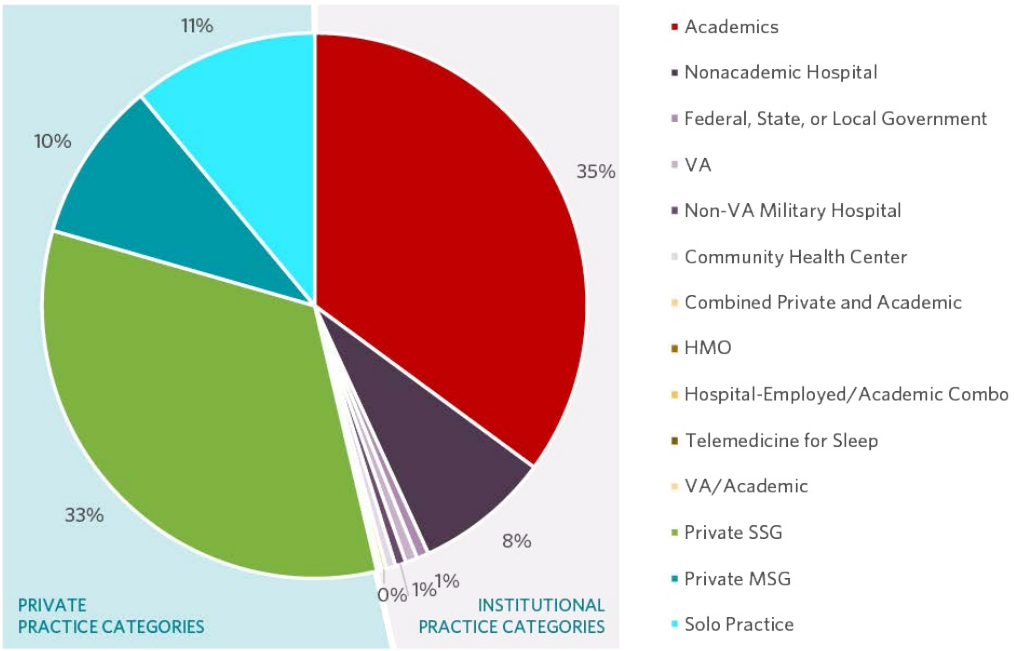
Nonacademic hospital-employed otolaryngologists were distinct from those in other practice settings, with the majority of them stating that their region had an undersupply of otolaryngologists. This outlier result is likely explained by multiple factors unique to this practice setting, as seen in other chapters of this report. These factors likely include call coverage, rurality and possible recruitment difficulties, job fluidity, and drivers making these otolaryngologists want to retire earlier at the highest rates. When supply perception is evaluated from the perspective of whether or not one's practice is urban versus rural, the rural practicing otolaryngologists had significantly different thoughts. Broadly speaking, our supply is lacking in more rural settings. Future research and practice models should evaluate how to optimize care delivery for these patients.

Just over 50% of otolaryngologists feel that the number of fellowship-trained surgeons is just right in their region, but on either side of that sentiment, significant segments perceive that they have either too many or too few fellowship-trained otolaryngologists in their region. Academic centers trend toward the idea that there are too many while hospital-employed physicians feel not enough exist in their region.

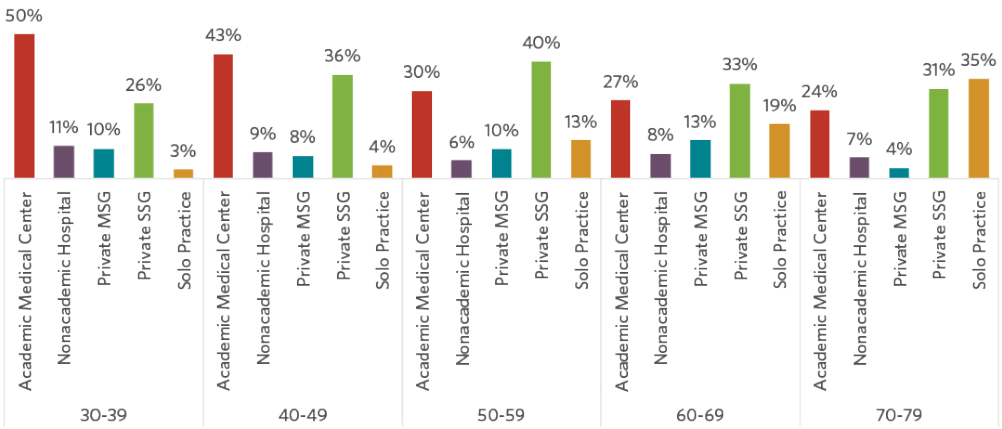
Head and neck fellowship-trained otolaryngologists are cited as the greatest need. As noted in the next chapter, head and neck oncologists are highly concentrated in urban settings. The need cited may represent the fact that many patients have to travel long distances to seek care at tertiary academic centers. Newer care models seeking to improve head and neck cancer access may be emerging in certain markets and deserve additional research. Otology, neurotology, and laryngology are also perceived needs. Future inquires will seek to understand whether these needs are driven by wait times or distance. Interestingly, facial plastic and reconstructive surgery seems to be in the minority of perceived fellowship need, and yet this fellowship is being pursued above all others by current residents. Caution may be warranted regarding saturation, given these data and the multiple specialty pathways toward facial plastic and reconstructive surgery training.

PRACTICE LOCATIONS AND SETTING

Distribution of Practice Environment by Academy Member Respondents



Relative Practice Setting Dispersion for Largest Practice Settings by Decade



Solo Practice Evolution to Facial Plastic and Reconstructive Surgery

Decade	Facial Plastic and Reconstructive Surgery: Percent of All Fellowship-Trained Physicians	Facial Plastic and Reconstructive Surgery: Percent of All Physicians
30-39	13.9%	8.1%
40-49	11.2%	6.6%
50-59	16.5%	6.8%
60-69	12.3%	4.8%
70-79	10.0%	3.6%
Total	**13.3%**	**6.5%**

Decade	Facial Plastic and Reconstructive Surgery: Percent of All Fellowship-Trained Solo Practice Physicians	Facial Plastic and Reconstructive Surgery: Percent of All Solo Practice Physicians
30-39	75.0%	37.5%
40-49	85.7%	40.0%
50-59	45.0%	16.7%
60-69	18.8%	5.4%
70-79	0.0%	0.0%
Total	**37.5%**	**13.8%**

Urban vs Rural Breakdown by Gender, U.S. Region and Practice Setting

Gender	Urban	Rural	*p* value
Male	85.7%	14.3%	
Female	92.9%	7.1%	0.001
Mean	**87.3%**	**12.7%**	

*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code

U.S. Region	Urban	Rural	*p* value
Midwest	80.2%	19.8%	
Northwest	94.0%	6.0%	
South	87.2%	12.8%	<0.001
West	87.7%	12.3%	
Mean	**87.3%**	**12.7%**	

*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code; see Appendix for state groupings into region (based on census grouping)

Primary Practice Setting	Urban	Rural	*p* value
Academics	38.4%	9.8%	
Private SSG	32.9%	40.2%	
Solo Practice	10.3%	13.4%	
Private MSG	8.9%	14.0%	<0.001
Nonacademic Hospital	6.6%	19.5%	
Other	2.9%	3.0%	
Total	**100.0%**	**100.0%**	

*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code; percentages may not total 100% due to rounding

Urban vs Rural Practice Divide for All Otolaryngologists

Smallest RUCA For Any Office Location (One Response per Physician)			
Urban vs Rural	**RUCA Code**	**RUCA Percent**	**Urban/Rural Percent**
Urban	1 Metropolitan area core	85.3%	87.4%
	2 Metropolitan area high commuting	1.9%	
	3 Metropolitan area low commuting	0.2%	
Rural	4 Micropolitan area core	8.1%	12.7%
	5 Micropolitan high commuting	0.4%	
	7 Small town core	2.6%	
	8 Small town high commuting	0.2%	
	10 Rural areas	1.4%	

*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code; percentages may not total 100% due to rounding

RUCA Distribution for All Office Locations			
Urban vs Rural	**RUCA Code**	**RUCA Percent**	**Urban/Rural Percent**
Urban	1 Metropolitan area core	88.3%	89.9%
	2 Metropolitan area high commuting	1.5%	
	3 Metropolitan area low commuting	0.1%	
Rural	4 Micropolitan area core	6.4%	10.1%
	5 Micropolitan high commuting	0.3%	
	7 Small town core	2.4%	
	8 Small town high commuting	0.1%	
	10 Rural areas	0.9%	

*Analyzed by the AUA as part of their RUCA analysis, based on RUCA code for every office zip code provided, meant to assess distribution of all patient access points; percentages may not total 100% due to rounding

Urban vs Rural Practice Divide by Fellowship Training

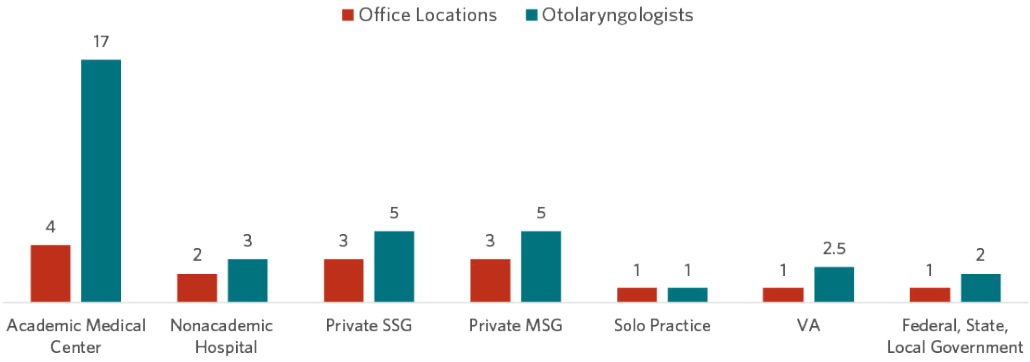
Fellowship Training	Urban	Rural	*p* value
No	80.9%	19.1%	<0.001
Yes	94.4%	5.6%	
Mean	**87.3%**	**12.7%**	

*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code

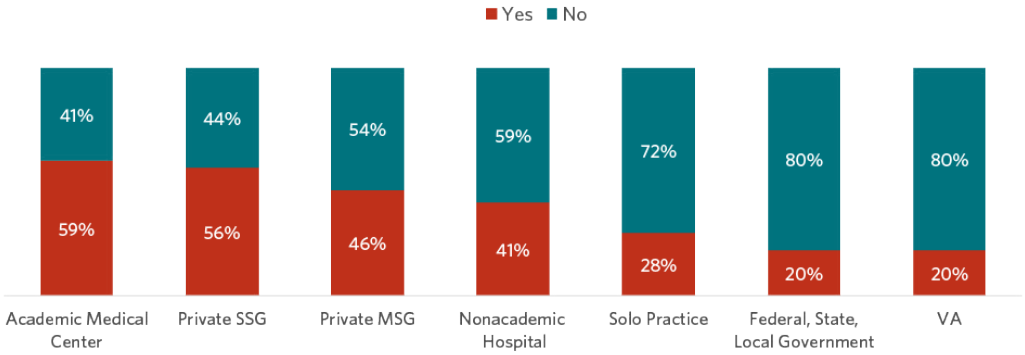
Fellowship Area	Urban	Rural	Total Count
Sleep Medicine/Surgery	100.0%	0.0%	9
Neurotology	97.3%	2.7%	111
Laryngology	97.1%	2.9%	70
Pediatric Otolaryngology	96.9%	3.1%	129
Head and Neck Oncology	95.4%	4.6%	109
Rhinology	93.9%	6.1%	66
Facial Plastic and Reconstructive Surgery	88.8%	11.3%	80
Otology	86.7%	13.3%	15
Other	72.2%	27.8%	18
Mean	**94.4%**	**5.6%**	**607**

*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code

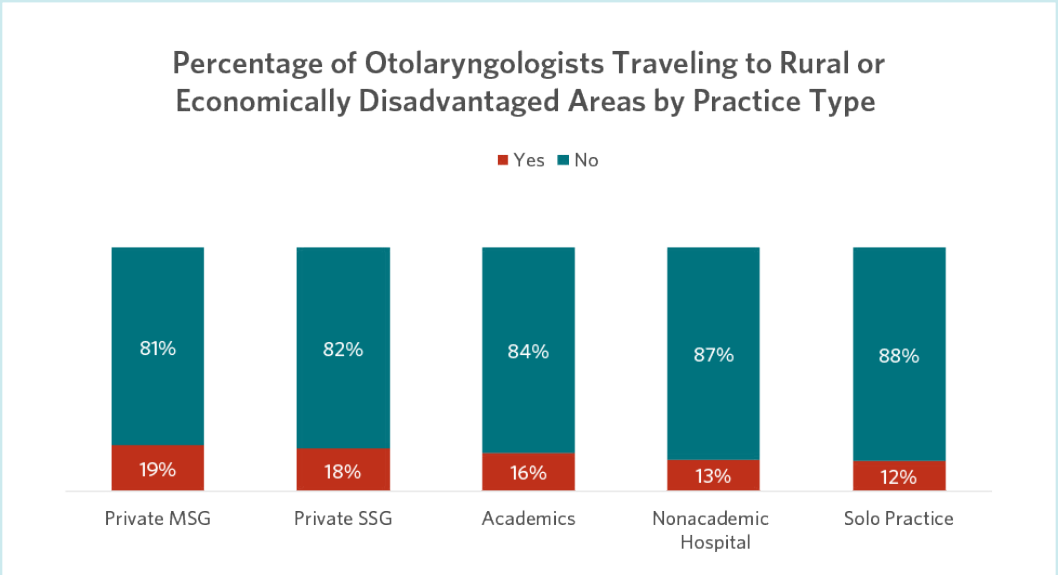
Median Office Locations and Otolaryngologists by Practice Type

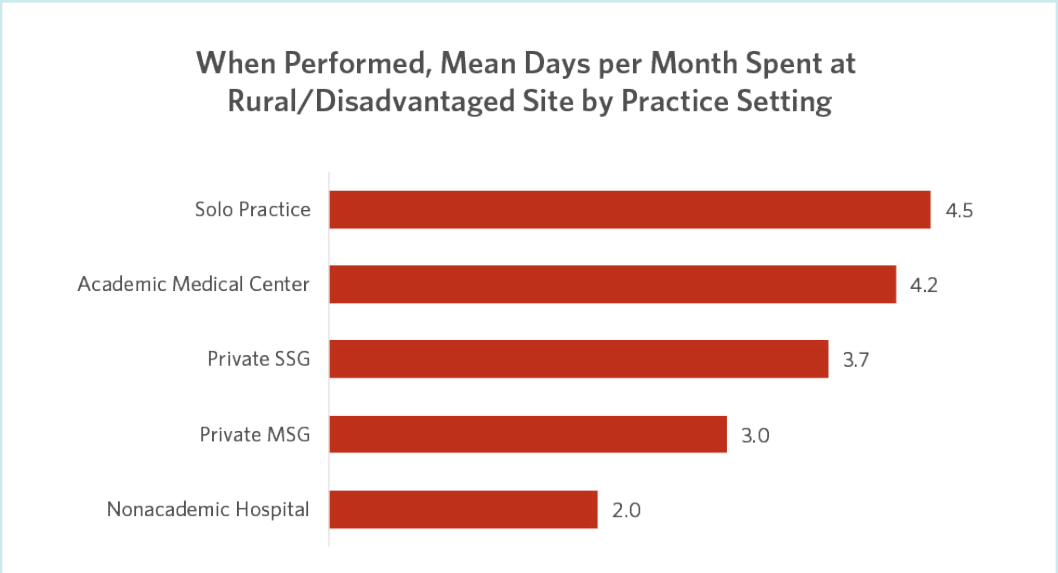


Proportion of Otolaryngologists Working at Multiple Office Locations by Practice Type



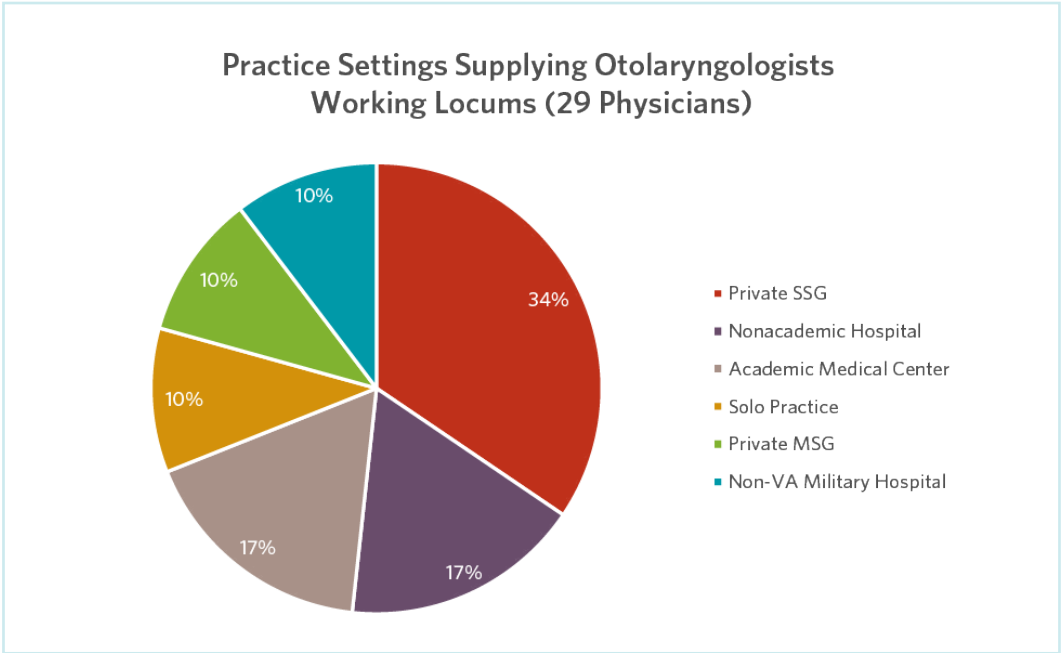
Otolaryngologists Practicing in More than One State	9%


Percentage of Otolaryngologists Traveling to Rural or Economically Disadvantaged Areas by Practice Type
Yes
No
81%
19%
82%
18%
84%
16%
87%
13%
88%
12%
Private MSG
Private SSG
Academics
Nonacademic Hospital
Solo Practice


When Performed, Mean Days per Month Spent at Rural/Disadvantaged Site by Practice Setting
Solo Practice
4.5
Academic Medical Center
4.2
Private SSG
3.7
Private MSG
3.0
Nonacademic Hospital
2.0

Satellite Clinic RUCA Analysis (All Office Locations)			
Urban vs Rural	**RUCA Code**	**RUCA Percent**	**Urban/Rural Percent**
Urban	1 Metropolitan area core	41.2%	47.4%
	2 Metropolitan area high commuting	6.1%	
Rural	4 Micropolitan area core	19.7%	52.6%
	5 Micropolitan high commuting	2.2%	
	6 Micropolitan	0.4%	
	7 Small town core	21.1%	
	8 Small town high commuting	1.8%	
	10 Rural areas	7.5%	

*Analyzed by the AUA as part of their RUCA analysis, based on RUCA code for every satellite office zip code provided, meant to assess distribution of all satellite clinic access points; percentages may not total 100% due to rounding



Practice Locations and Setting Commentary

The five most common practice settings are academics, private SSG, solo practice, private MSG, and nonacademic hospital, representing 97% of practicing otolaryngologists. Over half of respondents were in private practice, though due to AAO-HNS member sampling, this statistic may undercount the actual private practice market.

Despite the current representation, practice models may be shifting over time based on age and practice data. The two most contrasting groups are academics and solo practice. Academic practice appears to have increased with younger age groups, mirrored by a decline in solo practice. Whether or not early-career physicians start in academic/employed positions before moving on to other jobs in private or solo practice later in their careers is not addressed by these data; however, following this question moving forward will be vital to determine if these shifts mark a cyclical trend or whether academics is truly on the rise and solo practice is phasing out in our workforce. Recent research suggests the latter.[1]

Whether determined by job availability or preferences from job seekers, these practice shifts matter to our patients both from an access and cost perspective. As we show, rural practice access types are quite different from practice access in urban environments. To the degree practice shifts favoring academics maintain the current urban access predilection, our rural patients will have to travel further for care. And to the degree that these practice environment shifts are permanent and noncyclical, patients, on the average, will pay more for care.

Since solo practice seemed to markedly decline as a percentage of practice representation over the decades analyzed, we looked further into shifts within that segment. While we have seen a general trend toward higher overall facial plastic and reconstructive surgery representation as a percentage of all physicians, the trend is much more significant in the solo practice environment. The previously mentioned practice environment changes and significant growth in facial plastic and reconstructive fellowship-trained solo practitioners would seem to suggest that the market has evolved to disfavor solo practice while simultaneously supporting this environment for our facial plastic and reconstructive surgery-trained colleagues.

Males appear to be twice as likely to practice in at least one rural office. Whether this reflects practice type preferences, fellowship training, or otherwise, it is worthy of further exploration as our workforce follows the glide path toward gender parity.

Academic centers lead the way with the highest median number of providers (17) and office locations (4). On average, private SSG and MSG practices have five providers in each practice. Considering that solo practices typically have one provider in each practice and the overall practice dispersion previously described, the total number of otolaryngology practices is heavily skewed toward the private practice environment. While nonacademic hospital practices have a median of three providers, the ideal seems to be higher based on previously discussed supply perceptions. VA and government-contract physicians

1 Quereshy HA, Quinton BA, Ruthberg JS, Maronian NC, Otteson TD. Practice consolidation in otolaryngology: the decline of the single-provider practice. *OTO Open*. 2022; 6(1):2473974X221075232.

makeup smaller practices, with most having only one practice location.

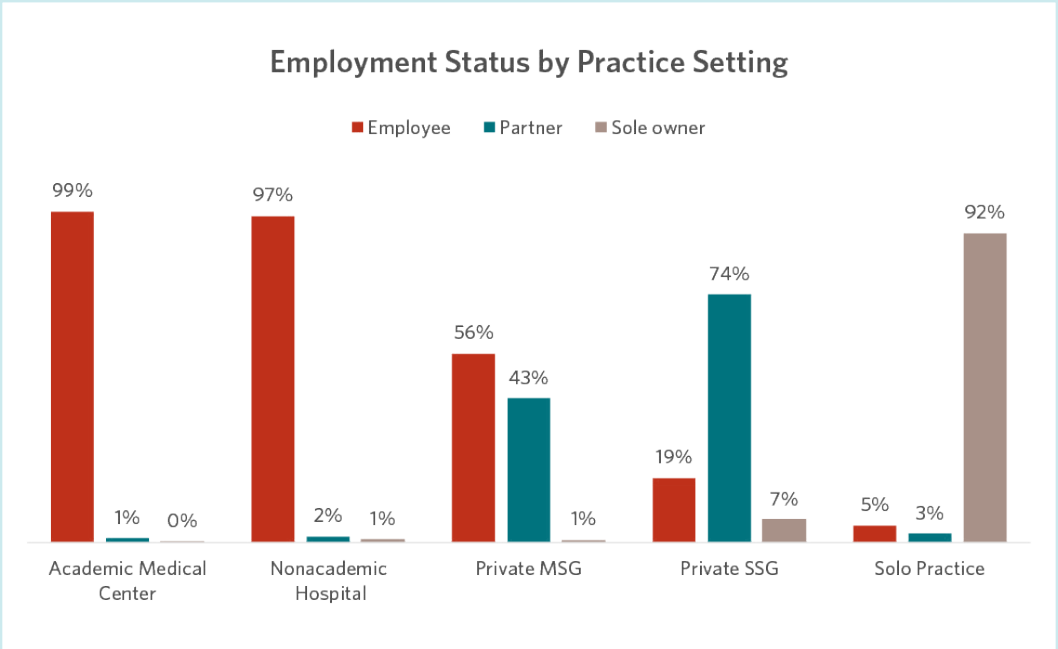
While many providers only work at one office location, most academic and private SSG otolaryngologists work at multiple locations. The percentage of otolaryngologists working in multiple offices becomes a minority and continues to drop from private MSG, nonacademic hospital, and solo practice. Only 9% of otolaryngologists provide care in more than one state, which may simply be a reflection of practices along or near state borders.

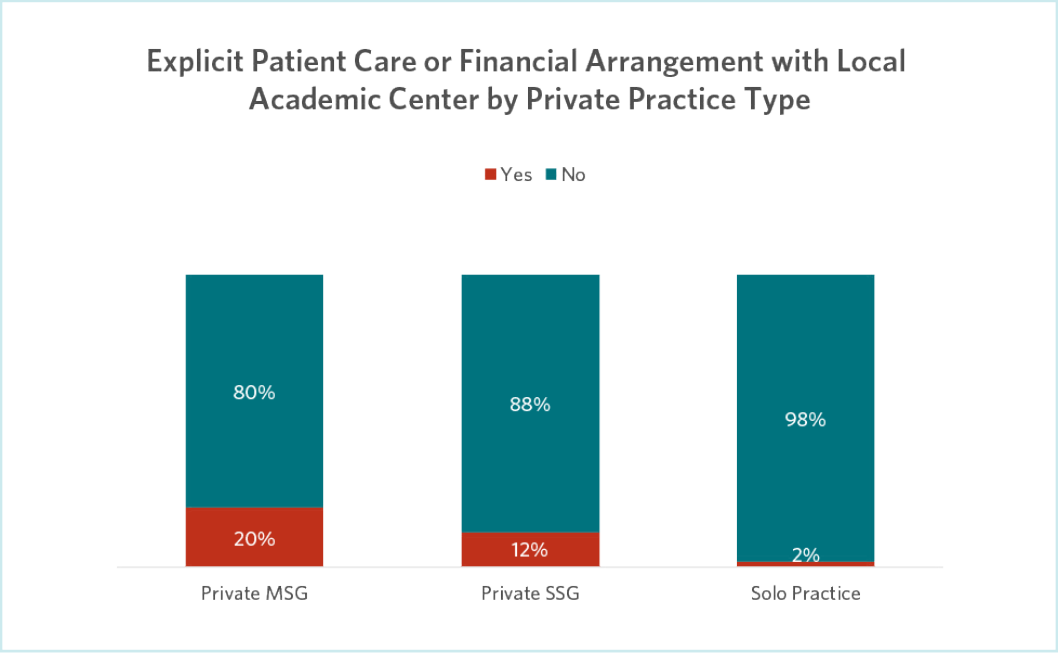
When we analyzed the urban-rural divide among otolaryngologists, we found that the vast majority of us work in urban environments. When analyzed across all office locations provided, we found this disparity increases slightly to near 90%. We also see stark differences in terms of rural access with fellowship training, with only 5.6% of fellowship-trained otolaryngologists providing care in any rural setting. Fellowship training has increased substantially over time. Given that the percentage of the United States population living in rural settings is nearly twice the percentage of otolaryngologists providing care in rural America—and comprises the majority of our land by area —we should be looking at how we can optimize access for these Americans. Further, given fellowship trends, we should also be regularly assessing these data to ensure our urban-rural divide doesn't worsen and create further access issues.

Despite our general urban practice predilection, 12%-19% of otolaryngologists travel to rural or economically disadvantaged areas to care for patients. And while these satellite clinics were 53% rural, the urban environments likely represent socioeconomically disadvantaged clinics. Solo practice otolaryngologists travel to these clinics less frequently; however, when they provide this service they give the most time. Private MSG and SSG otolaryngologists provide care at these locations at the highest rate. When otolaryngologists provide outreach, the model seems to be one day a week or one day every other week. These otolaryngologists are providing a valuable service, and these data should be tracked longitudinally, particularly given potential practice model shifts described earlier. Other future areas of inquiry include number of patients seen, whether one operates on site, and how these models are created and incentivized.

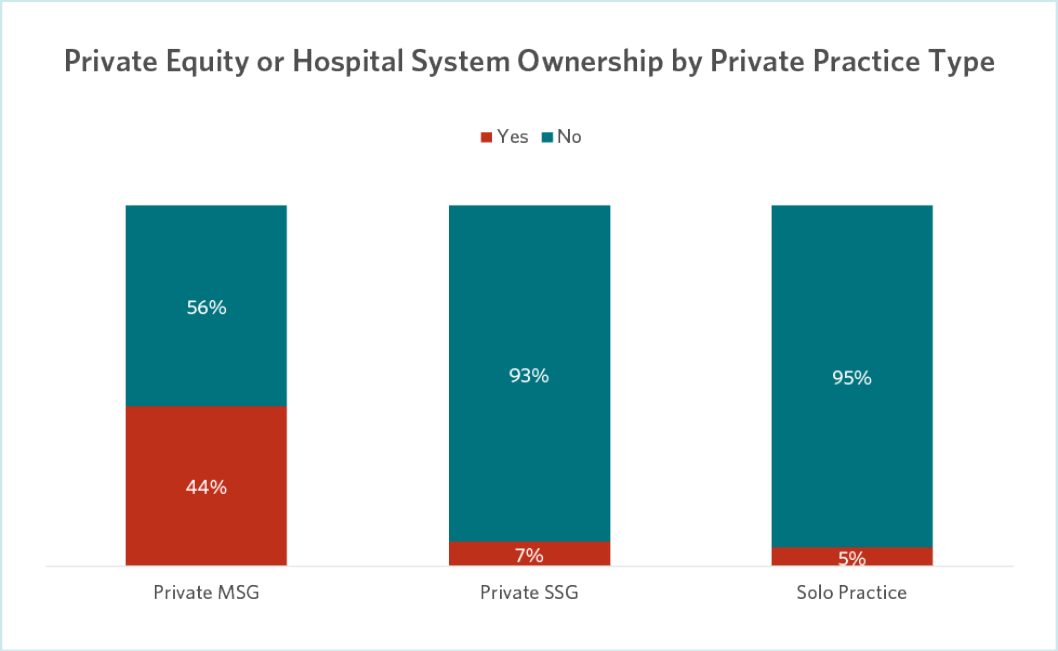
Another method practices use to fill in access gaps is to hire locum tenens physicians. Only 29 otolaryngologists responded saying they did locums work in the last year, and locums physicians seem to come from virtually all practice settings. Future lines of inquiry should include length of work and practice environments in which locums work is performed. While this future analysis will shed light on specific areas of need, based on supply perception data and call coverage analyzed later, it would not be surprising if nonacademic hospital settings were the primary locations requesting coverage.

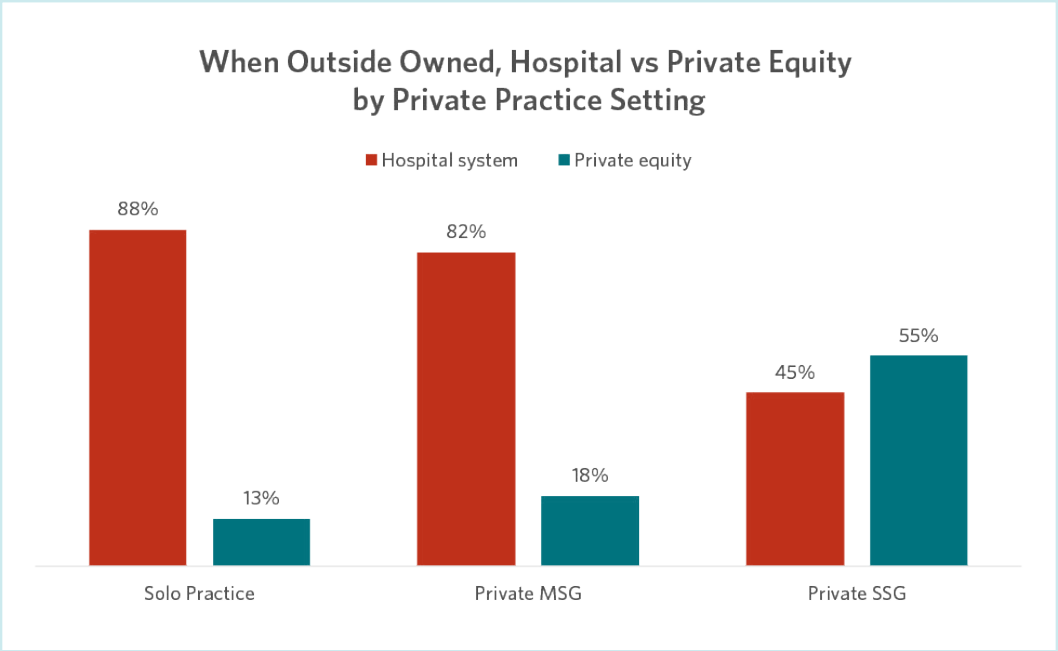
PRACTICE DYNAMICS

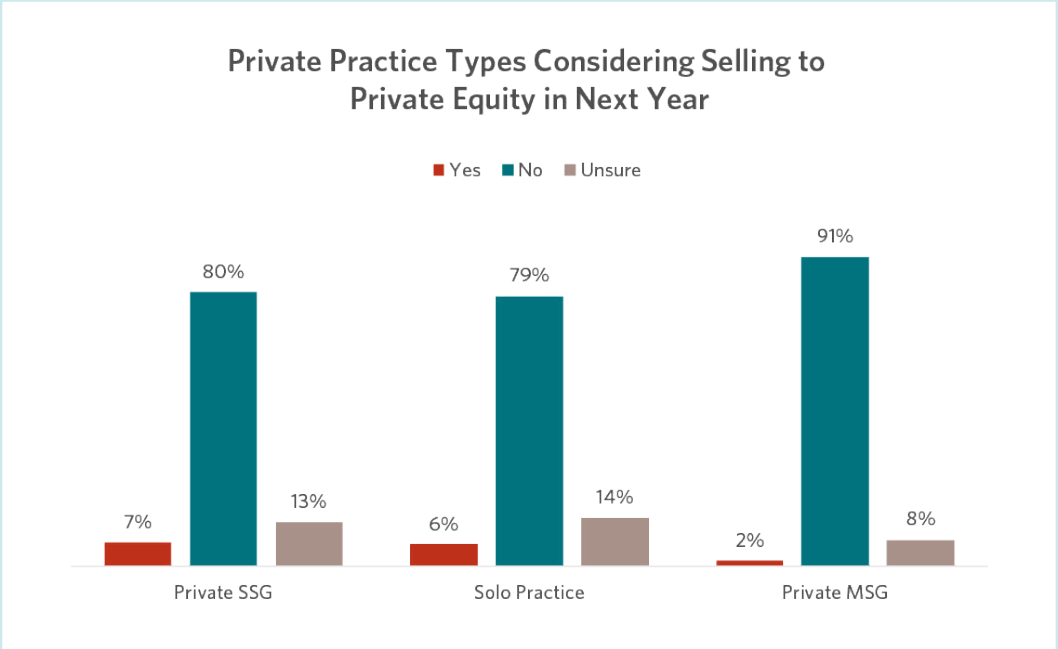


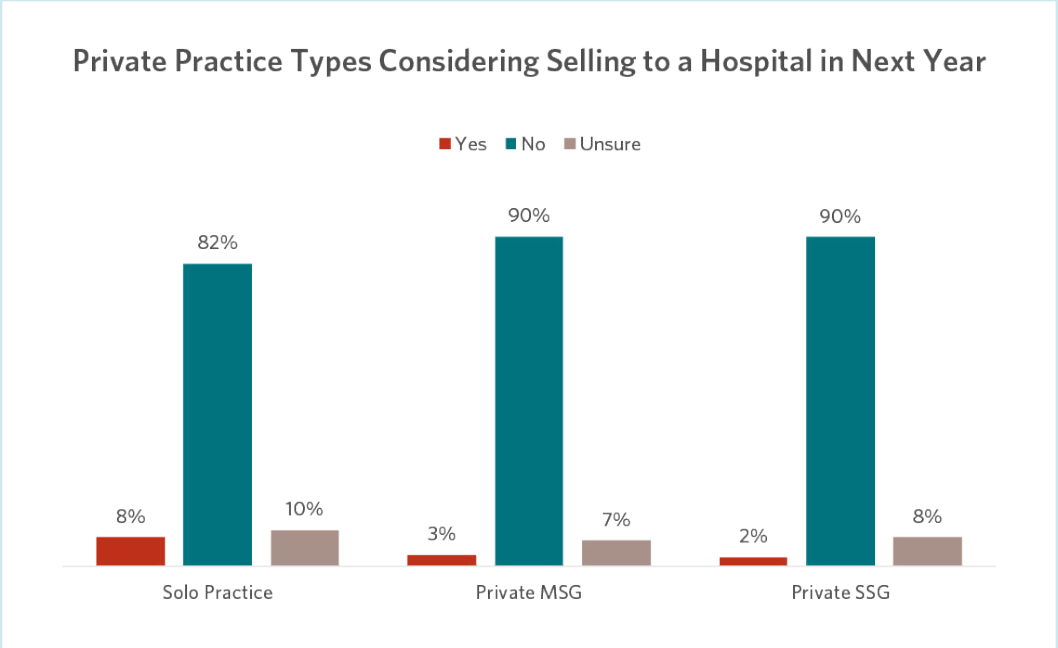


Private Practice Outside Ownership and Sale Consideration






Private Practice Types Considering Selling to Private Equity in Next Year
Yes
No
Unsure
7%
80%
13%
6%
79%
14%
2%
91%
8%
Private SSG
Solo Practice
Private MSG


Private Practice Types Considering Selling to a Hospital in Next Year
Yes
No
Unsure
8%
82%
10%
3%
90%
7%
2%
90%
8%
Solo Practice
Private MSG
Private SSG

Insurance Acceptance Patterns

Medicare

	Currently Accept			Plans Over Next Year		
Primary Practice Setting	**Yes**	**No**	**Unsure**	**Add**	**Drop**	**Keep**
Nonacademic Hospital	99%	1%	0%	1%	0%	99%
Private MSG	98%	2%	0%	0%	1%	99%
Private SSG	99%	1%	0%	0%	0%	100%
Academic Medial Center	97%	2%	1%	0%	1%	99%
Solo Practice	91%	8%	1%	1%	9%	91%

*Percentages may not total 100% due to rounding

Medicaid

	Currently Accept			Plans Over Next Year		
Primary Practice Setting	**Yes**	**No**	**Unsure**	**Add**	**Drop**	**Keep**
Nonacademic Hospital	97%	2%	1%	1%	1%	98%
Private MSG	88%	11%	1%	1%	4%	95%
Private SSG	78%	22%	0%	1%	18%	82%
Academic Medial Center	96%	3%	0%	0%	1%	98%
Solo Practice	58%	39%	4%	2%	34%	64%

*Percentages may not total 100% due to rounding

Self-Pay

	Currently Accept			Plans Over Next Year		
Primary Practice Setting	**Yes**	**No**	**Unsure**	**Add**	**Drop**	**Keep**
Nonacademic Hospital	98%	0%	2%	1%	1%	98%
Private MSG	93%	5%	2%	0%	5%	95%
Private SSG	99%	1%	0%	0%	1%	99%
Academic Medial Center	98%	1%	1%	0%	1%	99%
Solo Practice	97%	3%	1%	1%	3%	97%

*Percentages may not total 100% due to rounding

Out of Network

	Currently Accept			Plans Over Next Year		
Primary Practice Setting	**Yes**	**No**	**Unsure**	**Add**	**Drop**	**Keep**
Nonacademic Hospital	82%	4%	13%	4%	5%	92%
Private MSG	82%	12%	7%	2%	8%	89%
Private SSG	86%	6%	9%	4%	5%	90%
Academic Medial Center	87%	5%	8%	3%	3%	93%
Solo Practice	75%	17%	7%	3%	19%	78%

*Percentages may not total 100% due to rounding

Commercial

	Currently Accept			Plans Over Next Year		
Primary Practice Setting	**Yes**	**No**	**Unsure**	**Add**	**Drop**	**Keep**
Nonacademic Hospital	99%	0%	1%	2%	0%	98%
Private MSG	99%	0%	1%	0%	1%	99%
Private SSG	100%	0%	0%	0%	1%	99%
Academic Medial Center	99%	0%	1%	0%	0%	100%
Solo Practice	89%	10%	1%	1%	11%	89%

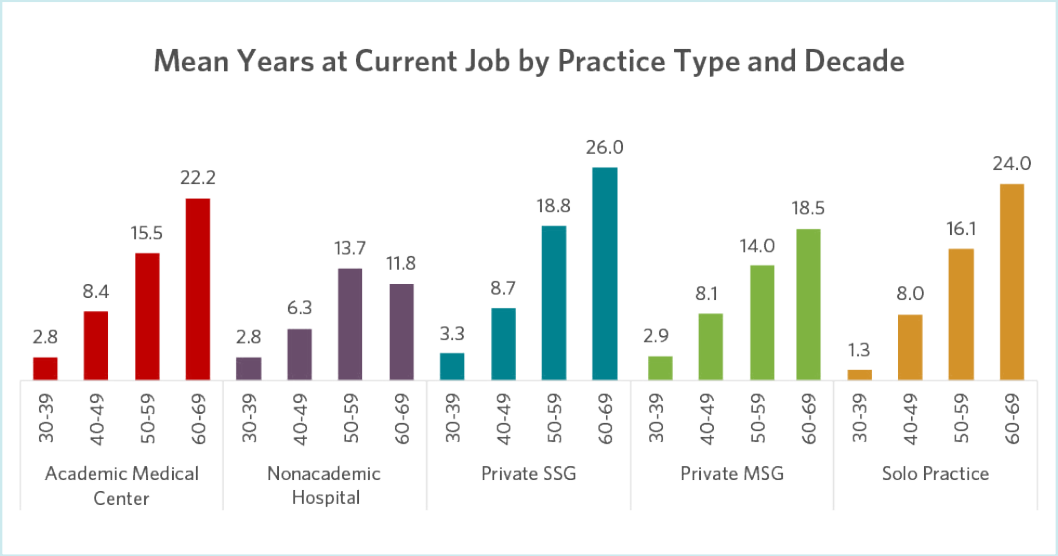
*Percentages may not total 100% due to rounding

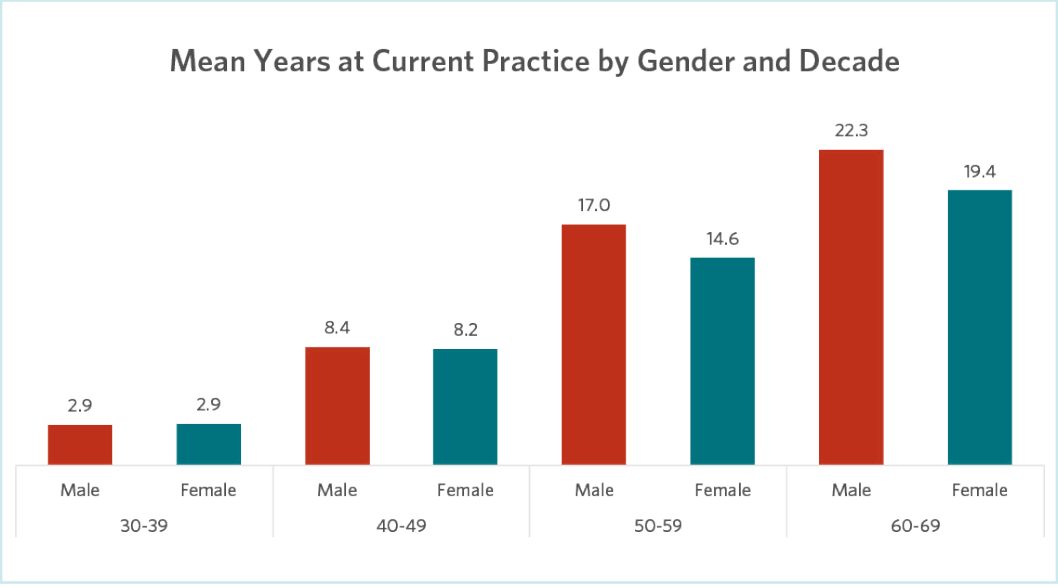
Insurance Acceptance Difference by RUCA Analysis

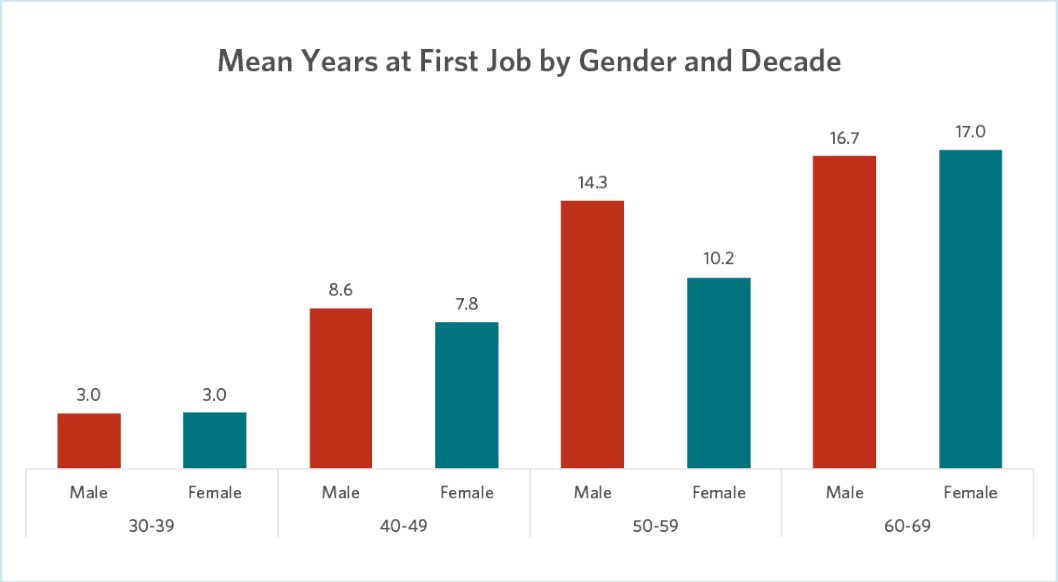
Medicaid Insurance Accepted in Last 12 Months	Urban	Rural	*p* value
No	14.2%	5.5%	0.002
Unsure	2.6%	0.6%	
Yes	83.1%	93.9%	

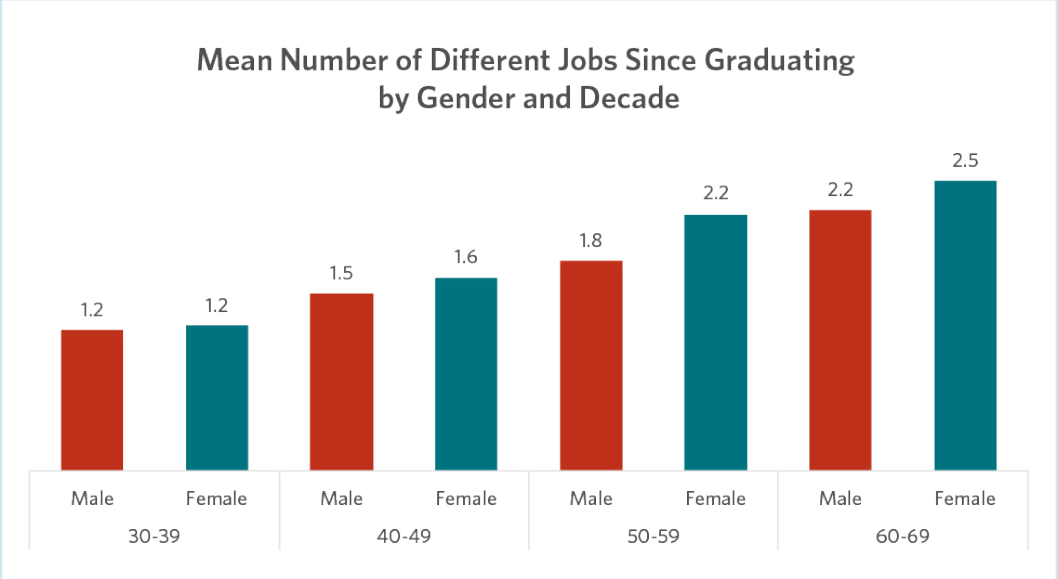
*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code

Job Dynamics

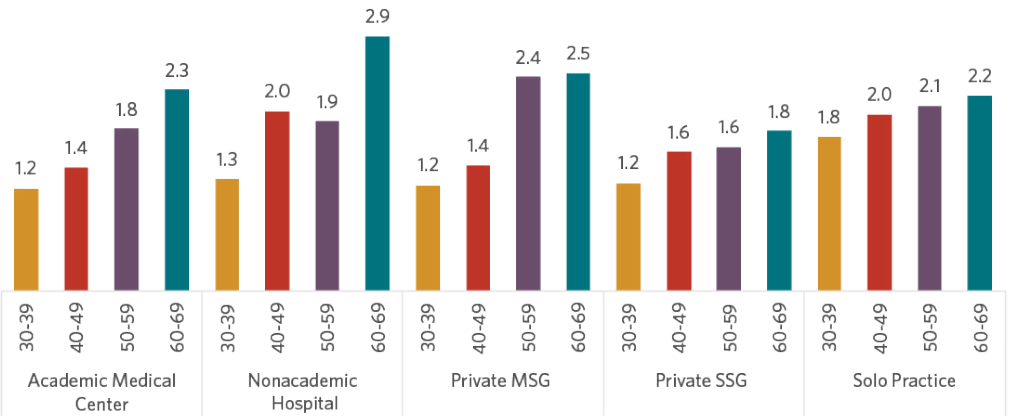




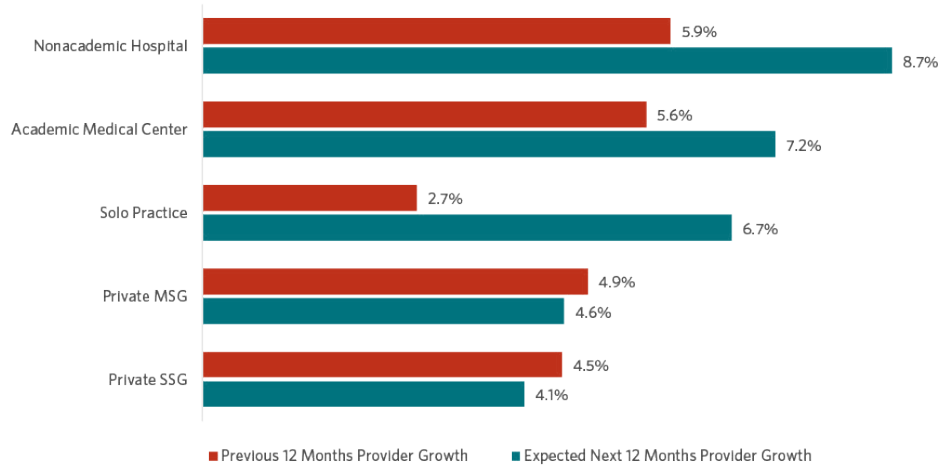

Mean Years at First Job by Gender and Decade
3.0
3.0
8.6
7.8
14.3
10.2
16.7
17.0
Male
Female
Male
Female
Male
Female
Male
Female
30-39
40-49
50-59
60-69


Mean Number of Different Jobs Since Graduating by Gender and Decade
1.2
1.2
1.5
1.6
1.8
2.2
2.2
2.5
Male
Female
Male
Female
Male
Female
Male
Female
30-39
40-49
50-59
60-69

Mean Number of Different Jobs Since Graduating by Decade and Practice Type



Prior Year and Expected Next Year Mean Net Otolaryngologist Growth by Practice Type



* Previous 12 months growth calculated by the previous 12 months mean net otolaryngologist change in the given practice setting divided by a revised denominator (calculated by subtracting the mean net growth over the last year from the current mean number of otolaryngologists in each practice setting)

* Expected growth calculated by the expected mean net otolaryngologist change in the next 12 months in the given practice setting divided by the current mean number of otolaryngologists in each practice setting

* Mean number of practicing otolaryngologists is likely not representative of each being a full FTE, so growth by FTE standards is likely different

Practice Dynamics Commentary

Other than partners in a private SSG and those in solo practice settings, most otolaryngologists in other practice environments are employees, including in private MSGs. Correlating with the private MSG outlier among private practices, a substantially higher percentage of private MSGs are owned by an outside entity (44%). By and large, those in private practice are not in contractual arrangements with their local academic medical center. Small minorities of those in private practice are leaning toward selling their practices in the next year. Of those who are planning to do so, solo practices are more likely to consider selling to a hospital while private SSGs are looking at private equity as buyers. Nonacademic hospital and academic practices tended to see higher and anticipated growth by provider numbers, though all main practice settings appear to be showing recent growth. Note, this growth calculation assesses otolaryngologist growth, not FTE growth.

Medicare is accepted at more than 90% of practices, regardless of setting, though 9% of solo practices are considering dropping Medicare in the next year. Medicaid is accepted at a similar level in both nonacademic hospital and academic practices, but this rate is substantially lower in private SSG and especially solo practice settings. Only 58% of those in solo practice currently accept Medicaid, and roughly one in three accepting Medicaid plan on dropping it in the next year. Nearly one in five private SSGs are planning on withdrawing from it. These results have both access and policy implications. Rural America, as previously shown, already seems to have access concerns, and the access currently provided is largely from nonacademic hospital and private practices. To the degree these Medicaid acceptance trends hold true in rural America, this has the potential to exacerbate an already access-challenged setting. The RUCA analysis may tell another tale—Medicaid is more than twice as likely to not be accepted in more urban settings. While rural America has its access challenges so do the urban poor, which may worsen in the near future. One policy focus that may buck these trends is pay parity across practice settings.

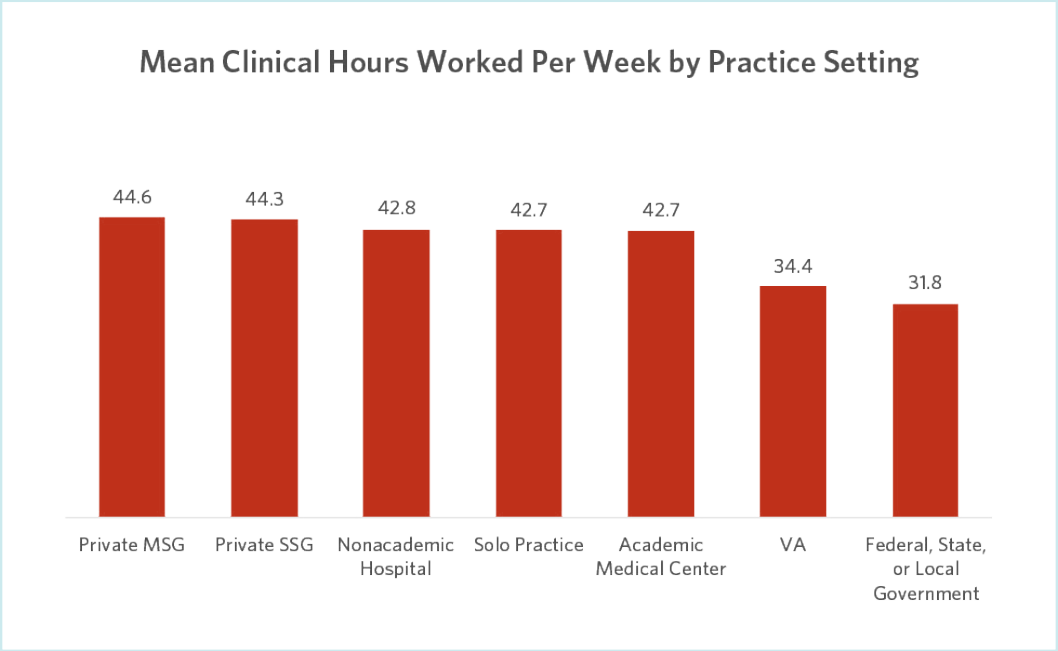
Participation in commercial insurance plans remains high across our main five practice settings; however, 11% of respondents in solo practice indicated dropping at least some of these plans within 12 months. Physicians continue to work with patients in self-pay arrangements across all practice types at a high rate.

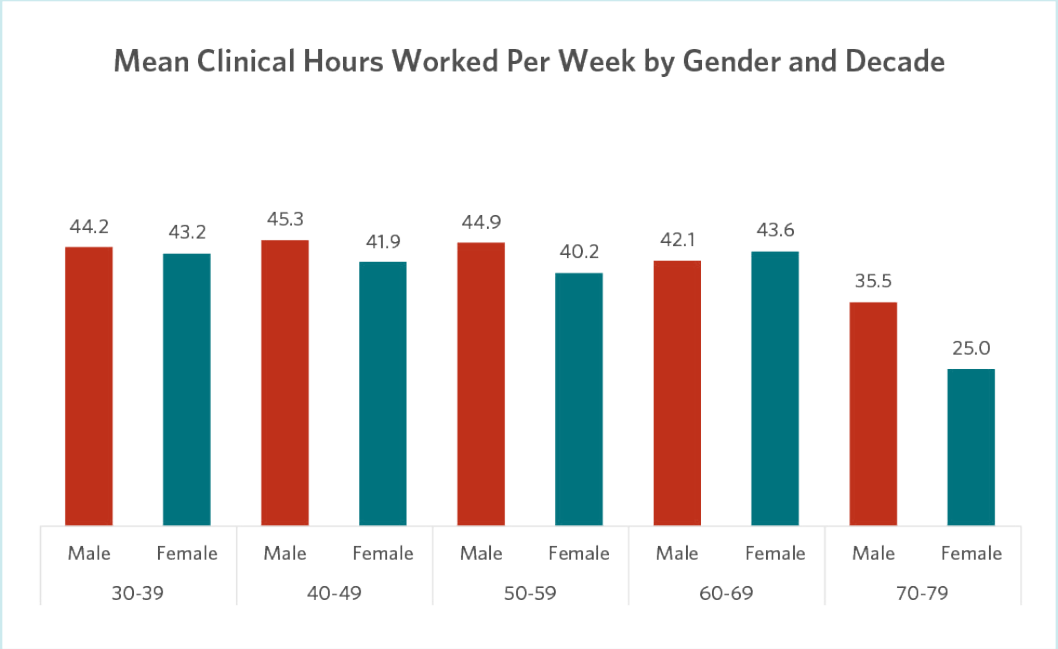
Otolaryngologists tend to have two-to-three jobs during the course of their career, depending on the practice setting. To the degree practice and job dynamics are equal across generations, the private SSG appears most stable with 1.8 mean jobs by the seventh decade of life, whereas the nonacademic hospital physician seemed to have the greatest change with 2.9 mean jobs by the seventh decade. These two extremes were supported by the data describing the mean years at one's current job.

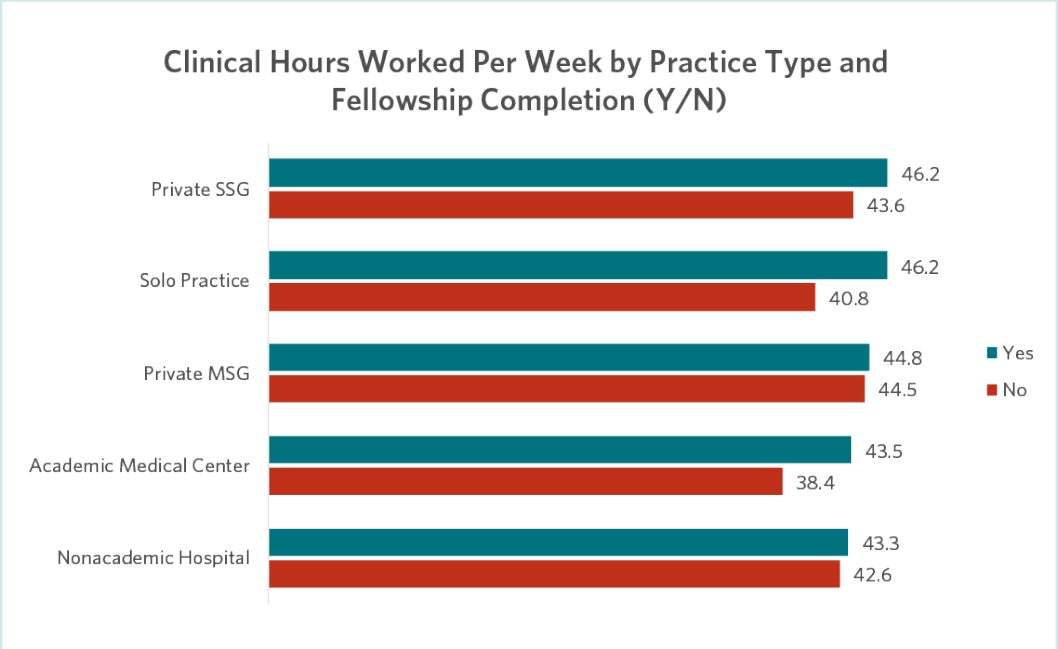
Our youngest colleagues (30-39 years) are typically still at their first job. Some in the younger age group appear to leap into the solo practice environment, as this cohort had a slightly higher mean number of jobs at 1.8, compared with their age peers' means of 1.2-1.3 in other practice environments. Some slight disparities seem to exist between our male and female colleagues both in terms of mean number of years at their first job (higher for males in fifth and sixth decades) and mean number of jobs since graduating (slightly higher for females starting in the fifth decade). Understanding what underlying factors drive these job dynamics will be worthy of future focus.

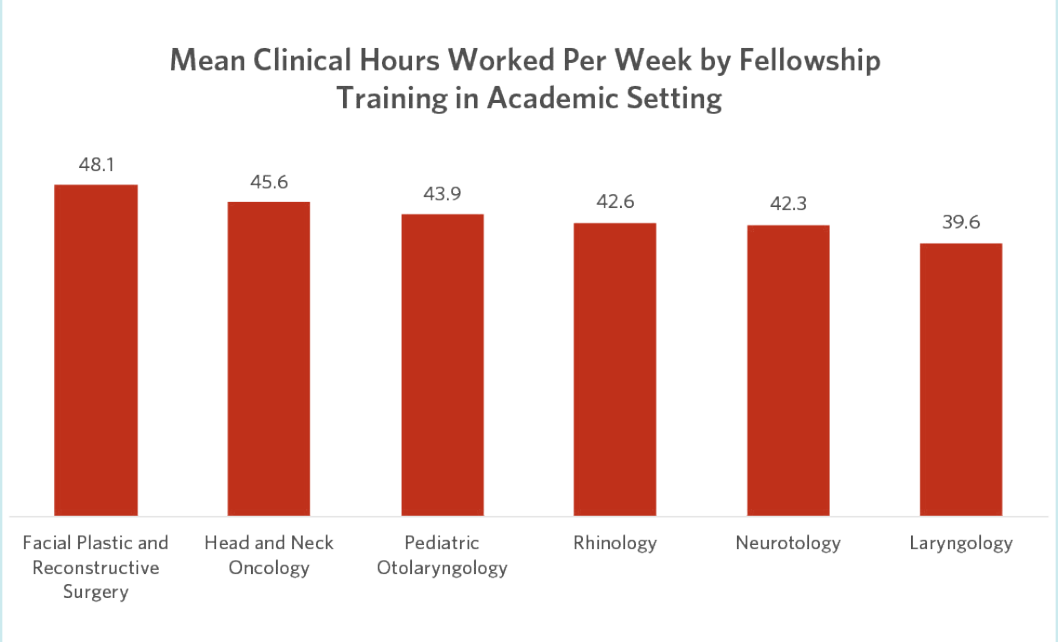
PRODUCTIVITY

Clinical Hours Worked

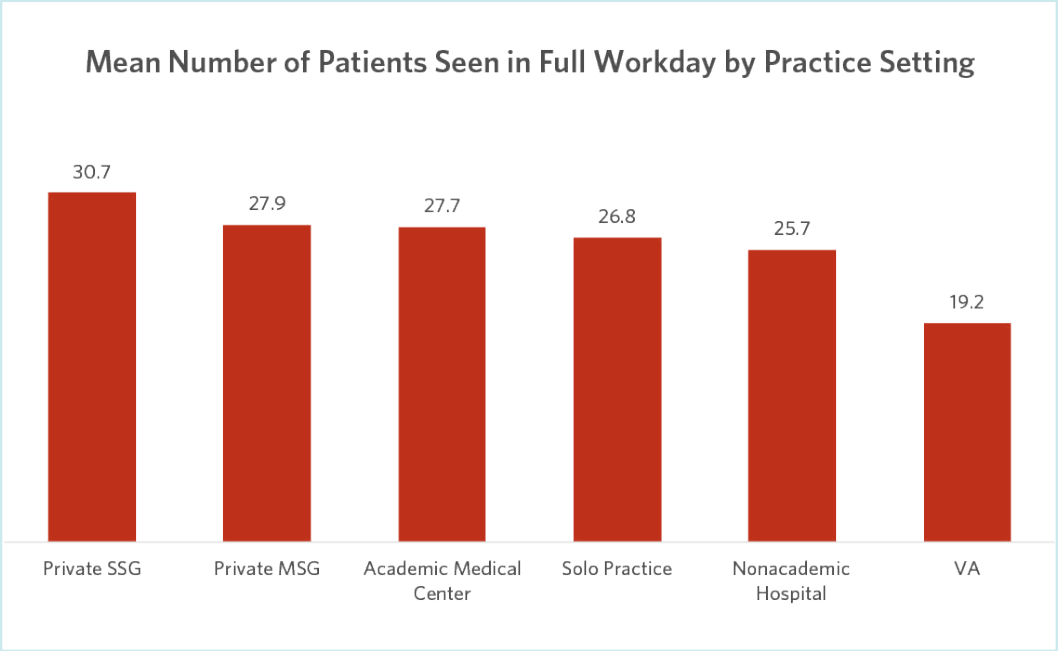


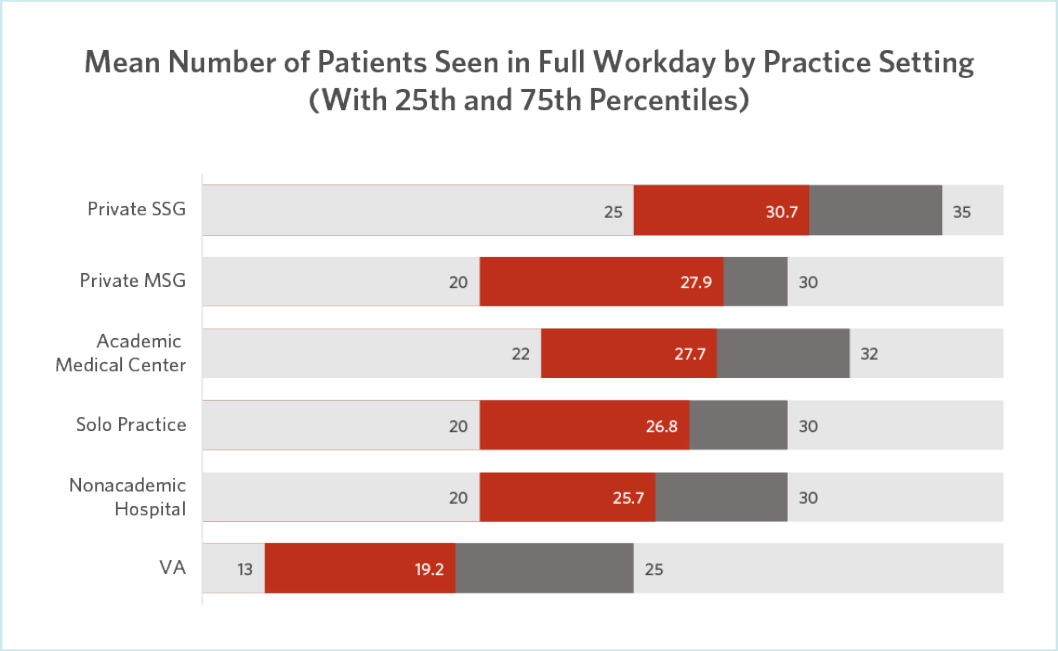



Clinical Hours Worked Per Week by Practice Type and Fellowship Completion (Y/N)
Private SSG
46.2
43.6
Solo Practice
46.2
40.8
Private MSG
44.8
44.5
Academic Medical Center
43.5
38.4
Nonacademic Hospital
43.3
42.6
Yes
No

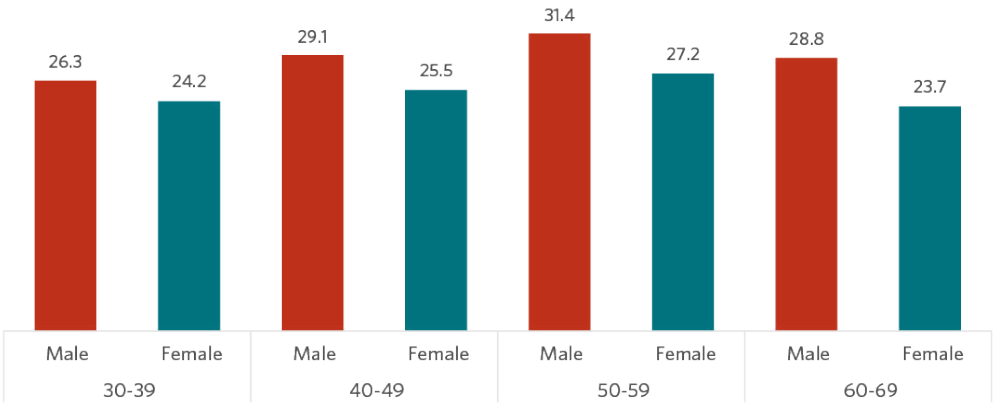

Mean Clinical Hours Worked Per Week by Fellowship Training in Academic Setting
48.1
45.6
43.9
42.6
42.3
39.6
Facial Plastic and Reconstructive Surgery
Head and Neck Oncology
Pediatric Otolaryngology
Rhinology
Neurotology
Laryngology

Patients Seen

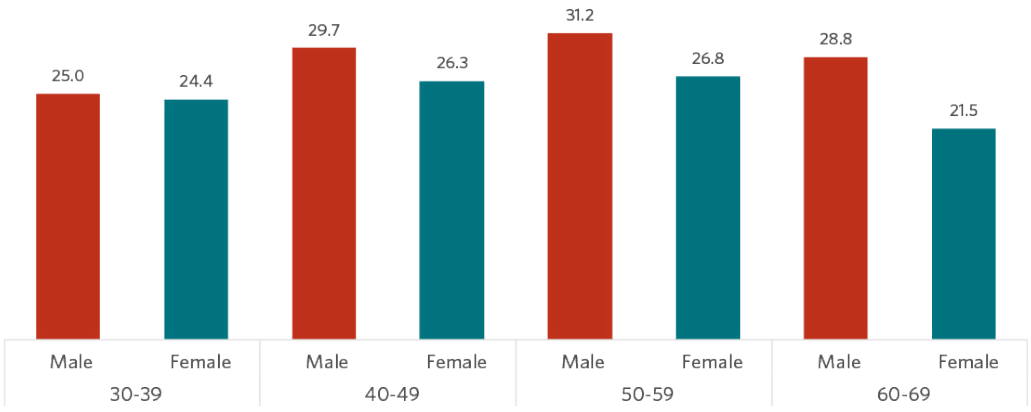


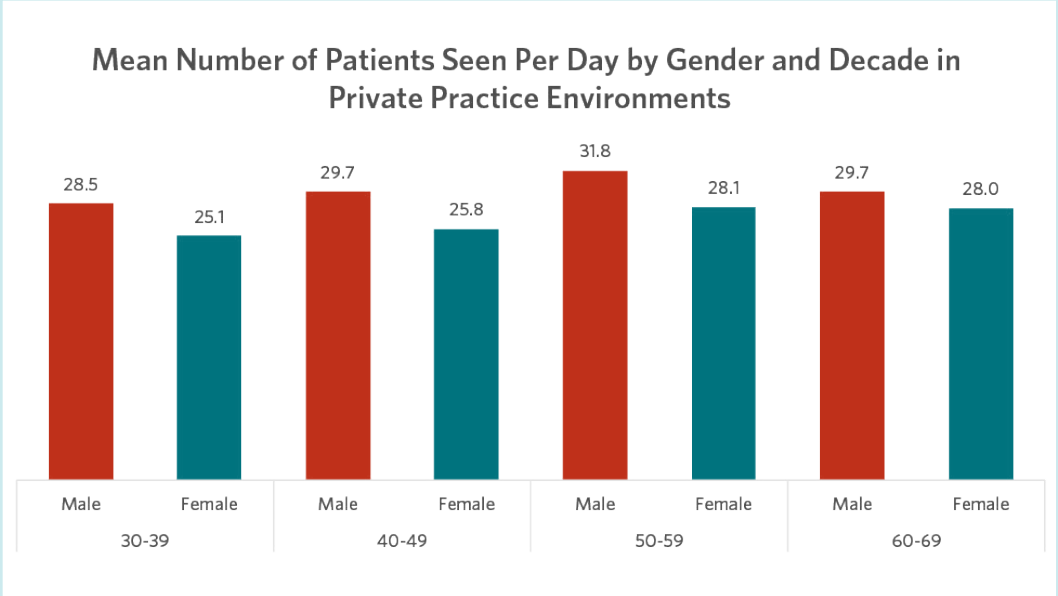


Mean Number of Patients Seen in Full Workday by Gender and Decade

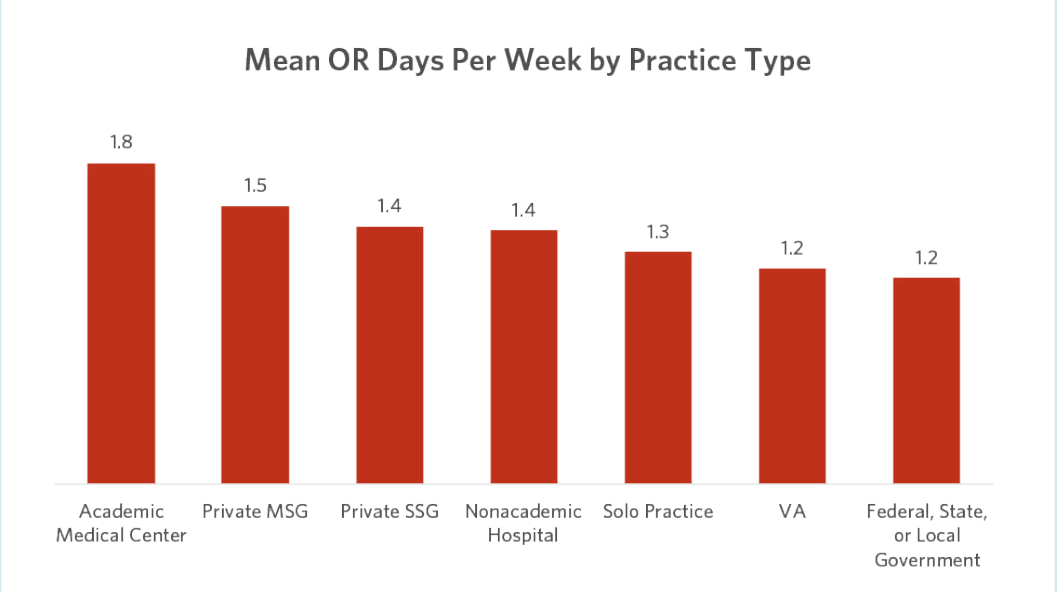


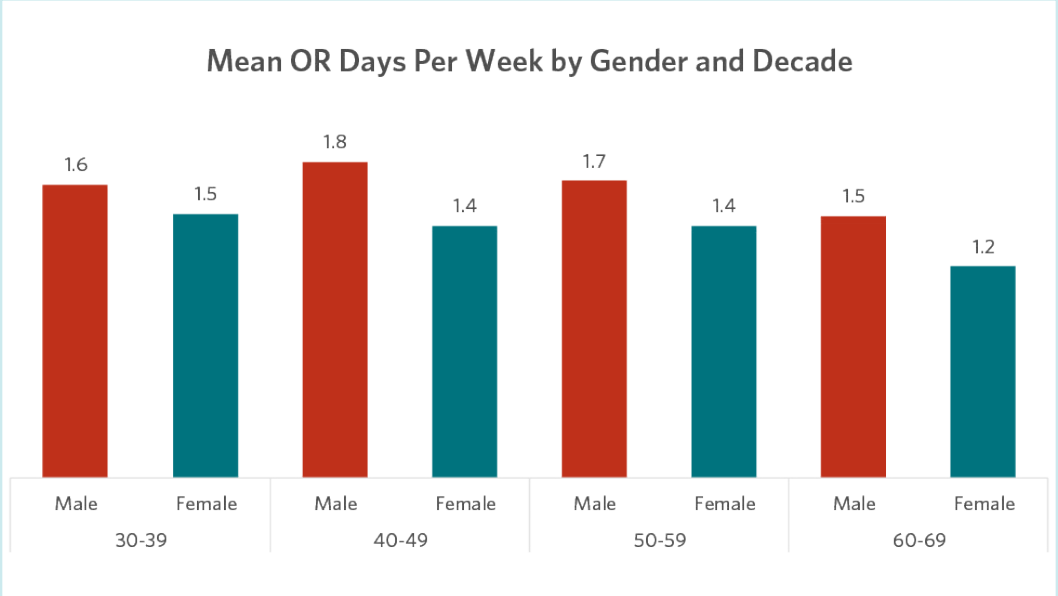
Mean Number of Patients Seen Per Day by Gender and Decade at Academic Medical Centers





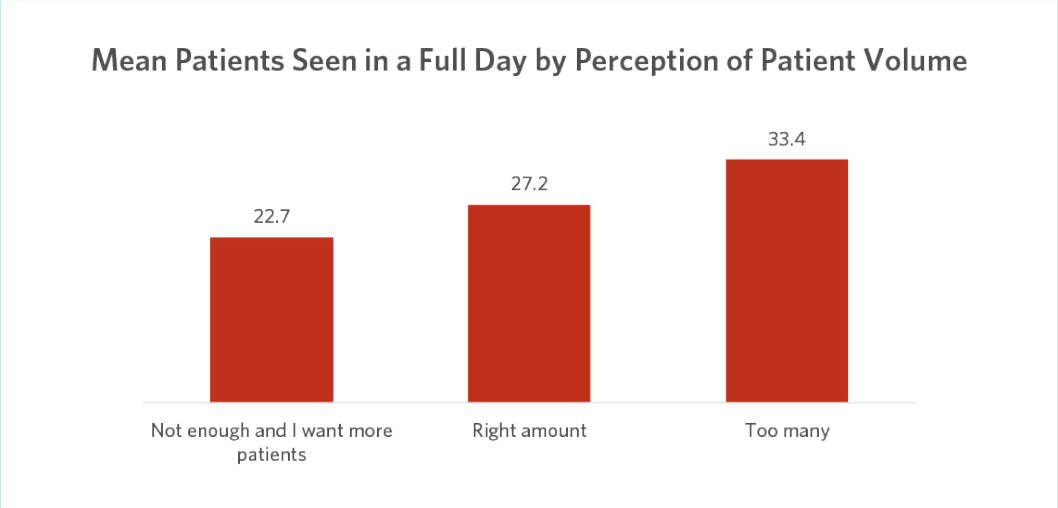
Operating Room (OR) Days



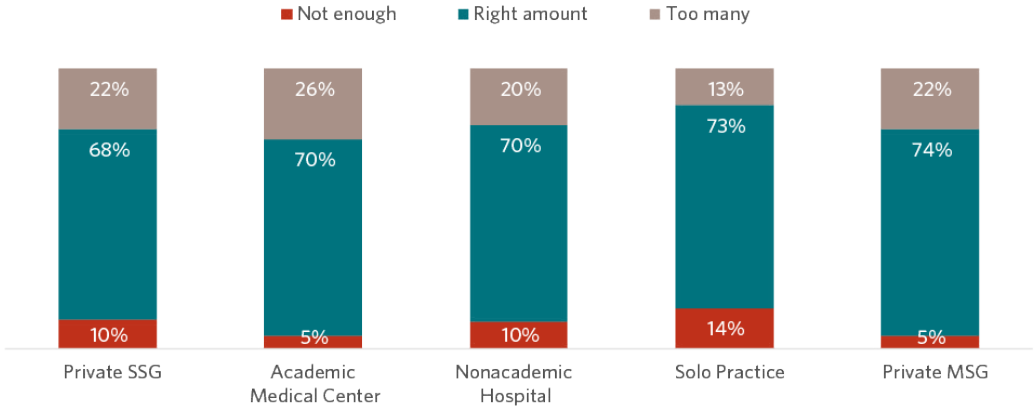


Mean OR Days Per Week by Fellowship Status	
Fellowship	1.7
No Fellowship	1.4

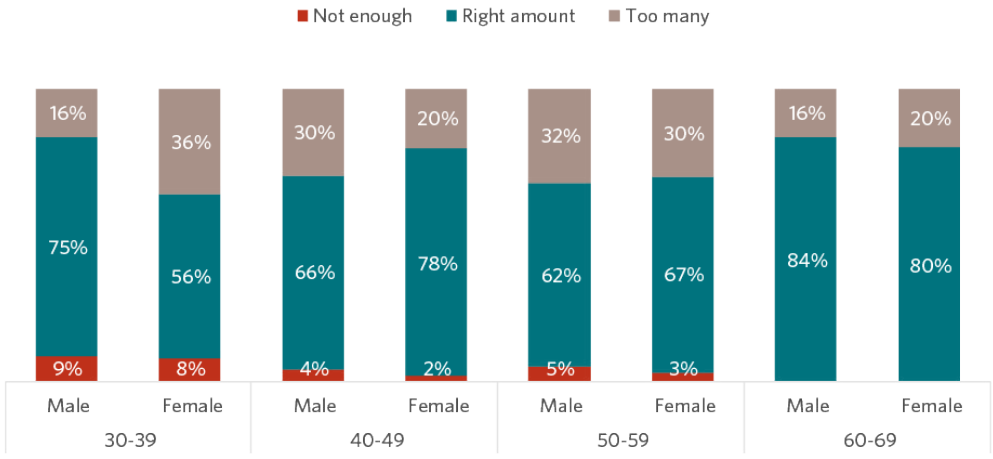
Productivity Perception



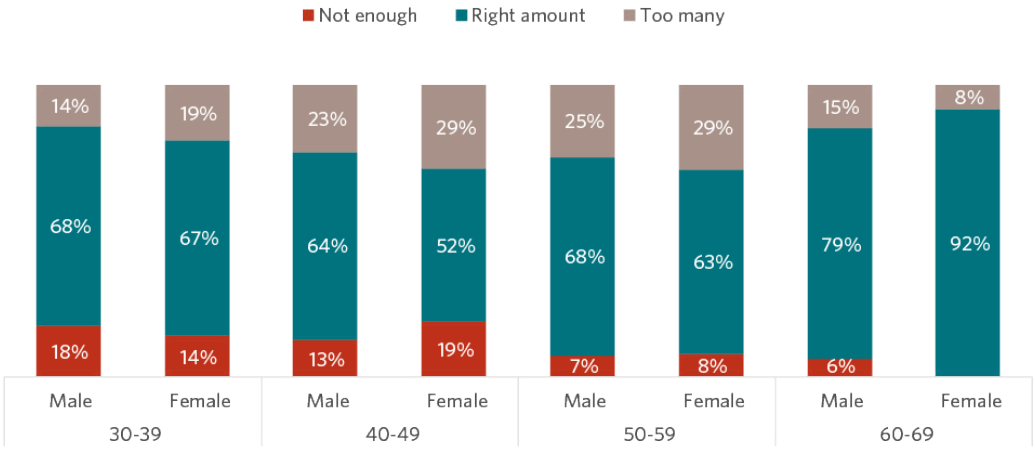
Perception of Number of Patients Seen in Typical Day by Practice Type



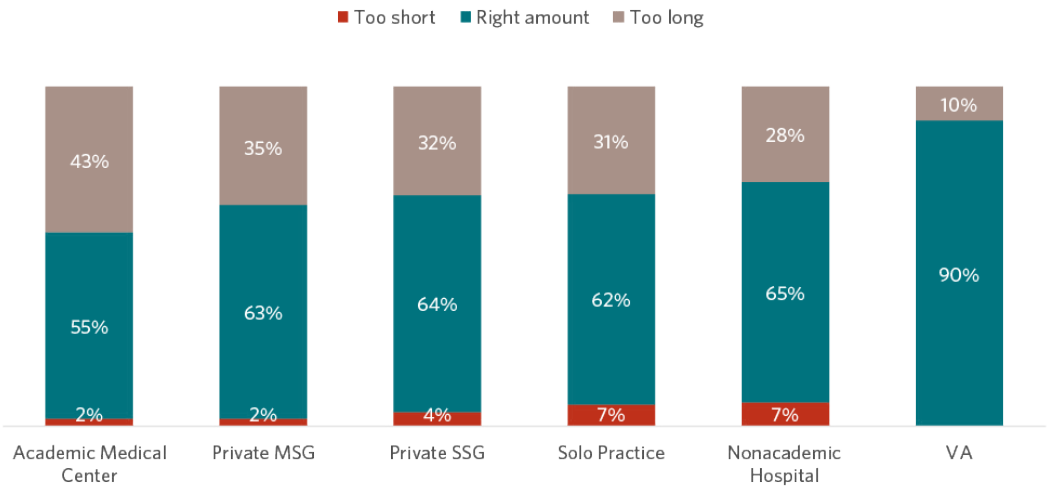
Perception of Patients Seen Per Day by Gender and Decade in Academic Medical Centers



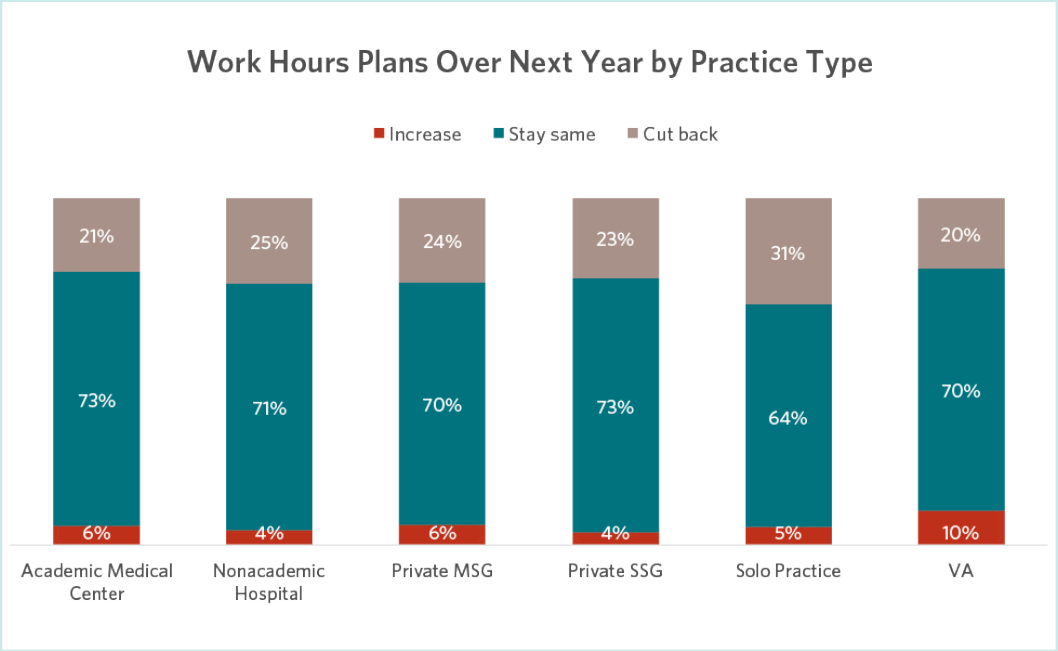
Perception of Patients Seen Per Day by Gender and Decade in Private Practice Environments

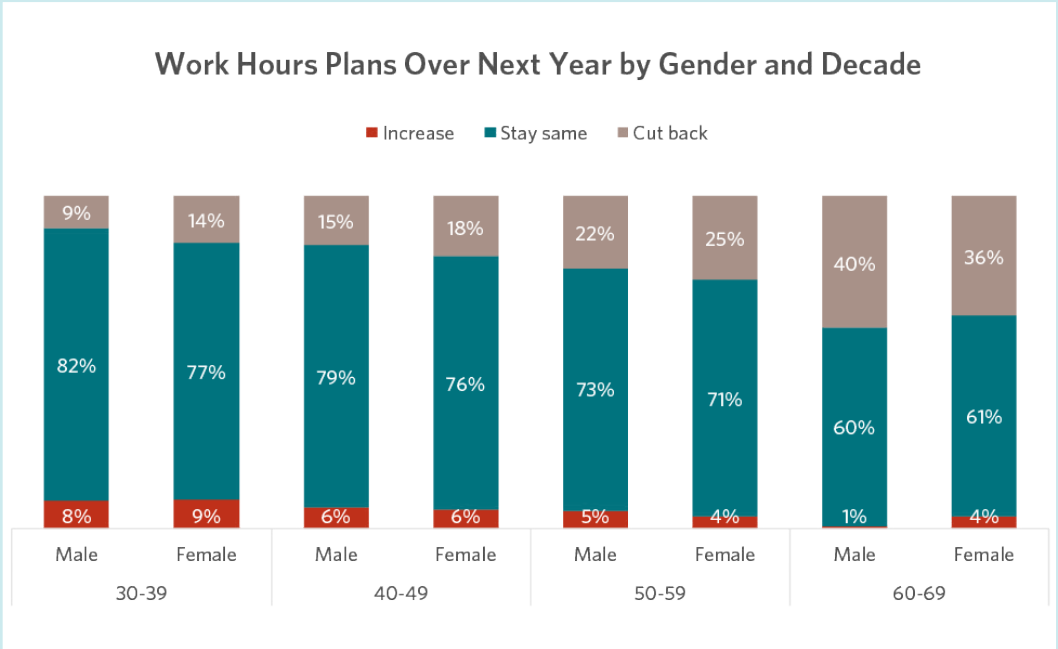


Perception of Workday Length by Practice Type

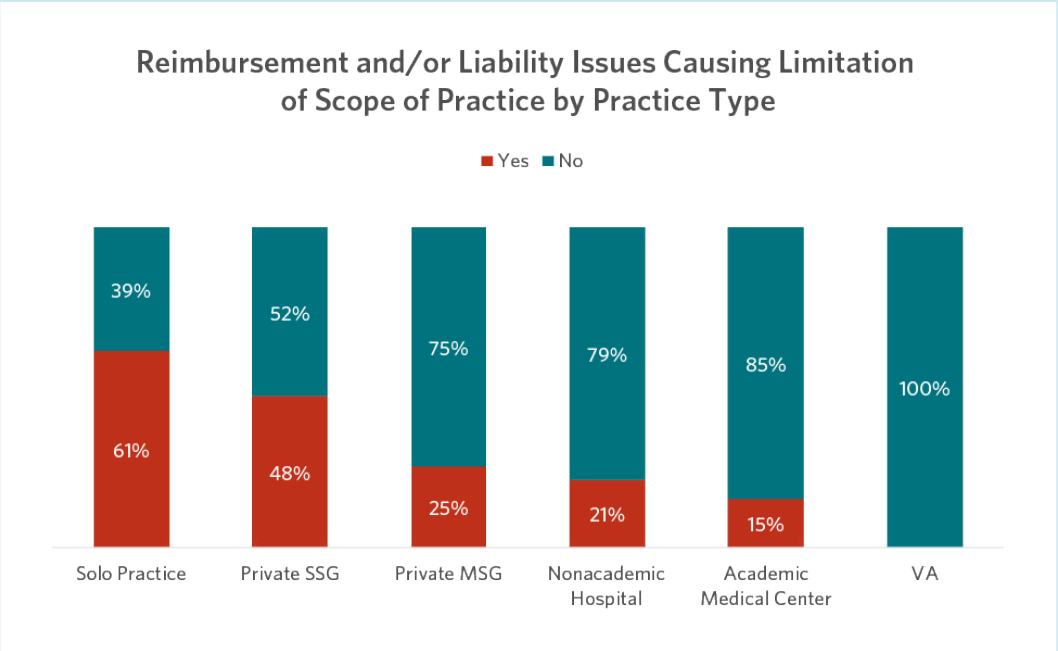


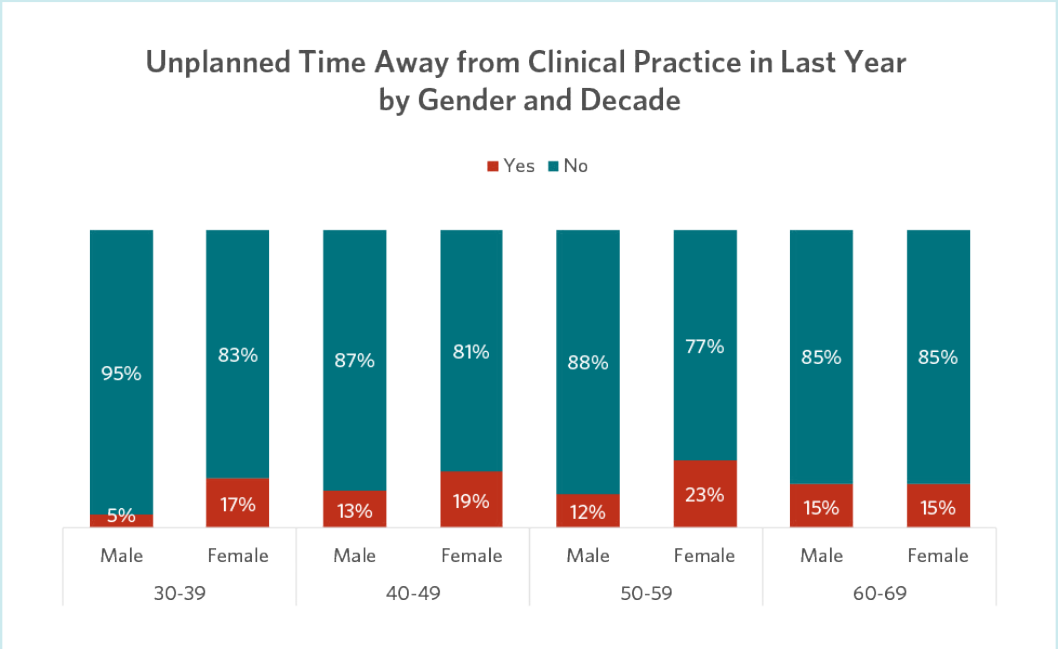
Work Hours Plans

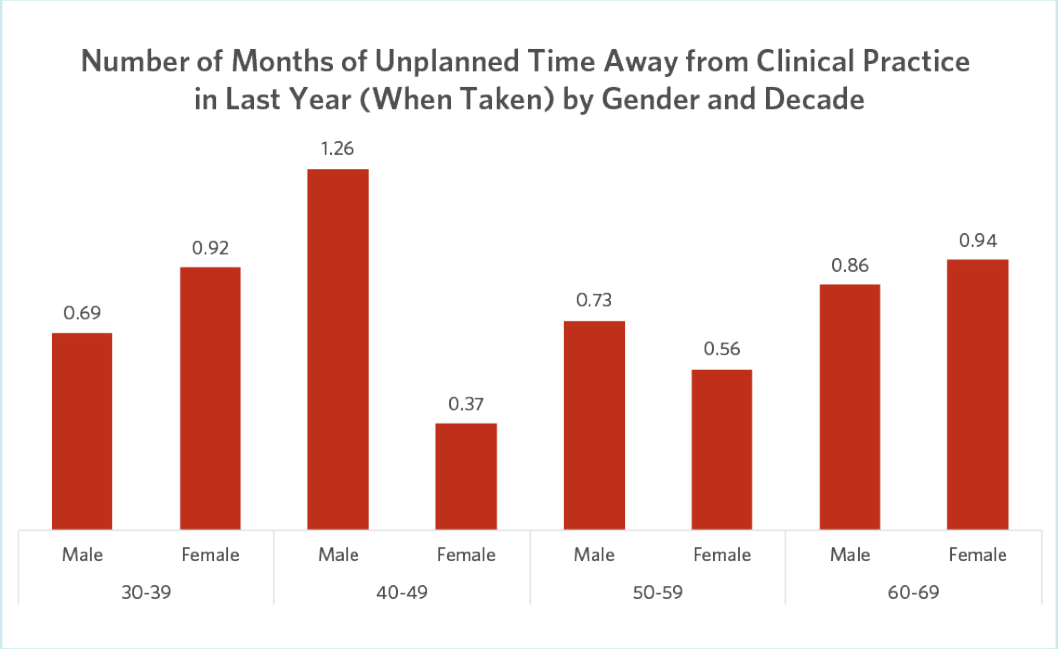




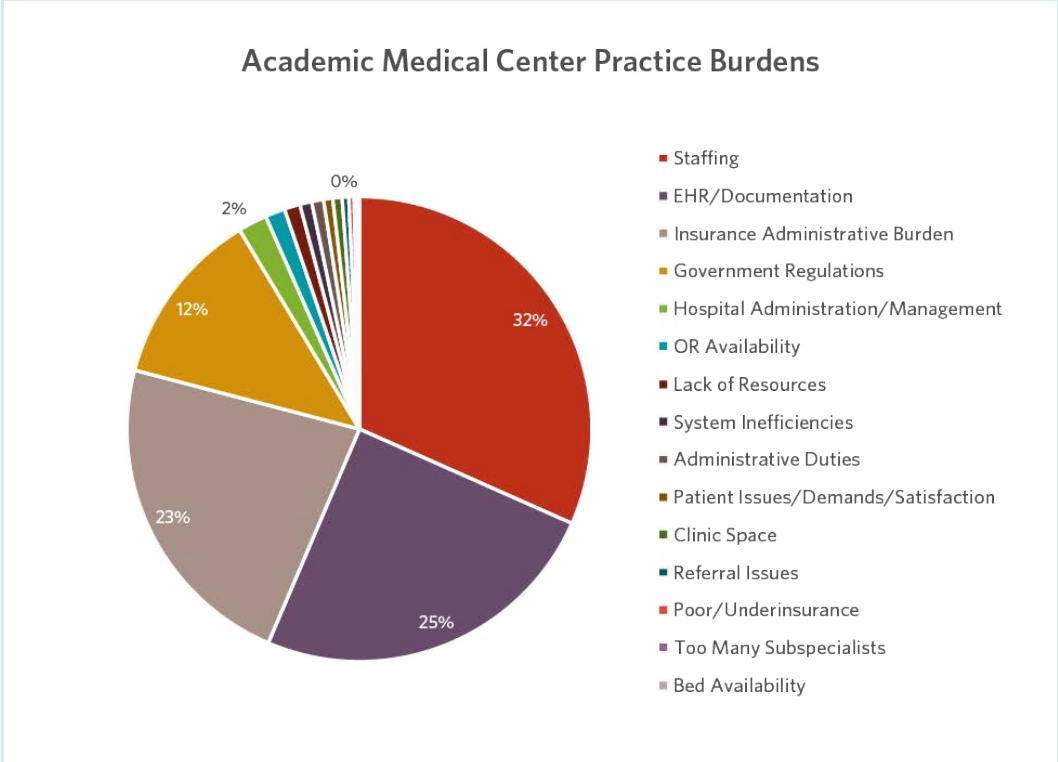
Negative Effects on Productivity



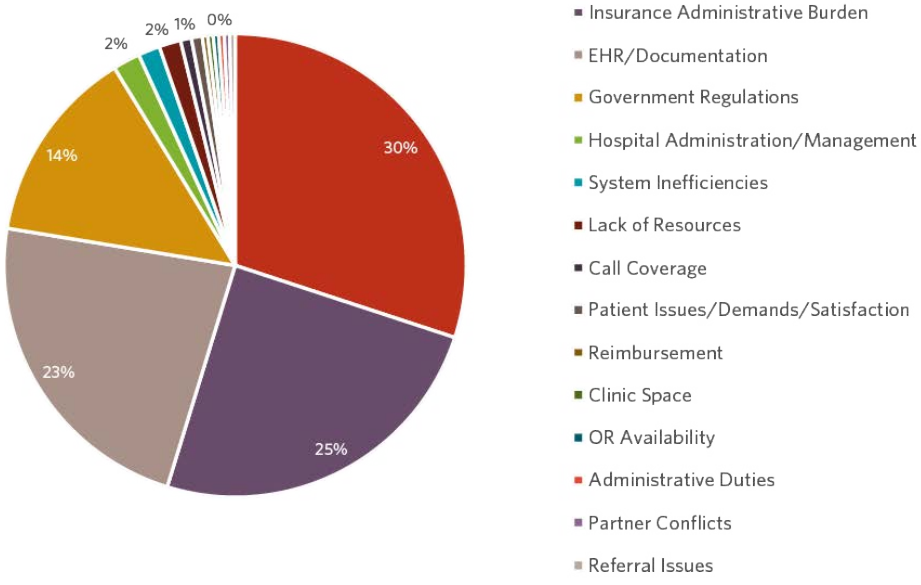




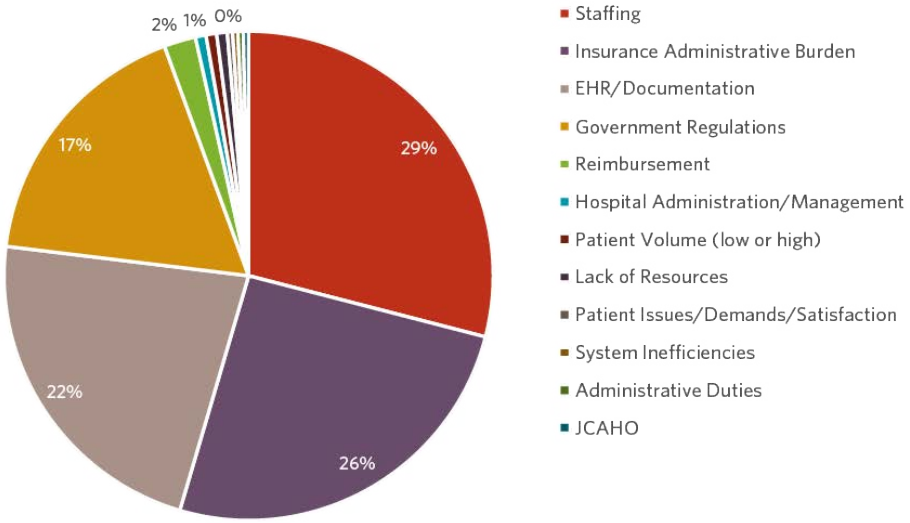
Practice Burdens by Setting



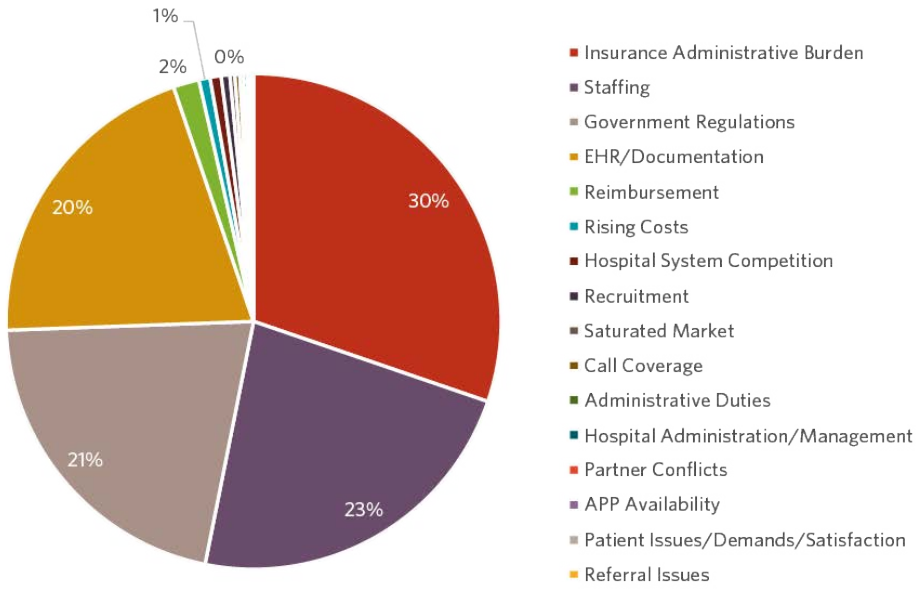
Nonacademic Hospital Practice Burdens



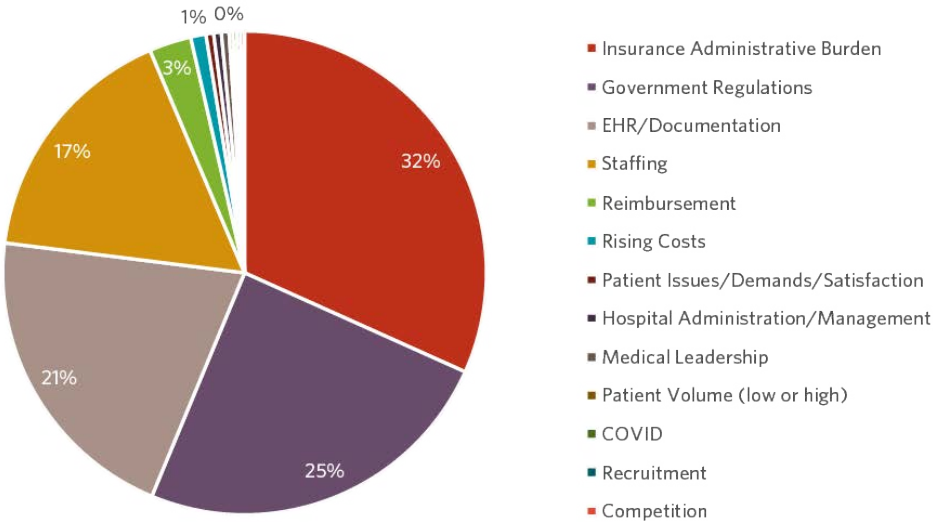
Private Multispecialty Group Practice Burdens



Private Single-Specialty Group Practice Burdens



Solo Practice Burdens



Productivity Commentary

Declining reimbursement in the setting of increasing healthcare expenses places productivity as the driving measure for physician return on investment, incentive plans, and associated compensation. For this reason, understanding the current state of physician productivity and associated perceptions is imperative.

Overall, the mean clinical hours worked per week ranged from 31.8 at the federal/state/local government level to a high of 44.6 hours among private MSGs, with academic and solo practice self-identifying midrange at 42.7 hours. Fellowship training seemed to correlate with more clinical hours worked across all practice settings. Unsurprisingly, within the academic setting, facial plastic and reconstructive surgeons and head and neck oncologists reported the highest clinical hours per week (48.1 and 45.6 respectively). The mean clinical hours showed mild gender discrepancies between the fourth and seventh decades, with males working between 1 and 4.7 hours more between 30 and 59 years of age, and women working 1.5 hours more per week in their 60s. In the eighth decade a 10-hour longer clinical work week was reported among males. Future analyses should look at the drivers for any discrepancies and other administrative and nonclinical work extending work hours.

The highest mean number of patients seen in a full workday was in the private SSG setting (30.7) and the lowest within the VA setting (19.2). Across all categories, males reported seeing more patients than females in both the academic and private sector. This information must be interpreted with caution as it does not account for factors impacting productivity to include ancillary staff (medical assistants, APPs, residents/fellows) as well as the number of assigned exam rooms. A large majority in all practice settings perceive the number of patients seen in a full workday as being the right amount; however, in the minority who didn't believe this, those perceiving the daily workload as too much tended to greatly outweigh the perception that it was not busy enough. The exception was solo practice, which had an even split of too much/not enough. On average, otolaryngologists saw 27 patients in a full day when perceiving they saw the right number of patients. When seeing 5-6 patients more or less per full workday, the work perception changed to too many or not enough.

The mean number of operating room (OR) days per week showed some differences across practice settings, ranging from 1.2 at the government level to a high of 1.8 days at academic medical centers. For every decade, males reported more time in the OR compared with their female counterparts. Fellowship-trained otolaryngologists spent 0.3 more days in the OR per week compared with those without advanced training, which represents 21% more time in the OR per week.

Ninety percent (90%) of government employees perceived their workday length as appropriate. Approximately one-third of otolaryngologists working in the nonacademic hospital, solo practice, private SSG, and private MSG settings perceived the workday length as too long. The greatest disparity was

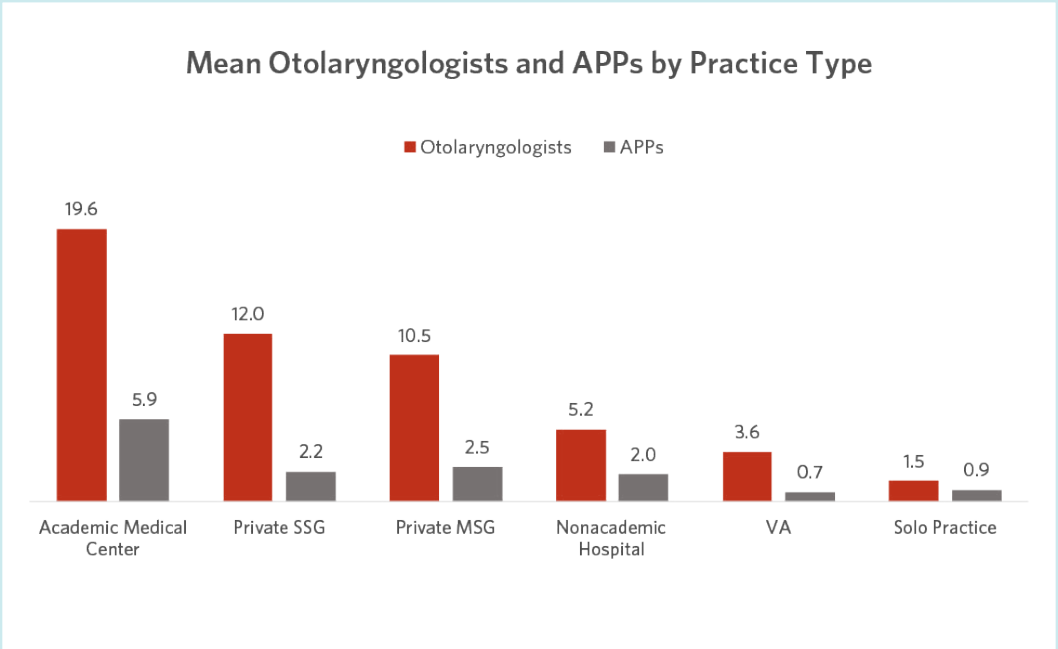
identified among academic practices, where 43% of otolaryngologists reported their workday as too long. These responses may reflect different nonclinical burdens across these practice types and is worthy of a deeper analysis in the future.

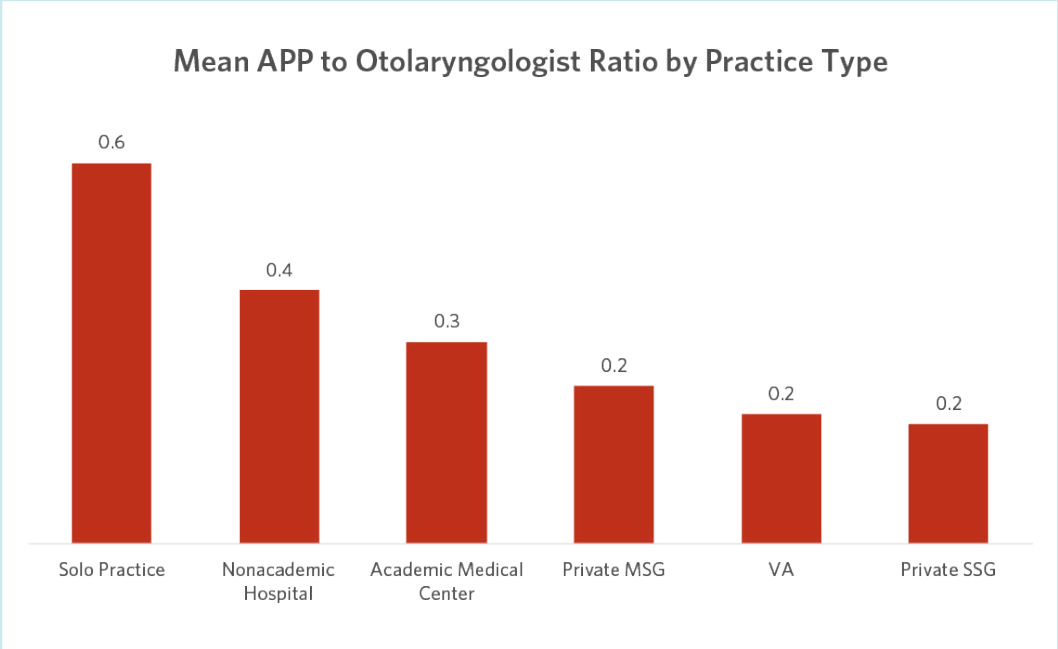
At every decade, both men and women reported unplanned time away from clinical practice in the last year. This time ranged from a low of 0.37 months (women in their 40s) and a high of 1.26 months (men in their 40s). As the workforce changes, understanding the rationale and associated support opportunities for these unexpected absences may be of benefit.

Approximately 70% of otolaryngologists across practice types envisioned their work hours remaining unchanged over the next year. Notably, however, over 20% of respondents anticipated cutting back their work hours in this next year, with the largest percentage planning a reduction in their 60s.

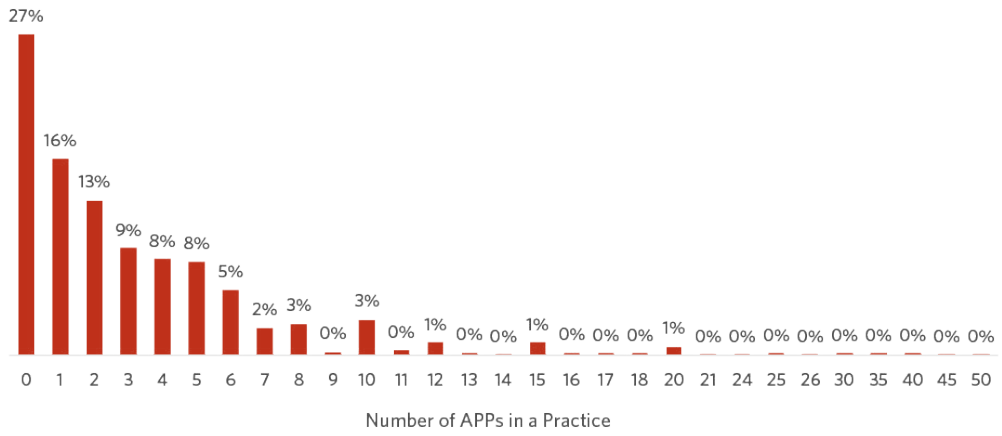
Practice burdens may contribute to the decision to reduce services provided or leave the workforce entirely. Otolaryngologists in solo practice and private SSG environments were much more likely to cite reimbursement and/or liability issues as the cause of scope-of-practice limitations. More generally, staffing, electronic health record/documentation, and insurance administrative burden were identified as the top practice barriers. This finding was universal across all practices, though the write-in responses were invaluable in terms of being able to craft better questions moving forward. These practice burdens can shape advocacy more immediately, but all areas negatively impacting wellness and productivity necessitate further investigation and advocacy in order to ensure a productive practice that best serves our patients.

ADVANCED PRACTICE PROVIDERS

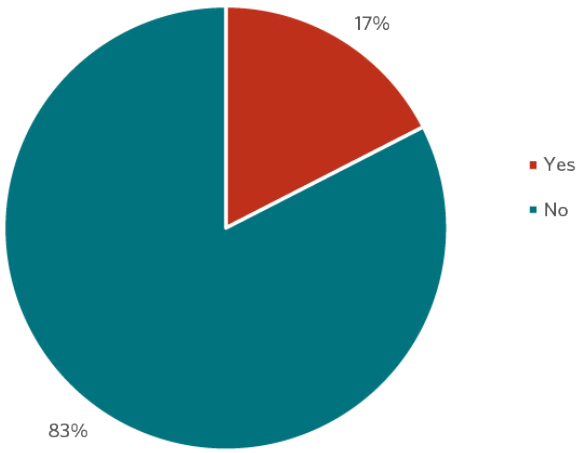


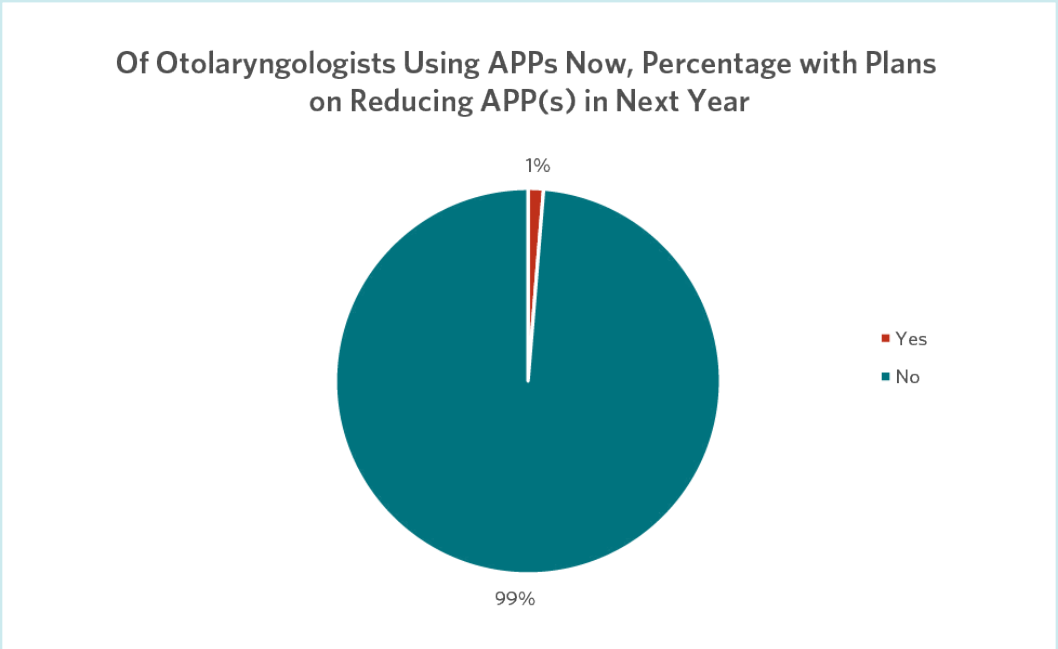


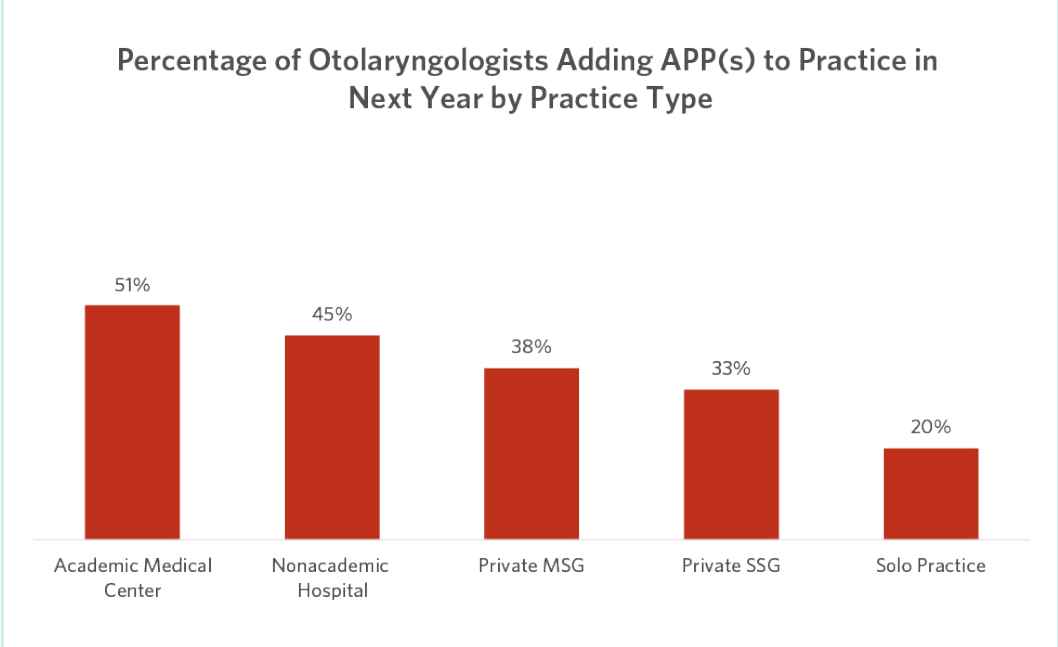
Dispersion of Number of APPs in an Otolaryngology Practice (All Practice Settings)



Of Otolaryngologists Not Using APPs, Percentage Planning on Adding APP(s) in Next Year




Of Otolaryngologists Using APPs Now, Percentage with Plans on Reducing APP(s) in Next Year
1%
99%
Yes
No


Percentage of Otolaryngologists Adding APP(s) to Practice in Next Year by Practice Type
51%
45%
38%
33%
20%
Academic Medical Center
Nonacademic Hospital
Private MSG
Private SSG
Solo Practice

Ratio of APPs to Otolaryngologists	Urban	Rural	*p* value
0	25.2%	37.0%	<0.001
0.01 to 0.24	24.2%	11.7%	
0.25 to 0.49	24.7%	19.1%	
0.5 or greater	25.9%	32.1%	

*Analyzed by the AUA as part of their RUCA analysis, based on lowest (most rural) RUCA in any office zip code

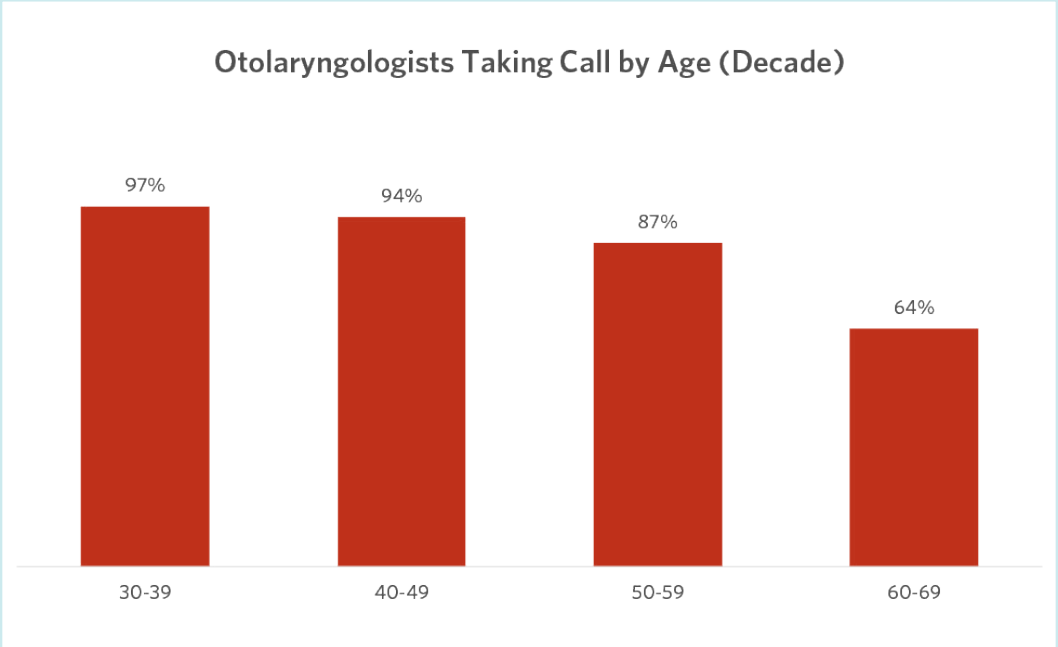
Advanced Practice Provider Commentary

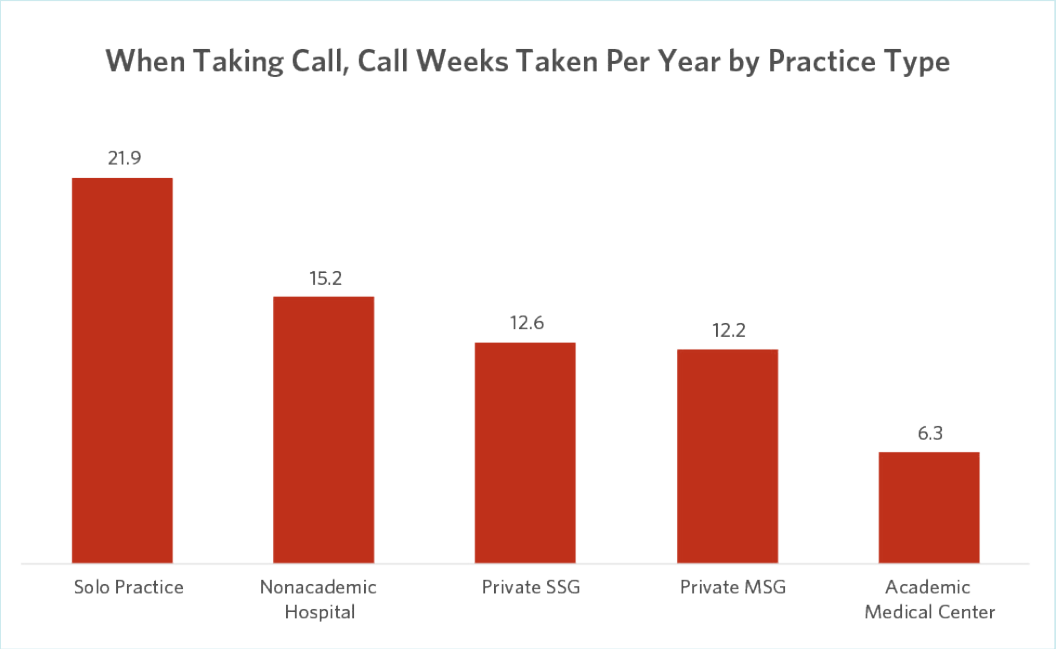
APPs have been growing in our field, and we sought to understand the current utilization and near-term growth across practice settings. Interestingly, private practice showed a somewhat dichotomous use of APPs, with solo practice showing double or triple the rate of utilization of APPs than private MSG and private SSG practices, respectively. Hospital-based practices were higher utilizers, on average. To the degree the practice type and APP utilization data can be extrapolated to the general otolaryngologist/practice nationally, the current otolaryngology APP supply is likely above previous high-end projections in our literature.

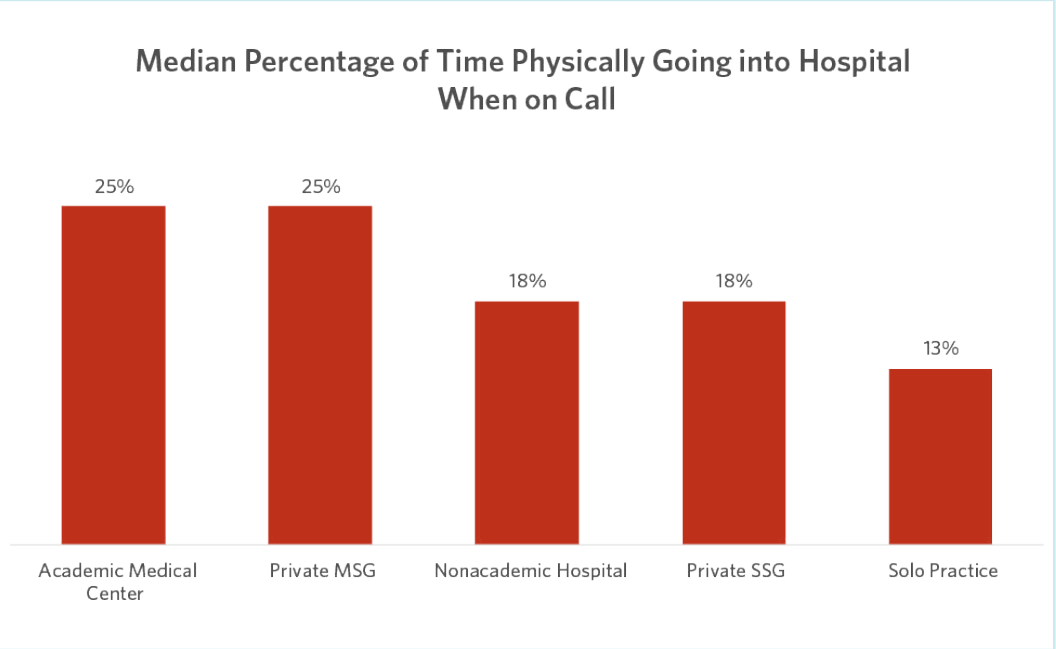
APP utilization will grow more in the near term. Nearly 75% of practices use APPs, and of the practices that do not, 17% plan on adding at least one APP in the next year. Almost all practices utilizing APPs plan on maintaining them. Hospital-based practices were already high utilizers on a per-otolaryngologist level, and both academic and nonacademic hospitals expect to do the most hiring of APPs in the next year at the practice level. Significant differences exist between urban and rural practice environments in terms of APP utilization, with rural practices tending to be bimodal with either no or high APP utilization. This area is ripe for further analysis and will be a future focus. Future areas of analysis should include considerations surrounding adding (or not) APPs, training, productivity, and procedures routinely handled.

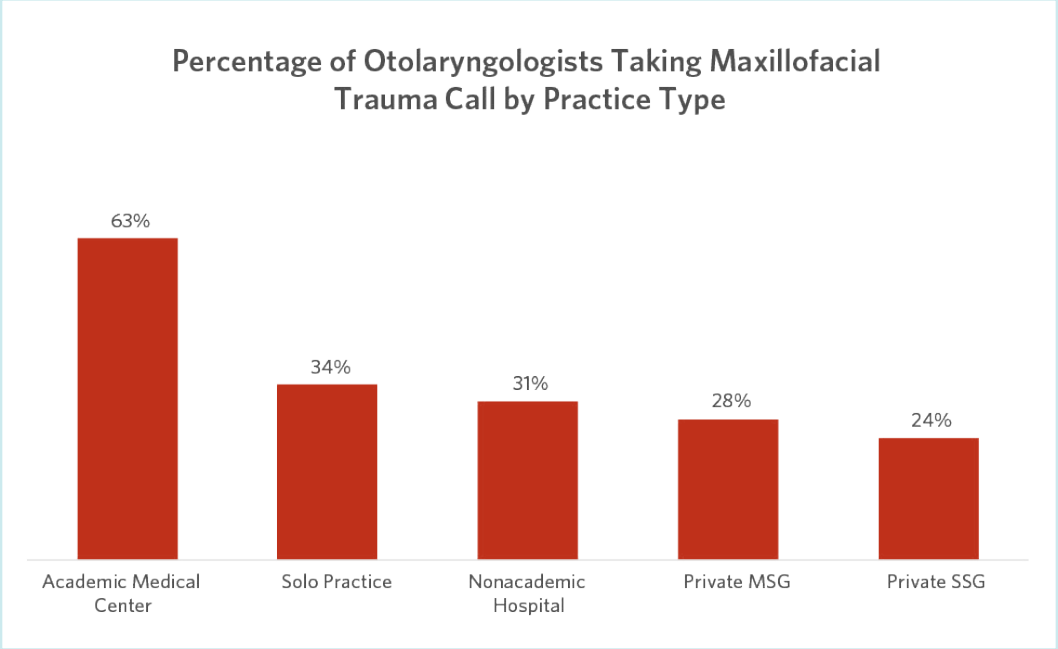
CALL


Otolaryngologists Taking Call by Practice Type
93%
87%
86%
85%
60%
60%
Nonacademic Hospital
Private SSG
Academic Medical Center
Private MSG
Solo Practice
VA


Otolaryngologists Taking Call by Age (Decade)
97%
94%
87%
64%
30-39
40-49
50-59
60-69


When Taking Call, Call Weeks Taken Per Year by Practice Type
21.9
15.2
12.6
12.2
6.3
Solo Practice
Nonacademic Hospital
Private SSG
Private MSG
Academic Medical Center


Median Percentage of Time Physically Going into Hospital When on Call
25%
25%
18%
18%
13%
Academic Medical Center
Private MSG
Nonacademic Hospital
Private SSG
Solo Practice



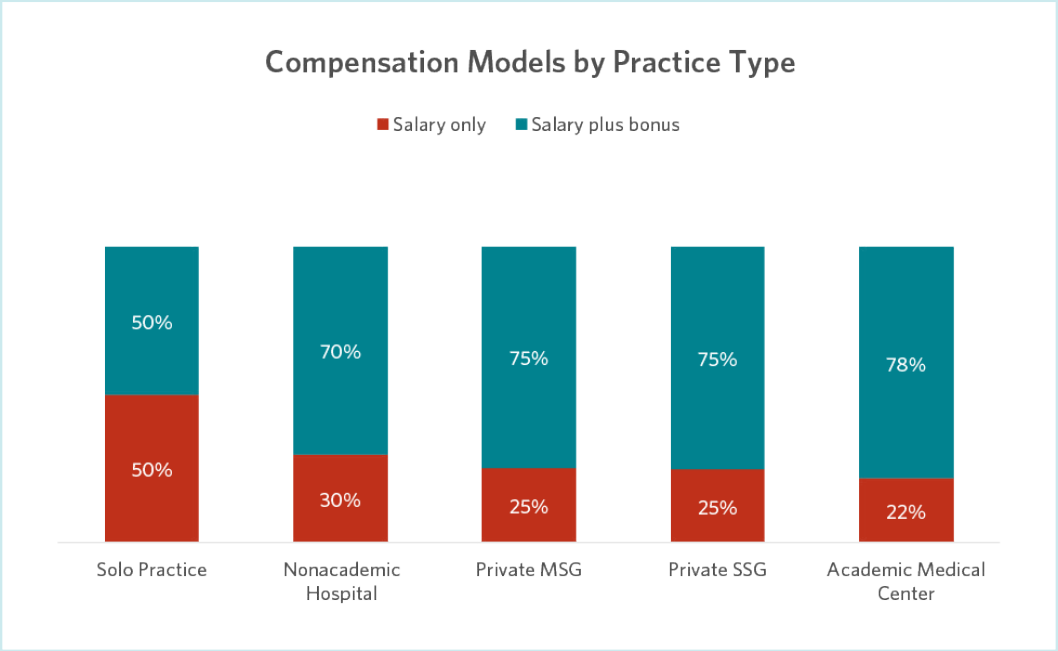
Call Commentary

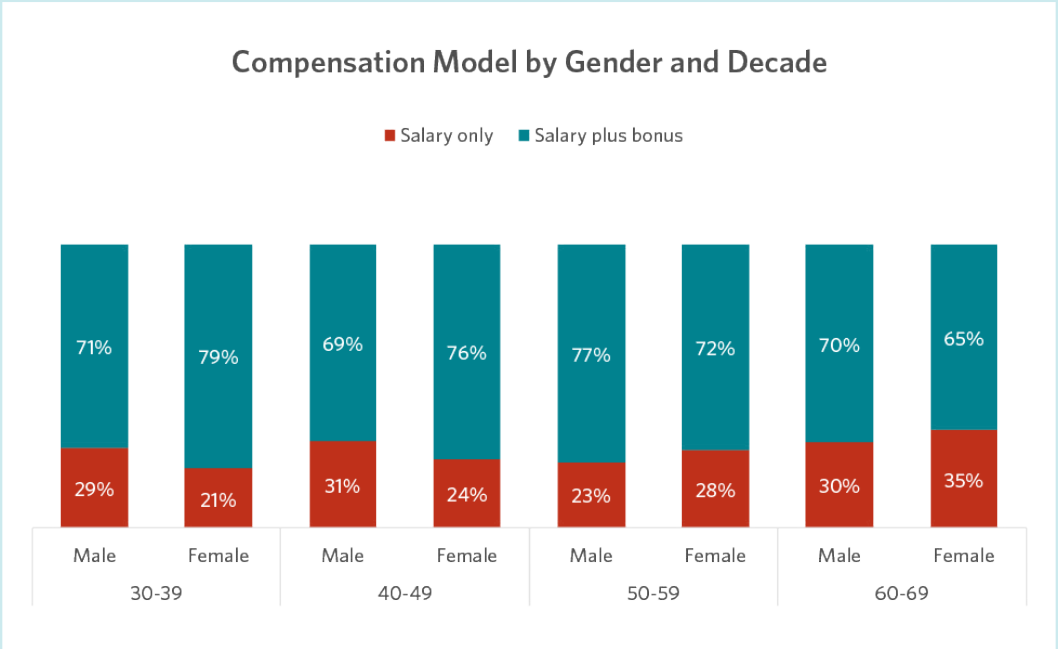
Otolaryngologists traditionally take call both for our patients and at facilities at which we are credentialed. As call is a significant part of our practices, with potential upsides and downsides, we sought to understand the impact of call across different practice settings. The vast majority of otolaryngologists take call, with the highest level occurring in nonacademic hospital settings. Interestingly, a significant drop-off occurred with solo practice, with only 60% of solo practitioners taking call—perhaps as a result of the significantly increased burden when they do take call, as noted by their 22 weeks per year average. Despite that burden, solo practitioners seem to have to go into the hospital at the lowest rate, whereas in the academic setting, the call burden was the lowest in terms of weeks but highest in terms of percentage of the time having to physically go in.

Otolaryngologists tend to take less call with age, with the most notable drop-off occurring in the seventh decade of life. Academic practices stood out as taking markedly more maxillofacial trauma call than other practice environments. As the next section on income shows, otolaryngologists are compensated at very different rates for taking call. Areas of future focus should include APP utilization and the impact of call on one's practice.

INCOME

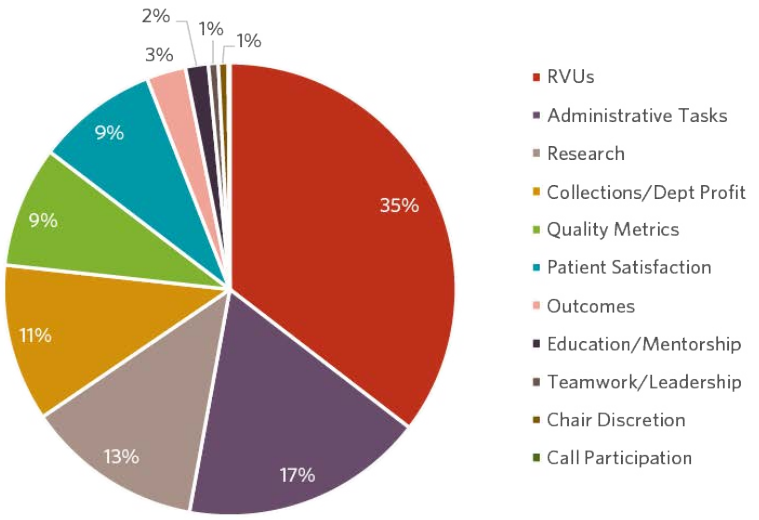
Compensation Models





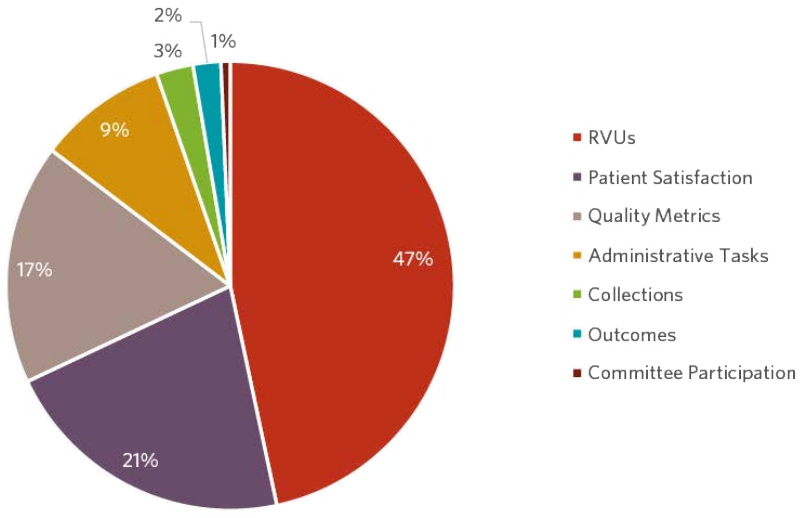
Bonus Structures by Practice Type

Bonus Metric Use in Academic Medical Centers, When Used

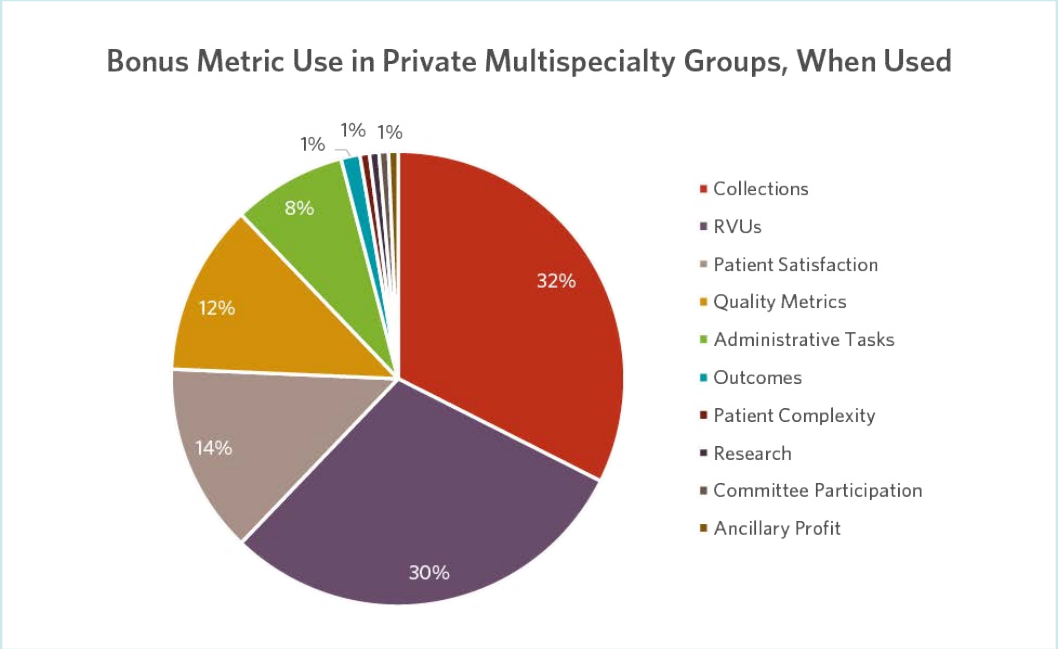


*Accounts for whether a bonus metric was used at all, whether in a singular manner or as part of multiple metrics

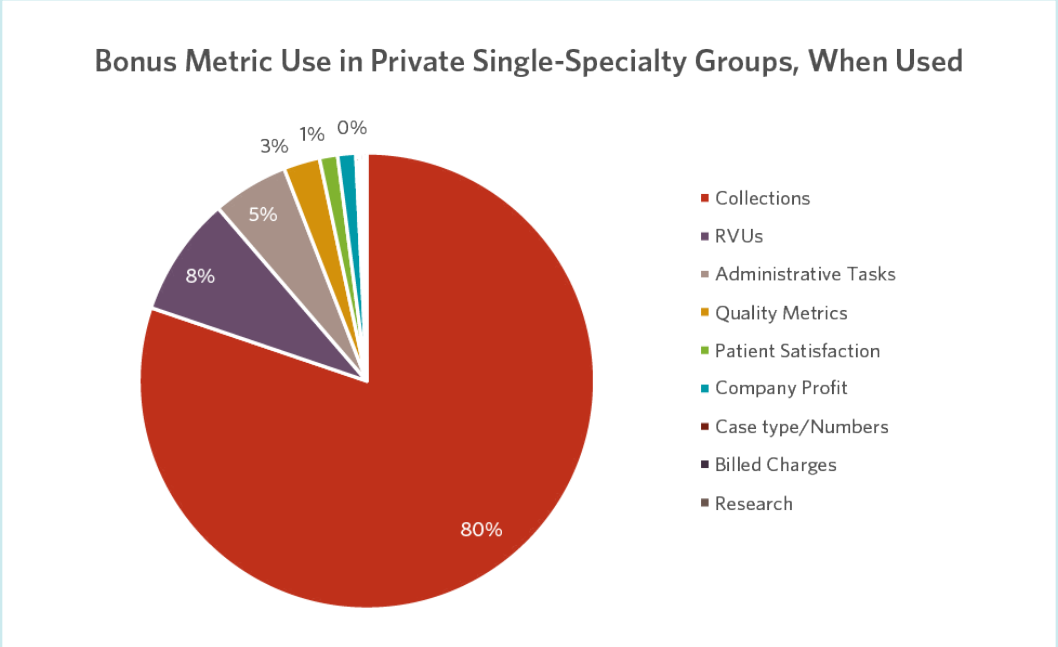
Bonus Metric Use in Nonacademic Hospitals, When Used



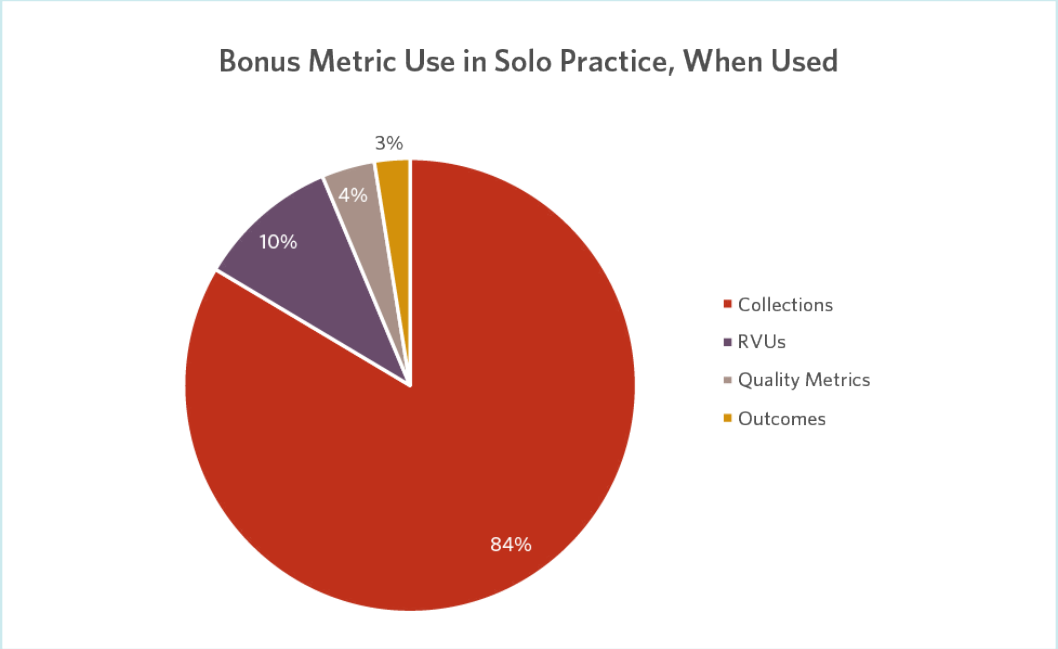
*Accounts for whether a bonus metric was used at all, whether in a singular manner or as part of multiple metrics



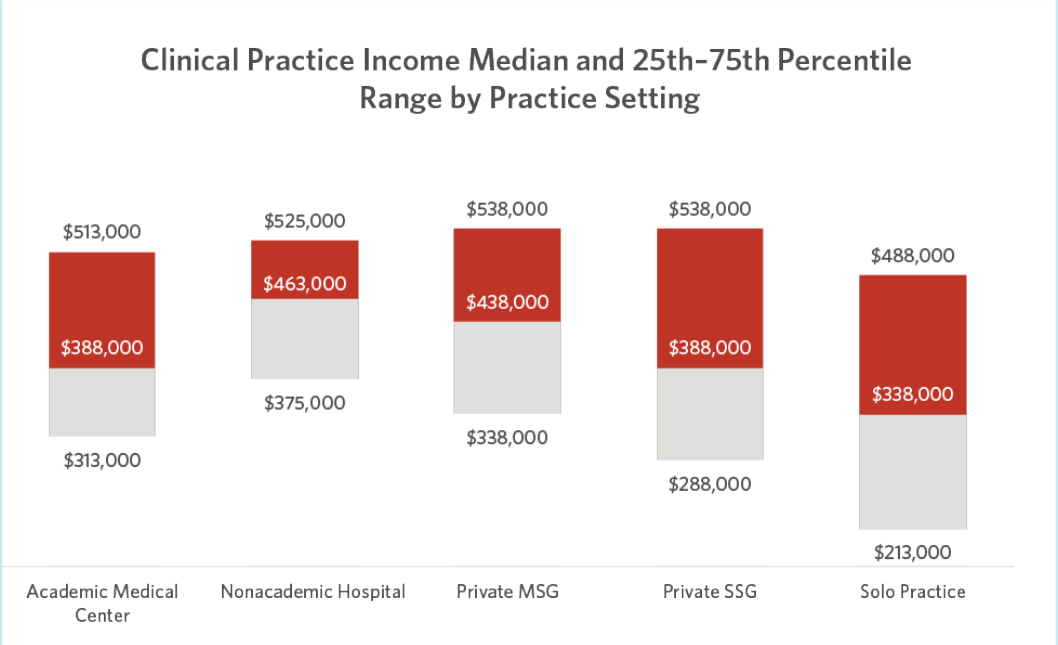
*Accounts for whether a bonus metric was used at all, whether in a singular manner or as part of multiple metrics

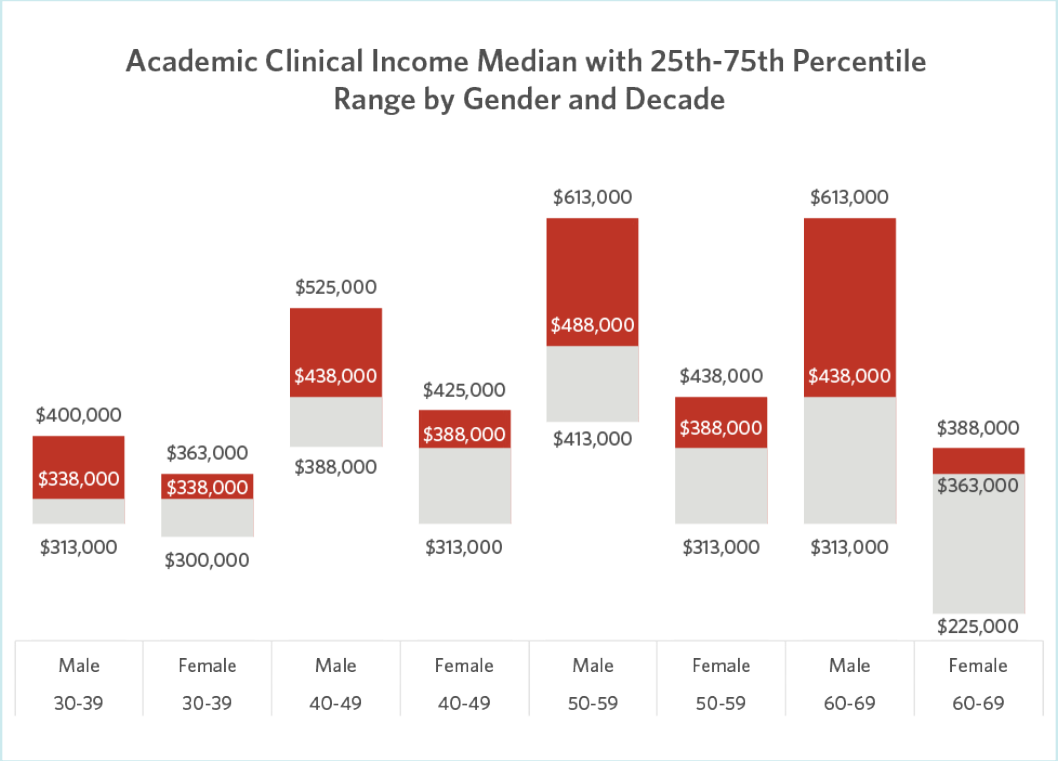


*Accounts for whether a bonus metric was used at all, whether in a singular manner or as part of multiple metrics



Clinical Practice Income





Multivariate Analysis on Clinical Income

2021 Clinical Practice Income (Excludes Ancillary or Call Income)			
Income Brackets Analyzed	$100k - $300k	$300k - $525k	$525k - $1M
Clinical Income Dispersion	~25%	~50%	~25%
Bracket Used for Significance Testing	**$525k - $1M**		

Variables with statistical significance on multivariate analysis:

1. Patients seen in a full workday
2. Average number of days spent in the OR per week
3. Ratio of APPs to otolaryngologists in the practice
4. Gender

2021 Clinical Income (Excluding Ancillary and Call Income) $525k-$1M

Patients Seen in a Full Workday	*n*	Odds Ratio (95% CI)	*p* value
20 or less	264	1.00 (ref)	N/A
21 to 25	262	1.169 (0.662, 2.064)	0.589
26 to 35	395	**2.19 (1.3, 3.688)****	**0.003**
36 or more	173	**3.876 (2.167, 6.933)****	**0.000**

2021 Clinical Income (Excluding Ancillary and Call Income) $525k-$1M

Average Number of Days Spent in the OR per Week	*n*	Odds Ratio (95% CI)	*p* value
1 or less	412	1.00 (ref)	N/A
1.5	300	1.045 (0.673, 1.622)	0.844
2	201	1.484 (0.917, 2.4)	0.108
2.5 or more	181	**2.206 (1.321, 3.682)****	**0.002**

2021 Clinical Income (Excluding Ancillary and Call Income) $525k-$1M

Ratio of APPs to Otolaryngologists	*n*	Odds Ratio (95% CI)	*p* value
0	289	1.00 (ref)	N/A
0.01 to 0.24	243	1.386 (0.804, 2.389)	0.240
0.25 to 0.49	264	1.373 (0.81, 2.329)	0.239
0.5 or more	298	**1.89 (1.19, 3.001)****	**0.007**

2021 Clinical Income (Excluding Ancillary and Call Income) $525k-$1M

Gender	*n*	Odds Ratio (95% CI)	*p* value
Female	234	1.00 (ref)	N/A
Male	860	**2.373 (1.445, 3.897)****	**0.001**

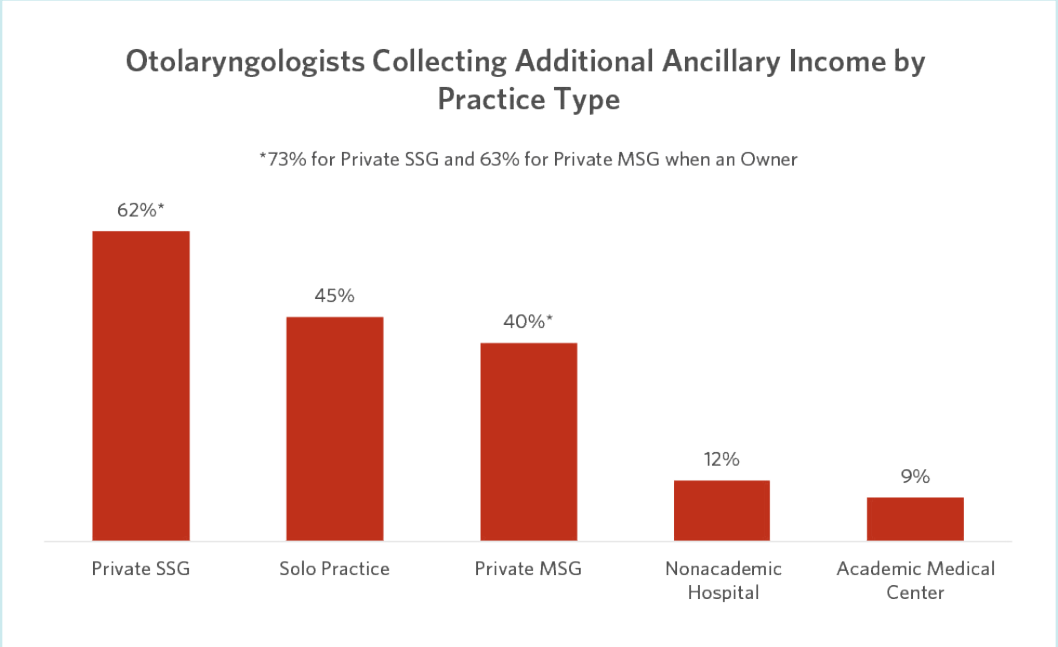
See Appendix for detailed description of all input variables

Odds Ratio: The odds ratio represents the odds that this group will fall into the high income ($525k-$1M) group compared with the reference group. If the odds ratio is greater than 1, the outcome is more likely. If the odds ratio is less than 1, the outcome is less likely.

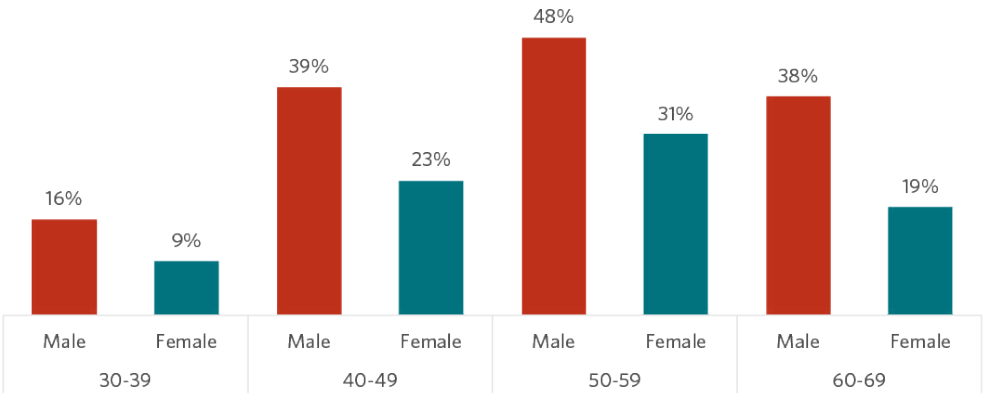
95% CI: This is the 95% Confidence Interval for the Odds Ratio. If 1.00 falls within the confidence interval, the odds ratio is not significant and there is not enough evidence to say that the selected group has more or less probability of falling in the high income group. If the confidence interval does not include 1.00, the odds ratio is significant at the 95% confidence level.

**The Odds Ratio is significant at the 95% confidence level.

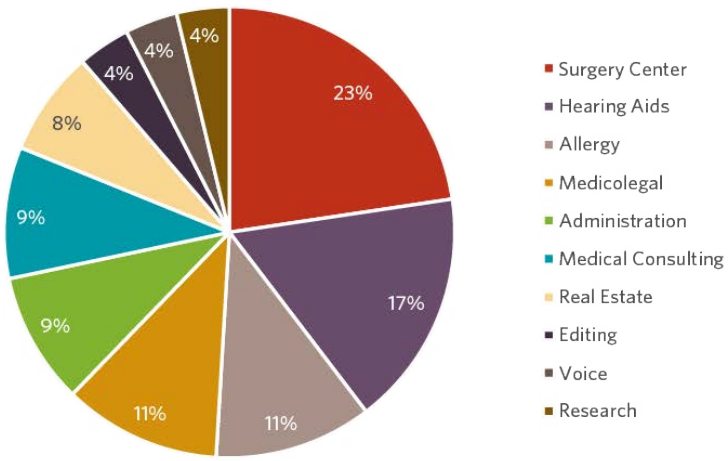
Ancillary Income



Ancillary Income Collected by Gender and Decade

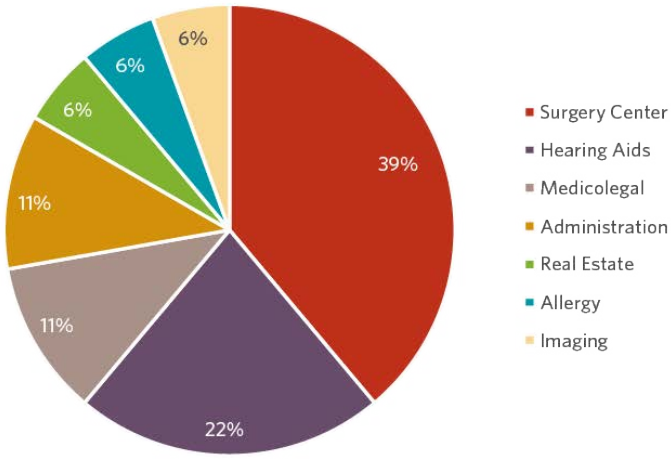


Ancillary Income Type Distribution in Academic Medical Center Otolaryngologists, When Received



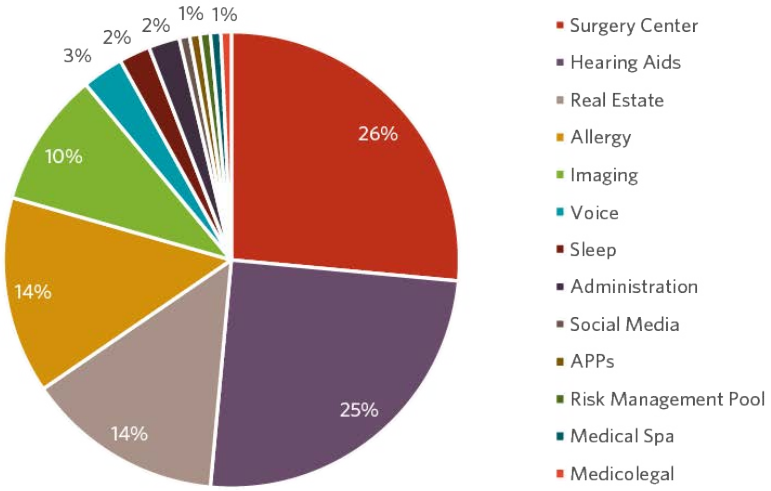
*Accounts for all ancillary income types listed, whether single or multiple

Ancillary Income Type Distribution in Nonacademic Hospital Otolaryngologists, When Received



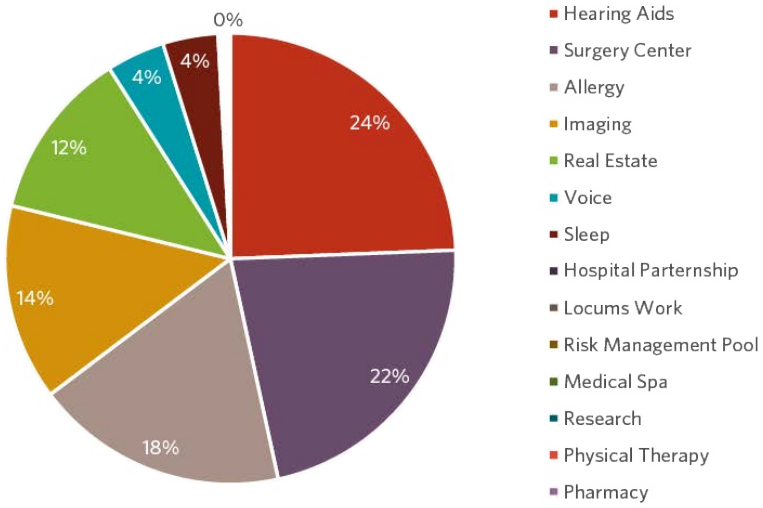
*Accounts for all ancillary income types listed, whether single or multiple

Ancillary Income Type Distribution in Private Multispecialty Group Otolaryngologists, When Received



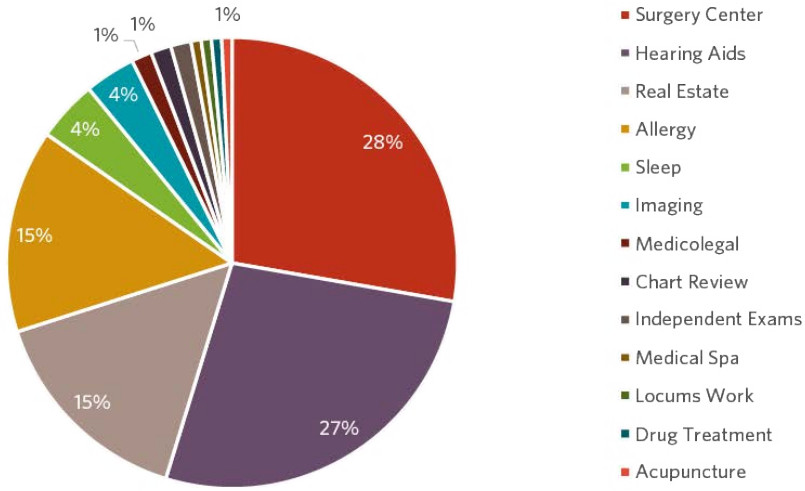
*Accounts for all ancillary income types listed, whether single or multiple

Ancillary Income Type Distribution in Private Single-Specialty Group Otolaryngologists, When Received

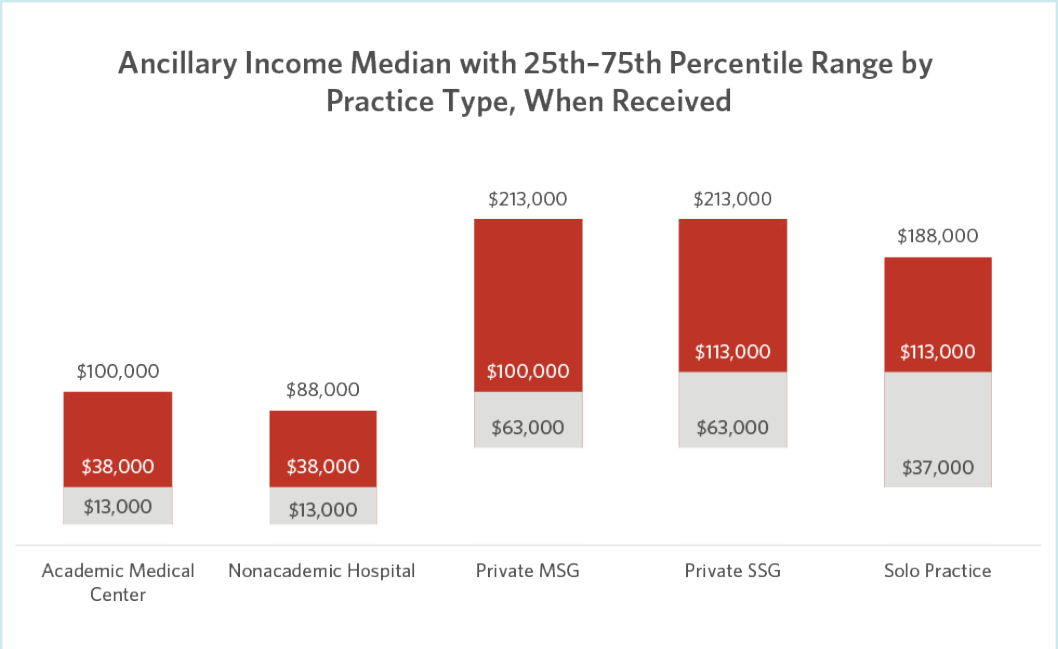


*Accounts for all ancillary income types listed, whether single or multiple

Ancillary Income Type Distribution in Solo Practice Otolaryngologists, When Received



*Accounts for all ancillary income types listed, whether single or multiple



Multivariate Analysis on Combined Clinical and Ancillary Income

2021 Combined Clinical and Ancillary Income (Excludes Call Income)			
Income Brackets Analyzed	$100k - $325k	$325k - $575k	$575k - >$1M
Bracket Used for Significance Testing	**$575k - >$1M**		

Variables with statistical significance on multivariate analysis:

1. Patients seen in a full workday
2. Average number of days spent in the OR per week
3. Ratio of APPs to otolaryngologists in the practice
4. Gender
5. Compensation model
6. Employment status

2021 Combined Clinical and Ancillary Income (Excluding Call Income) $575k - >$1M

Patients Seen in a Full Workday	*n*	Odds Ratio (95% CI)	*p* value
20 or less	265	1.00 (ref)	N/A
21 to 25	262	1.151 (0.64, 2.068)	0.639
26 to 35	395	**2.929 (1.732, 4.954)****	**0.000**
36 or more	174	**4.15 (2.298, 7.492)****	**0.000**

2021 Combined Clinical and Ancillary Income (Excluding Call Income) $575k - >$1M

Average Number of Days Spent in the OR per Week	*n*	Odds Ratio (95% CI)	*p* value
1 or less	412	1.00 (ref)	N/A
1.5	300	1.148 (0.75, 1.756)	0.524
2	202	1.227 (0.757, 1.989)	0.406
2.5 or more	182	**2.046 (1.227, 3.413)**	**0.006**

2021 Combined Clinical and Ancillary Income (Excluding Call Income) $575k - >$1M

Ratio of APPs to Otolaryngologists	*n*	Odds Ratio (95% CI)	*p* value
0	289	1.00 (ref)	N/A
0.01 to 0.24	243	**1.858 (1.096, 3.149)****	**0.021**
0.25 to 0.49	265	1.666 (0.993, 2.795)	0.053
0.5 or more	299	**2.092 (1.331, 3.288)****	**0.001**

2021 Combined Clinical and Ancillary Income (Excluding Call Income) $575k - >$1M

Gender	*n*	Odds Ratio (95% CI)	*p* value
Female	234	1.00 (ref)	N/A
Male	862	**3.29 (1.934, 5.595)****	**0.000**

2021 Combined Clinical and Ancillary Income (Excluding Call Income) $575k - >$1M

Compensation Model	*n*	Odds Ratio (95% CI)	*p* value
Salary Only	321	1.00 (ref)	N/A
Salary Plus Bonus	775	**1.714 (1.172, 2.506)****	**0.005**

2021 Combined Clinical and Ancillary Income (Excluding Call Income) $575k - >$1M

Employment Status	*n*	Odds Ratio (95% CI)	*p* value
Employee	623	1.00 (ref)	N/A
Partner	337	**2.101 (1.165, 3.788)****	**0.014**
Sole Owner	136	**3.275 (1.228, 8.734)****	**0.018**

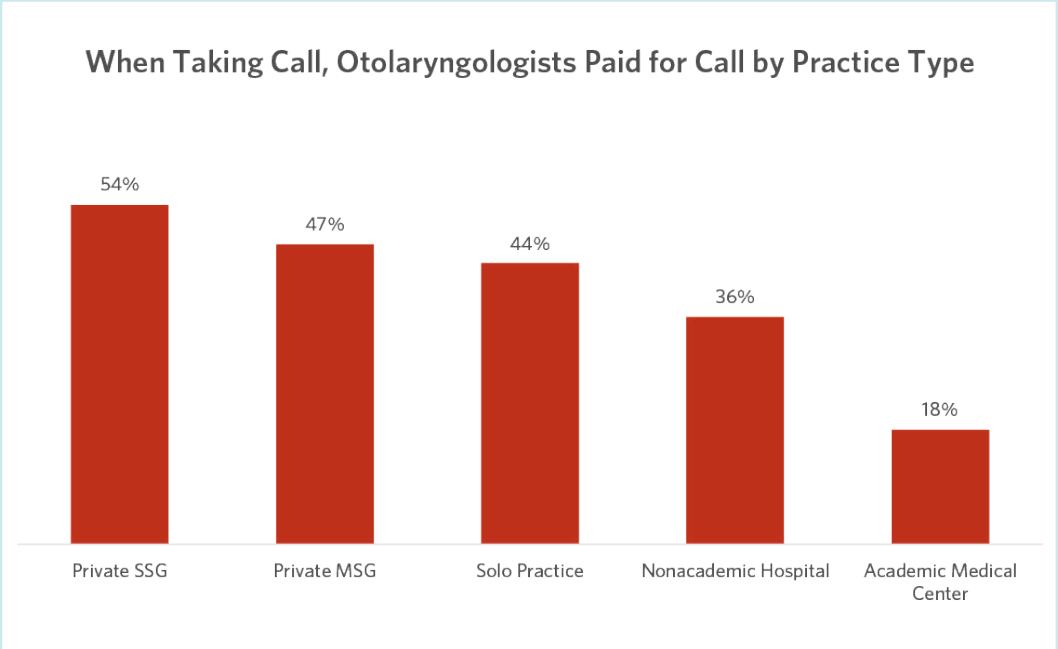
See Appendix for detailed description of all input variables

Odds Ratio: The odds ratio represents the odds that this group will fall into the high combined income ($575k->$1M) group compared with the reference group. If the odds ratio is greater than 1, the outcome is more likely. If the odds ratio is less than 1, the outcome is less likely.

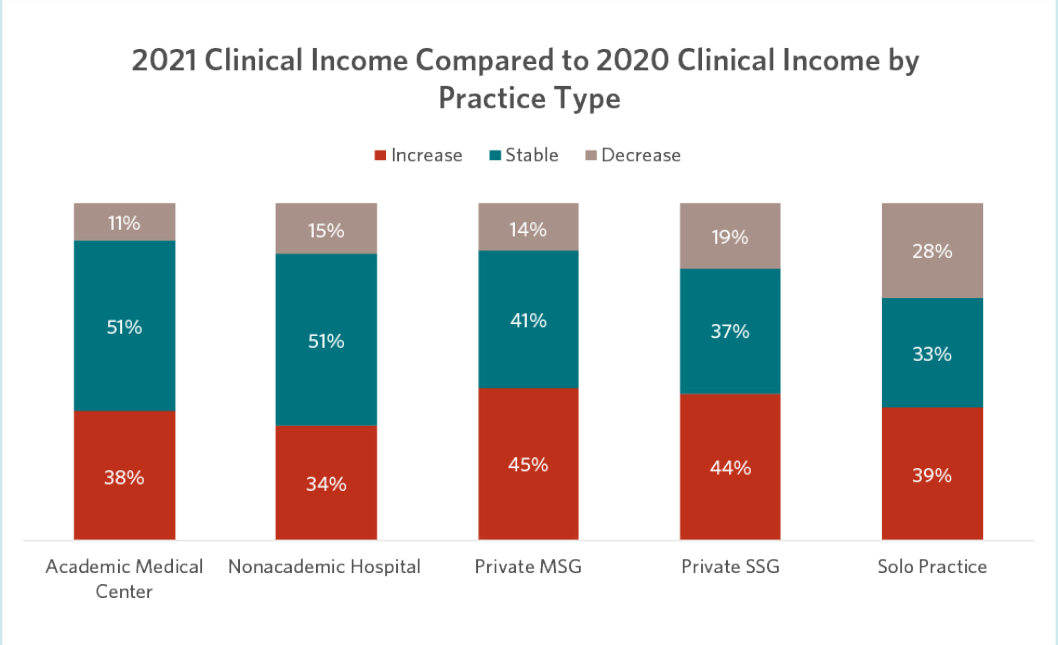
95% CI: This is the 95% Confidence Interval for the Odds Ratio. If 1.00 falls within the confidence interval, the odds ratio is not significant and there is not enough evidence to say that the selected group has more or less probability of falling in the high income group. If the confidence interval does not include 1.00, the odds ratio is significant at the 95% confidence level.

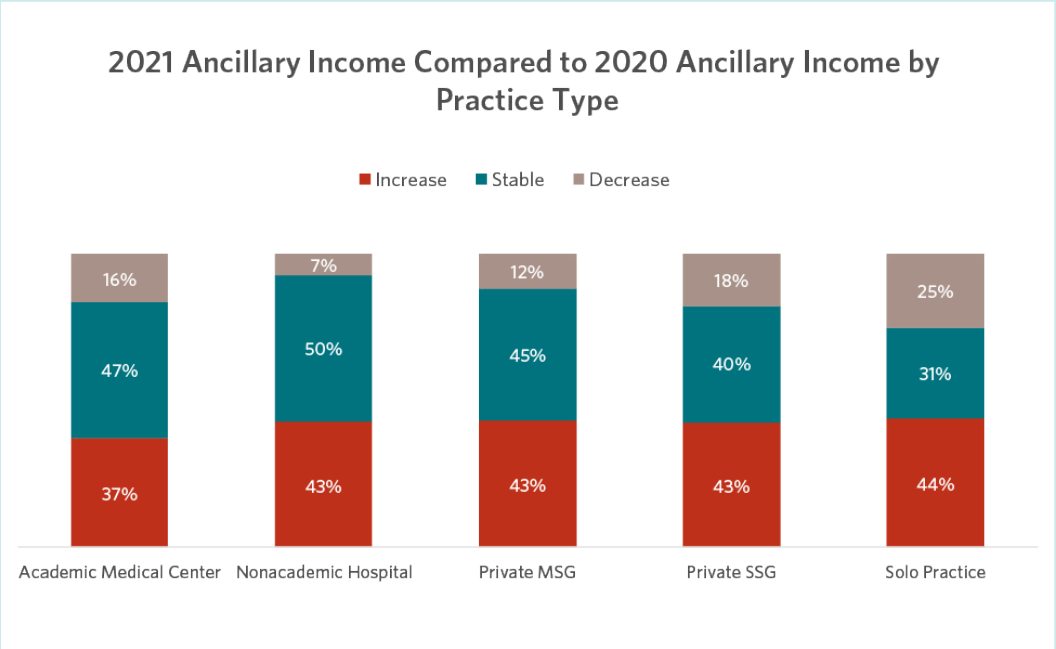
**The Odds Ratio is significant at the 95% confidence level.

Call Income



Income Change





Income Commentary

Income is a significant driver of decision-making. Productivity can be incentivized along these lines, business investment for patients affects it, job choice and the dynamism of our job market is, in part, driven by it, and we can look to income as a measuring device of how we are treated in the job market. In this short time we have amassed the largest otolaryngology income benchmarking database, and hopefully it will guide decision-making and shape policy.

With the exception of solo practice, other main practice environments had compensation models dominated by salary plus bonus compared with a simple salary by a roughly 3:1 margin. Interestingly, male compensation models held relatively steady across the four decades analyzed, largely favoring a salary plus bonus model at around 70%. However, female compensation models appear to be trending away from a salaried model to a salary plus bonus model, with nearly 80% of women in their 30s working under a salary plus bonus model compared with 65% in their 60s.

When looking at bonus structures by practice type, we saw wide variation. Many of us who are compensated under a bonus structure have multiple metrics used. These were all summated to look at the overall frequency of each metric, allowing for write-in responses. While both academic and nonacademic hospital practice models are hospital employed and have relative value units (RVUs) as the most common bonus driver (though not the majority factor in either), significant differences exist regarding other bonus drivers otherwise. For example, collections or departmental profit was much more commonly described as a bonus driver in academics, whereas patient satisfaction was more than twice as likely to be a bonus driver in nonacademic hospital environments.

Private practices differed significantly with respect to bonus drivers, but this was mainly true for private MSGs where a much larger percentage of the bonus drivers were based on RVUs. This may relate to the business structure or outside ownership type. Private SSGs and solo practice was dominated by collections-based bonus drivers when working under the bonus model.

When looking solely at clinical practice income, the highest median and narrowest interquartile range was seen in nonacademic hospital practices. Private practices, especially solo practice, tended to have wider interquartile ranges than hospital-based practices. Some of this should be interpreted with caution given potential lagging pandemic effects. What will be more telling is following these trends moving forward.

We had the most robust clinical income data across decades and gender for academic practices, which are described here. Marked disparities appear to exist with respect to clinical income by gender, especially starting after the first decade of practice. Since these apparent disparities were not a statistical analysis, nor did they control for other relevant factors, we sought to understand the drivers of high clinical income (determined to be $525k - $1M, based on the highest quartile) with a multivariate analysis. This analysis was performed by the AUA data team.

We controlled for 22 different variables based on our survey (see Appendix). What we found was that four factors stood out as statistically significant drivers of high clinical income:

1. Patients seen in a full workday
2. Average number of OR days per week
3. APP to otolaryngologist ratio in the practice
4. Gender

Unsurprisingly, otolaryngologists who see 26 or more patients in a full workday are much more likely to have a high clinical income compared with those who saw 20 or less in a full workday. If an otolaryngologist is in the OR 2.5 or more days per week (versus 1 or less), they are also more likely to have a high clinical income. While much of our practice is in and has shifted to the clinic, this finding supports the idea that an efficient referral system with more time in the OR is still more financially rewarding.

Our APP to otolaryngologist ratio finding is new and should give us something to ponder in the setting of declining reimbursements, rising costs, and EHR burdens. APPs increase our productivity, but it appears that a ratio of 0.5 or more APPs to otolaryngologists in the practice makes it more likely (over having no APPs) that one will earn a higher clinical income. Perhaps this finding is implicitly understood, as we saw only 27% of otolaryngologists do not use APPs and of those who don't, 17% plan on adding them in the next year.

Consistent with published literature, we found a significant gender disparity with respect to high-end clinical income attainment. Males were over twice as likely to be high clinical income earners. We didn't control for weeks worked in the year or clinical FTEs. Also, it should be stated that income that is collections-based is nonlinear due to overhead hurdles that must be met first, making slight productivity differences on the margin (shown earlier) have outsized impacts. Despite this latter point, we did not analyze more deeply why productivity differences seemed to exist and if the underlying inputs were similar. At the very least, our findings highlight important benchmarking data that are important to an overall compensation package that job seekers should be aware of. These data will allow our colleagues to accurately assess the true value of the offer they are considering.

Many otolaryngologists receive income through ancillary offerings, and ancillary income was found to be significantly more common in private practice compared with hospital-employed practices. This finding was especially true when assessed based on ownership, where 73% of private SSG and 63% of private MSG otolaryngologists collected ancillary income. This compared with 9% and 12% among

academic and nonacademic hospital otolaryngologists, respectively. We also saw gender disparities with respect to whether ancillary income was received. These disparities were further analyzed below.

When ancillary income was received, surgery center investments and hearing aids dominated as the top ancillary income drivers across all practice types. When ancillary income was received, significant differences existed by amount between private practices versus hospital-employed practices. Note that the ancillary income described is when it was received, which needs to be discounted for if it was received when trying to compare total income across practice types.

To analyze total income drivers (excluding call income), we again turned to our multivariate analysis. Here we found six variables that made it statistically more likely that one would be a high total income earner ($575k - >$1M):

1. Patients seen in a full workday
2. Average number of OR days per week
3. APP to otolaryngologist ratio in the practice
4. Gender
5. Compensation model
6. Employment status

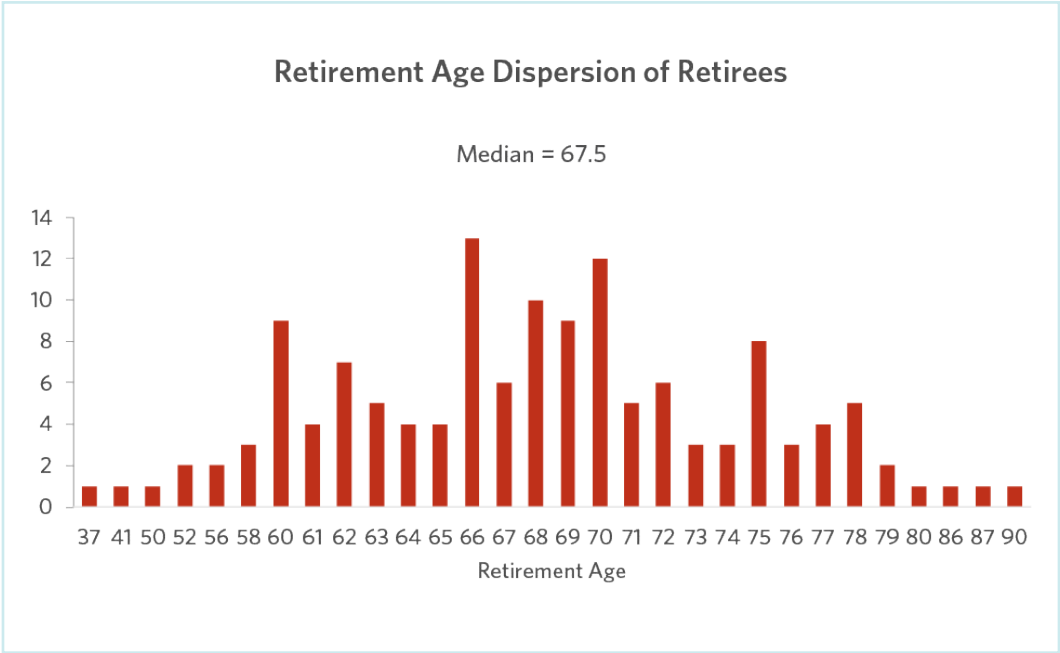
The first four still held as significant drivers of high combined income, which is unsurprising and were discussed above. However, the APP effect seemed more robust, crossing multiple ratios above 0.

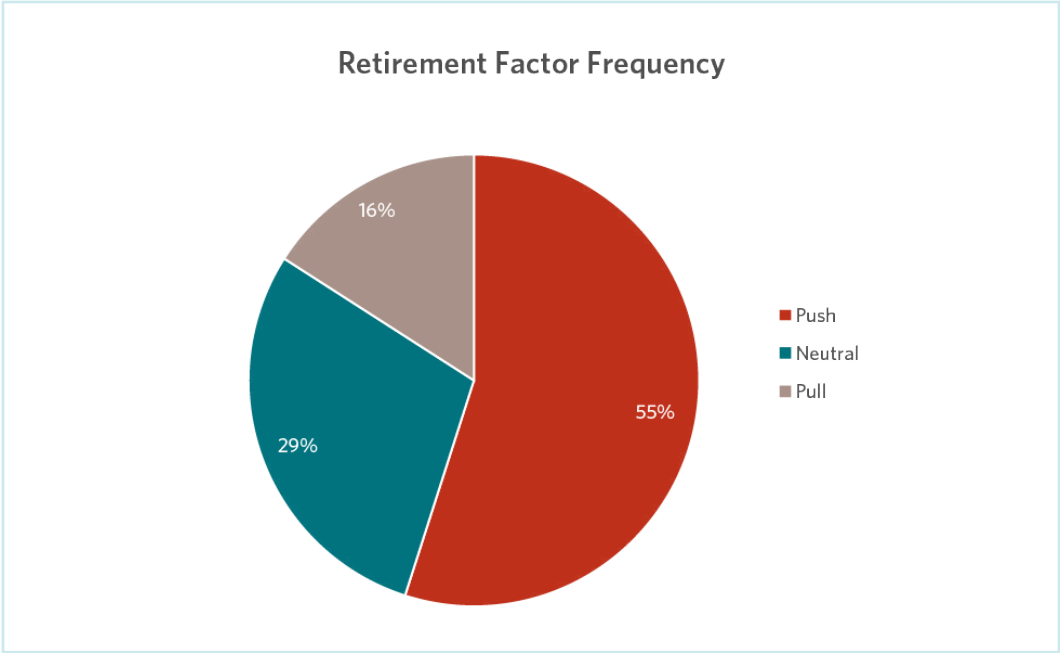
Interestingly, working under a compensation model of salary plus bonus (versus salary only) made it 1.7 times as likely that an otolaryngologist would have a high combined income. It appears that, broadly speaking, bonus structures don't create higher clinical income, but they do drive more business to ancillary and therefore total income. Therefore, unsurprisingly, those making investments in these ancillary services as partners and sole owners were found to be over two-to-three times more likely to earn a higher total income than otolaryngologists working in an employed status.

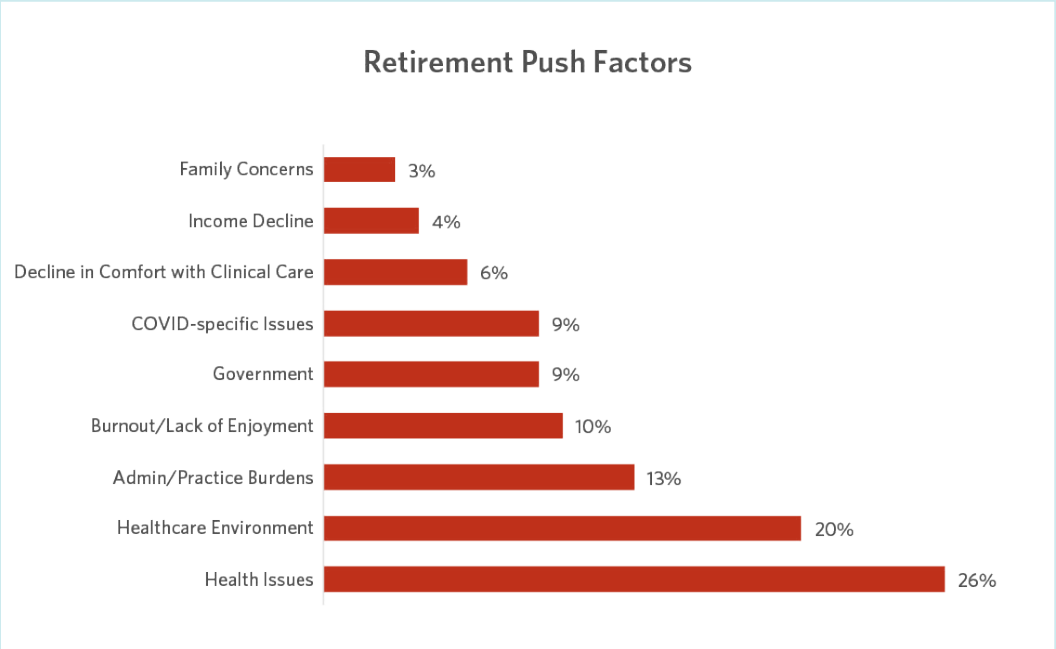
While not included in the above clinical, ancillary, or combined income, call income can be an important income driver when received. Practices seem to be compensated at disparate rates when taking call, with private SSG otolaryngologists being most commonly compensated at 54% and academic otolaryngologists compensated 18% of the time for call.

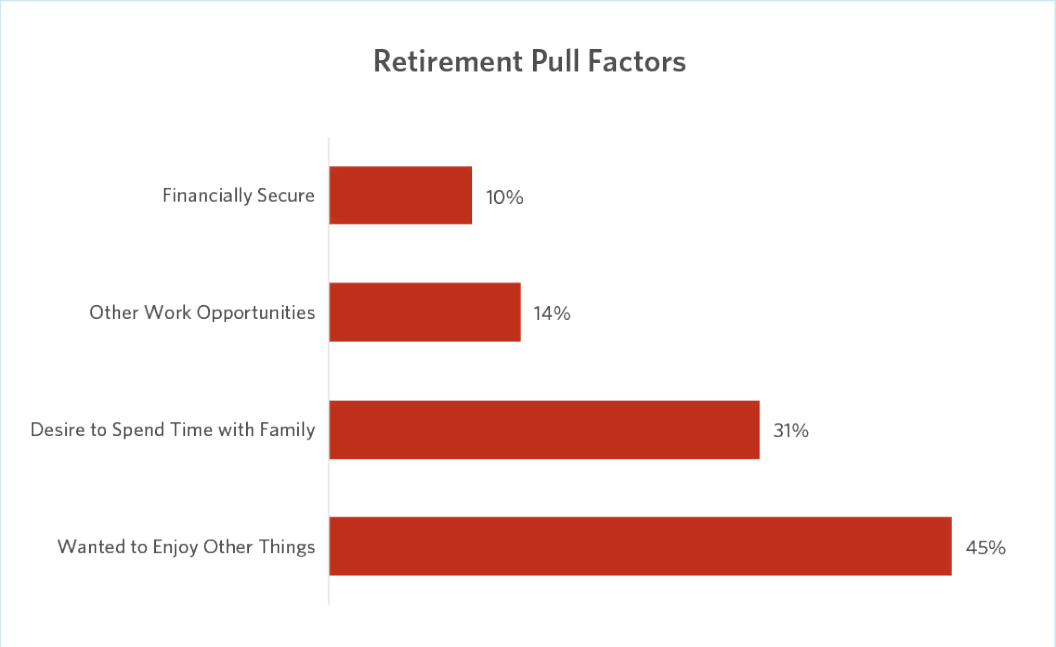
When comparing clinical and ancillary income for 2021 with 2020, most otolaryngologists reported either increased or stable income. Solo practice otolaryngologists seemed to experience the largest drop on both fronts with roughly one-fourth stating they saw income declines. This may reflect a more difficult negotiating position or less ability to capture COVID relief and may also have something to do with the disparate insurance plans over the next year. As we all see rising costs with inflation, policy and strategy should focus on how we can best serve all practices. We will need to track these data moving forward to better appreciate market trends.

RETIREMENT

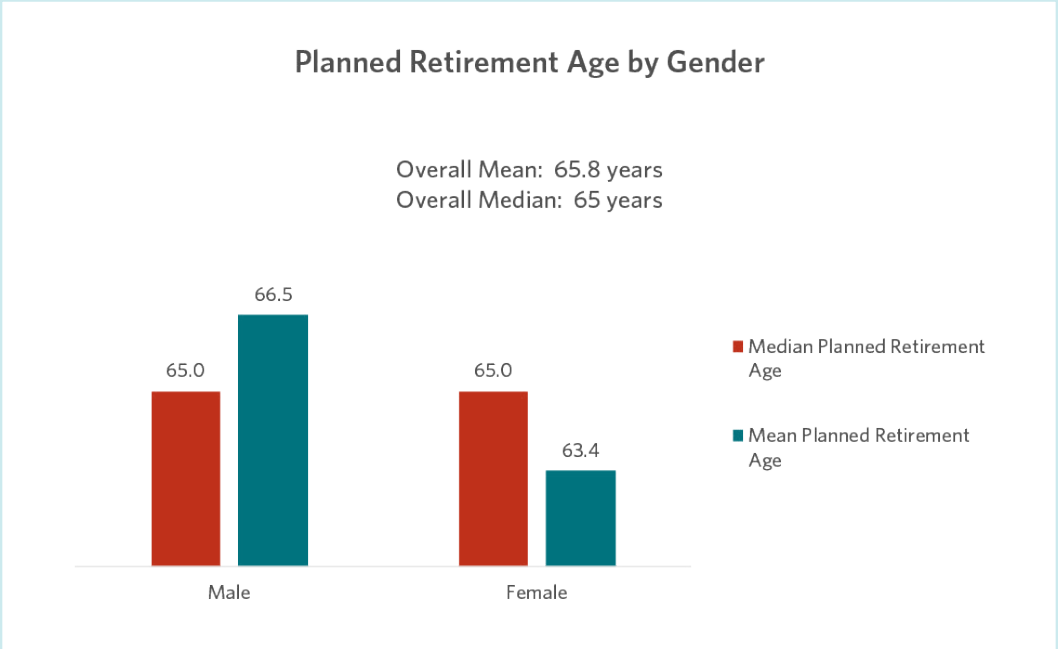

Retirement Age Dispersion of Retirees
Median = 67.5
14
12
10
8
6
4
2
0
37 41 50 52 56 58 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 86 87 90
Retirement Age

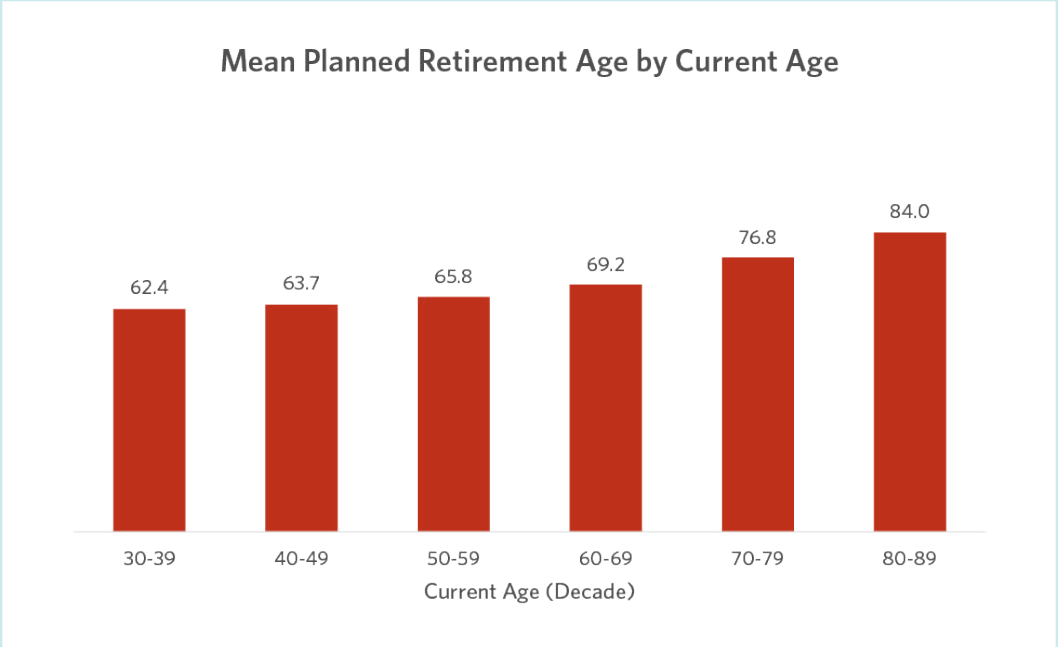

Retirement Factor Frequency
16%
55%
29%
Push
Neutral
Pull


Retirement Push Factors
Family Concerns
3%
Income Decline
4%
Decline in Comfort with Clinical Care
6%
COVID-specific Issues
9%
Government
9%
Burnout/Lack of Enjoyment
10%
Admin/Practice Burdens
13%
Healthcare Environment
20%
Health Issues
26%


Retirement Pull Factors
Financially Secure
10%
Other Work Opportunities
14%
Desire to Spend Time with Family
31%
Wanted to Enjoy Other Things
45%

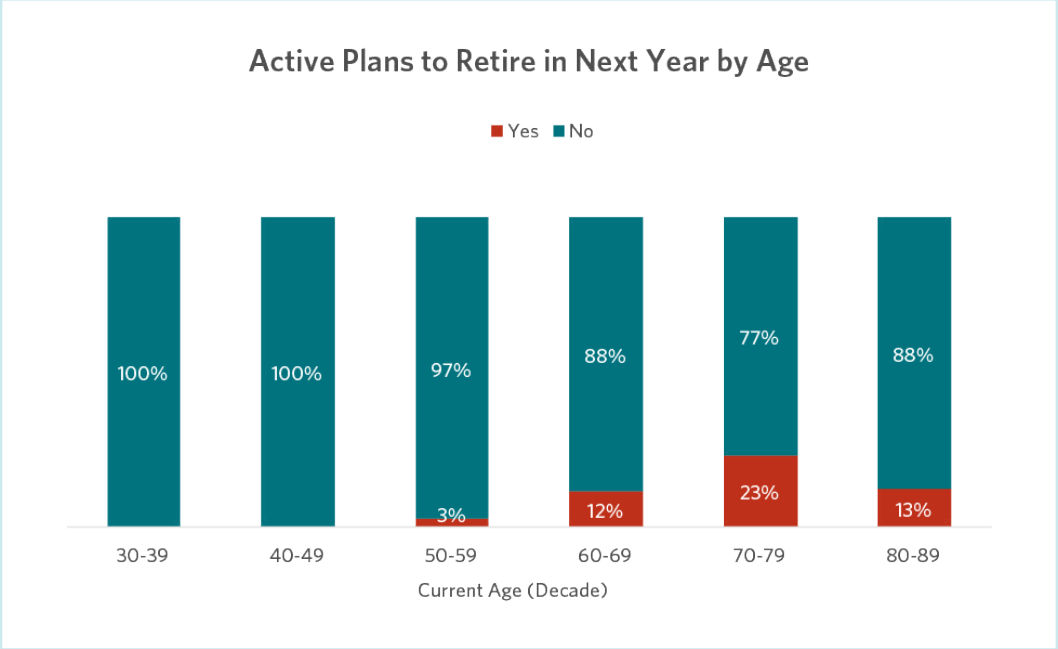
Retirement Plans for Actively Practicing Otolaryngologists



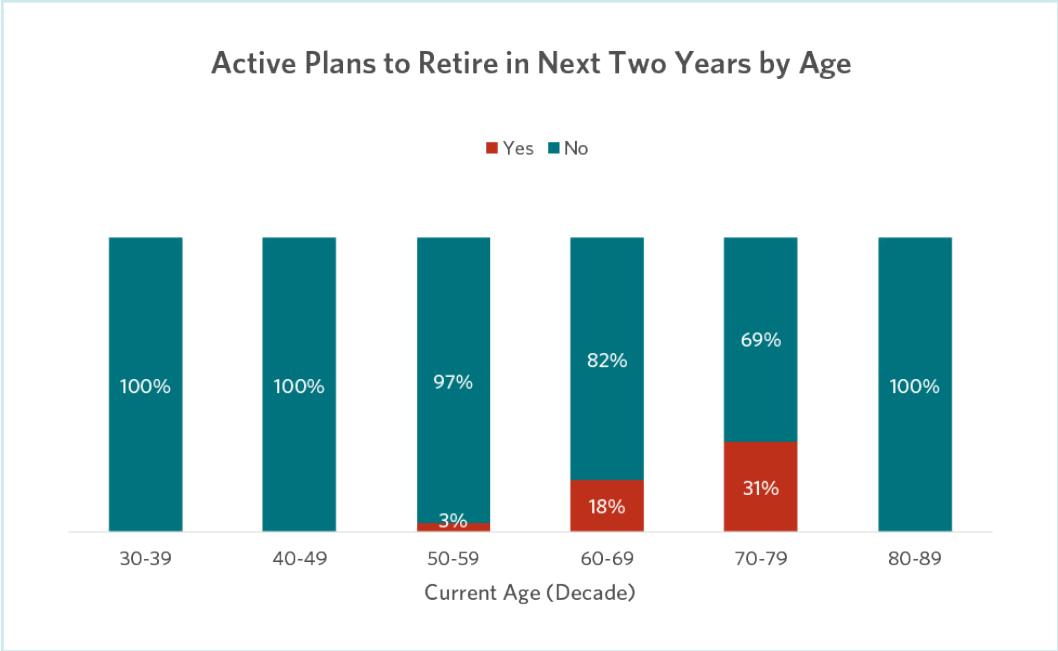


Otolaryngologists with Active Plans to Retire	
Next 12 Months	4.3%
Next 24 Months	5.4%
Overall 2 Year Attrition	9.5%

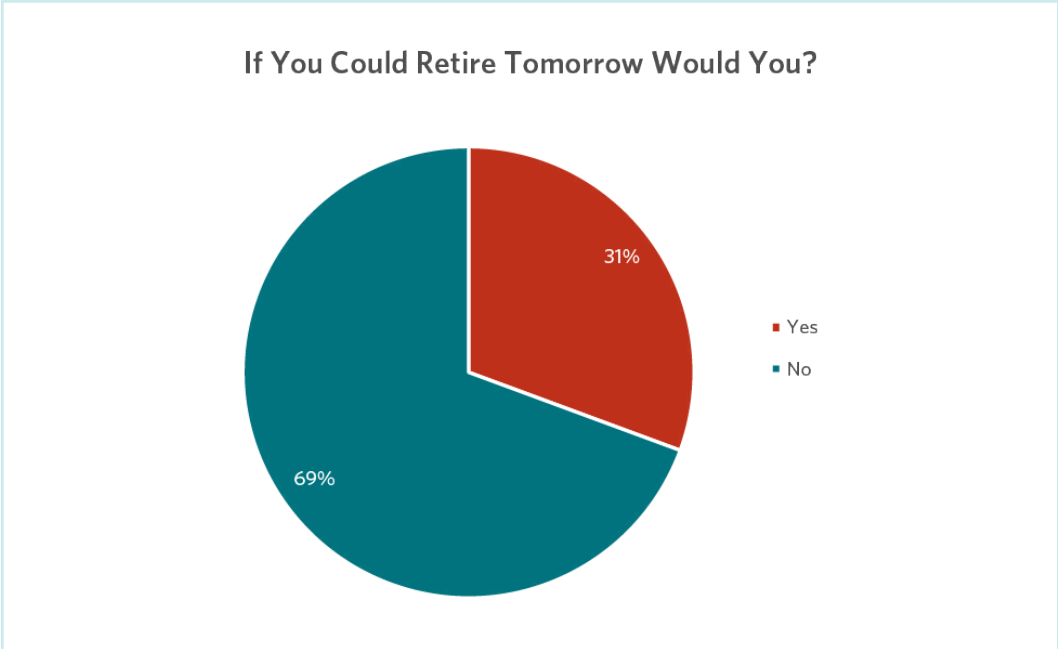
*Those planning on retiring in the next 12 months were not included in the next 24 months calculation

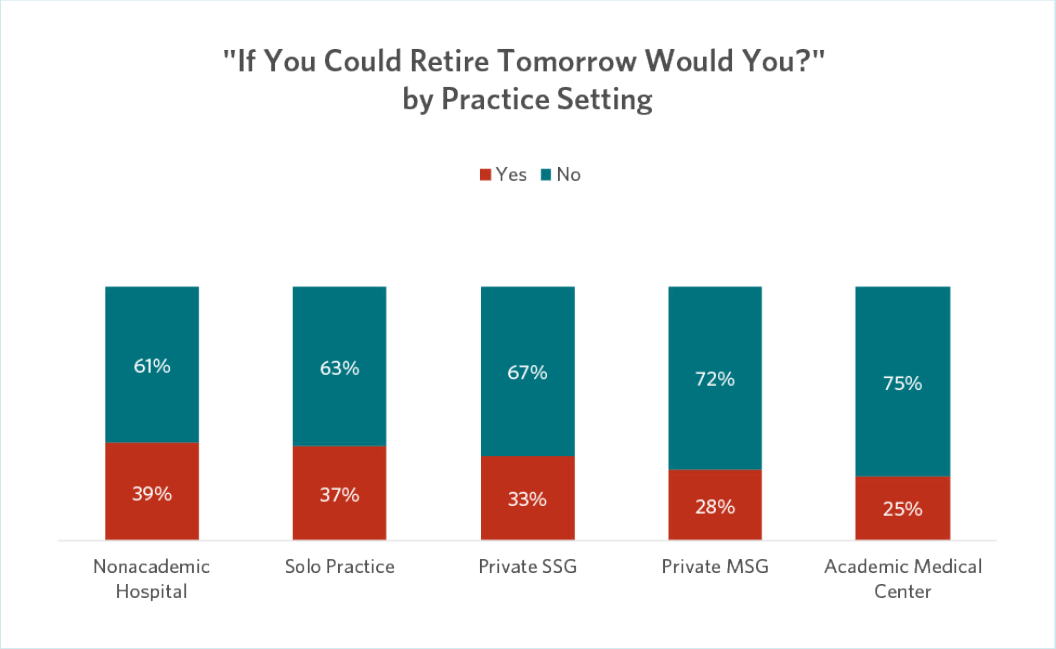


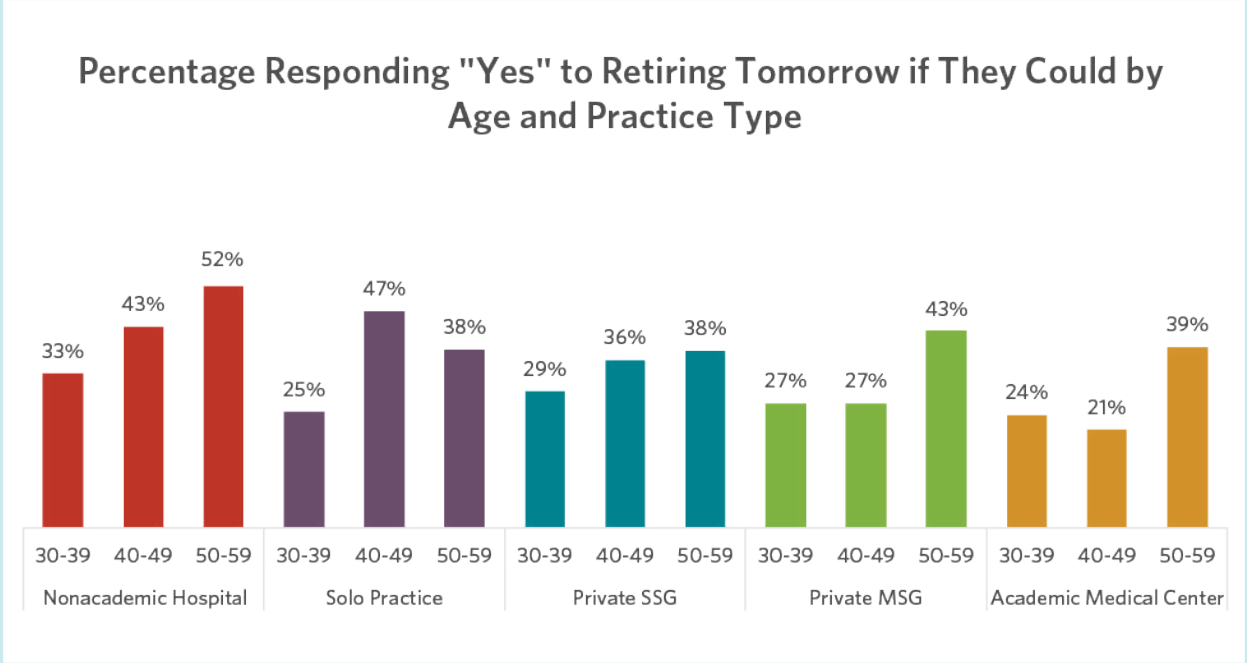
Age of Those With Active Plans to Retire in the Next Year	
Mean	65.6
Median	65



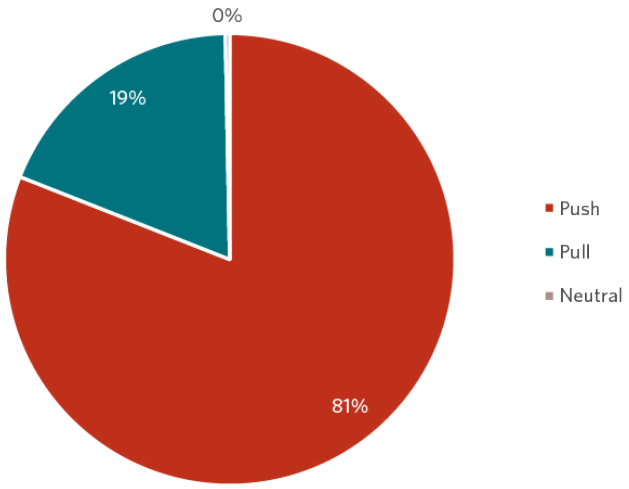
Potential Early Retirement Drivers



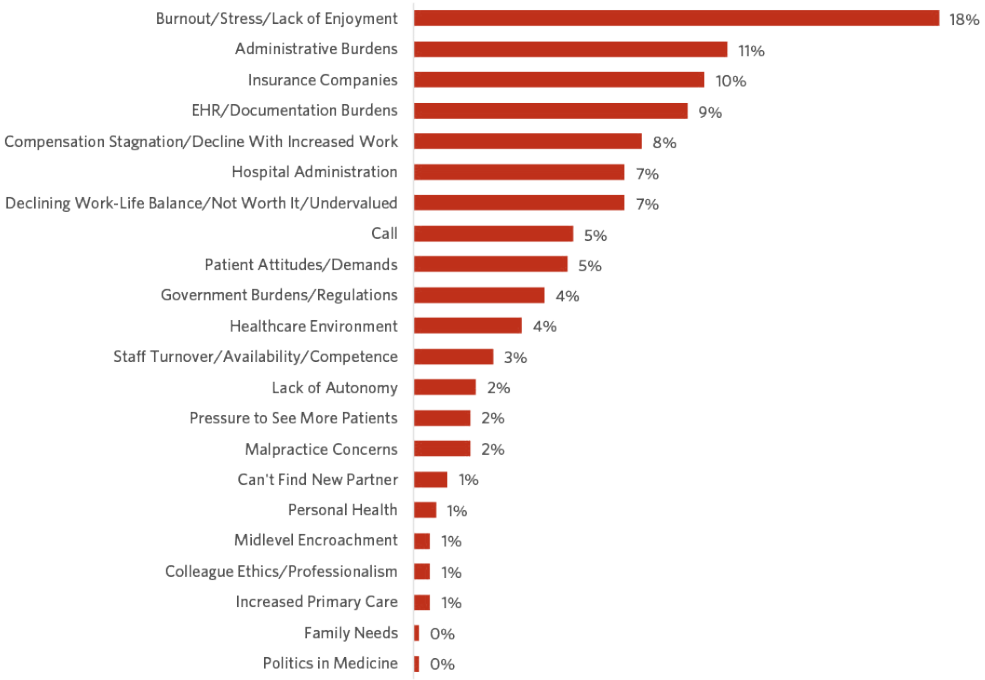

"If You Could Retire Tomorrow Would You?"
by Practice Setting
Yes
No
61%
39%
63%
37%
67%
33%
72%
28%
75%
25%
Nonacademic Hospital
Solo Practice
Private SSG
Private MSG
Academic Medical Center

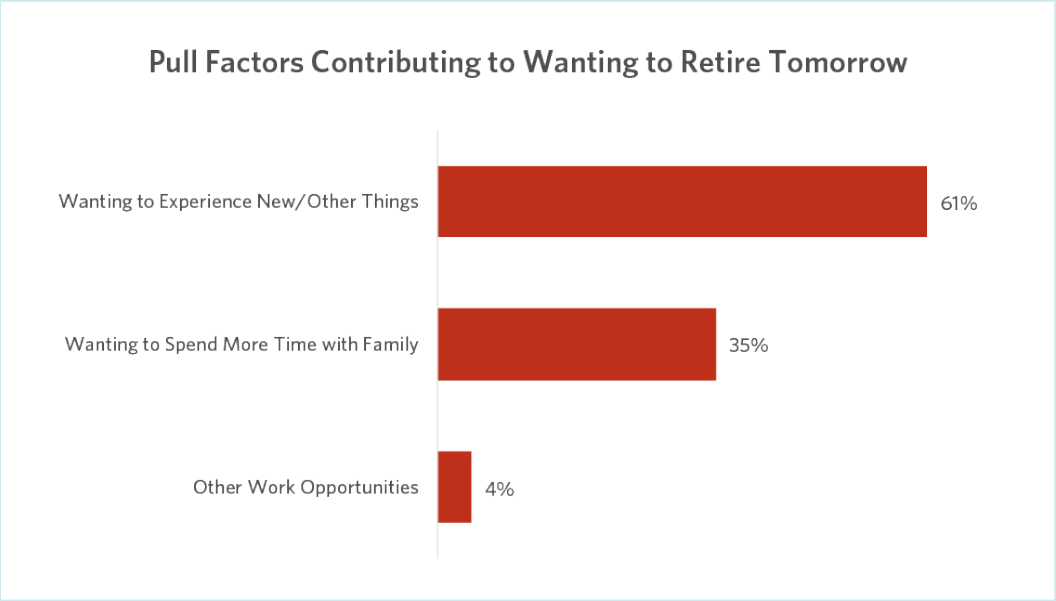

Percentage Responding "Yes" to Retiring Tomorrow if They Could by Age and Practice Type
33%
43%
52%
25%
47%
38%
29%
36%
38%
27%
27%
43%
24%
21%
39%
30-39
40-49
50-59
Nonacademic Hospital
Solo Practice
Private SSG
Private MSG
Academic Medical Center

Factors Contributing to Wanting to Retire Tomorrow



Push Factors Contributing to Wanting to Retire Tomorrow





Retirement Commentary

When considering the current and future workforce situation, reviewing both the entry to and exit from the practice of OHNS are equally important. When and why an individual retires from medical practice is a personal decision motivated by a weighted set of common circumstances that will vary based on individual experiences. It is critical to not only know the longevity of an otolaryngologist's participation in the workforce, but also the factors leading to both the premature exit from practice as well as those that lead to extending one's career beyond the median expected age of retirement. This study has identified the most common factors influencing this decision.

The median age of retirement of those taking the survey who were already retired was 67.5 years old.

In general, the factors influencing the retirement decision can be grouped into two categories: Those that push people from practice and those that pull them into retirement. Those who have already retired indicated that the factors that pushed them from practice were more significant than those that pulled them into retirement by a 55% to 16% margin. The principal factors that pushed them into retirement were health (26%), the healthcare environment (20%), administrative/practice burdens (13%), burnout (10%), and the government (9%). Income decline or money (4%) did not seem to be a factor in these individuals' decision to retire. Two major factors pulled retirees toward retirement: enjoying other things (45%) and spending more time with family (35%).

Actively practicing otolaryngologists planned to retire at a median age of 65 years old, the same for both men and women, which was two years lower than retired physicians. However, the mean retirement of 65.8 years indicates more general practice longevity, most notably driven by men with a mean planned retirement at 66.5 years compared with 63.4 years for women. The age of planned retirement increased gradually by decile with those 30-39 years old planned retirement at 62.4 years old while those 70-79 years old plan to retire at 76.8 years old. One must factor in that the older age groups have already self-selected longer careers, so this statistic alone is of limited predictive value. However, tracking these data moving forward will be important to see if we are witnessing generational attitudinal shifts in work and planned time in the workforce.

Those physicians who are planning to retire in the next year had a mean age of 65.8 years old with the vast majority being in the 60-79 year-old age range with only 3% being 50-59 years old. Those planning to retire in two years showed similar age dispersions as those planning on retiring in one year, with the exception that fewer physicians 80 and older had two-year retirement plans.

Of particular interest is the fact that 4.3% stated that they have active plans to retire in the next year. Of those who didn't have such plans, 5.4% stated that they did have active plans to retire in the next two years. The upshot is that 9.5% of our current workforce may be gone in these two years we are currently in. Even at the most conservative supply estimates, this leaves us with a net deficit of roughly 300 otolaryngologists over this two-year stretch. This should raise concerns for access and sharpen our policy focus on the drivers of retirement.

We asked one final question about retirement that was very revealing. Participants were asked, "If you could retire tomorrow, would you?" A startling 31% responded, "Yes." When broken down by practice type, the nonacademic hospital-employed group were the most likely to want to retire at 39%, followed by solo practitioners (37%), while the academic practitioners had the lowest at 25%. In each of five practice types, the age group 50-59 were most likely to want to retire, though the drivers inspiring potential early exit seem to hit nonacademic hospital practice environments earlier. Of the 31% that said they would retire tomorrow if they could, 81% felt they were being pushed out of medicine while 19% were being pulled into retirement. The major factors pushing otolaryngologists out of practice were burnout (18%), administrative burden (11%), insurance companies (10%), EHRs (9%), and compensation stagnation (8%). The two most common factors pulling them into retirement were experiencing new things (61%) and spending more time with family (35%).

This initial retirement and attitudinal snapshot was invaluable, but following the trends seen in this year's survey will be vital, particularly whether the stressors remain the same. The answer to that question will help guide our organizational advocacy strategy as healthcare delivery evolves over the next five-to-seven years.

LOOKING FORWARD

Our Task Force is honored to be part of this initial and ongoing effort to understand our workforce. The macroeconomic forces that shape our workforce are powerful and ever-changing. These forces shape patient access, the cost of care, our practices' ability to thrive, and our well-being. As a result, our healthcare landscape is dynamic–what may be true one year may not be in three years. Therefore, we need to pay attention to our workforce and monitor it as a routine discipline. And, in that effort we plan to make our workforce transparent to enable better decision-making and to highlight areas of concern so we can do our best to address them.

We extend our thanks to the participants who provided critical data by answering our survey inquiries. We trust that those reading this study will choose to participate in this year's survey. The most effective way to provide for a more clear and determinative future is to be an AAO-HNS member and be an active participant in our workforce survey. We have and will continue to gather important information regarding the evolution of your practice situation and needs. These data you provide can be translated into advocacy on the national stage for our patients and each other.

We were not able to describe as completely as desired all practice environments, age groups, etc., mainly due to the low rate of responses in these categories. We, therefore, urge all those individuals not seeing their practices described to complete future surveys and encourage your colleagues to do likewise.

Of particular concern is the lack of resident and fellow participation. By our calculations, the resident response rate was less than 10%. We need robust responses from this segment and, as a result, we are placing a clarion call to all residents to respond to our surveys and program directors to help with this aim. This group is our future, and we need to understand their needs and what shapes their decisions. We also need to ensure responses are widely representative of resident sentiments. This group has the most to gain from these surveys as they make decisions on fellowship, location of practice, and type of practice. We will make a concerted effort next year to attract more responses from residents, both by including a Section for Residents and Fellows-in-Training (SRF) member on our Task Force and being more active with the academic organizations.

Resident training and program growth is something we haven't consistently tracked historically, but we should continue to monitor this closely. We have seen significant growth both in new programs and graduates recently. Is this too much? While this can't yet be answered with definitive clarity, what can be stated is that we ignore supply inputs to our detriment. Our population is not growing in the manner previously predicted, and an oversupply brings separate but as important concerns as an undersupply does. What may be predicted for the generic physician workforce may not be our fate. We also need to be attentive to the attrition side of our supply—a staggering 9.5% have indicated they have plans to retire in the two years since our survey. This loss, if realized, would likely leave us with a net deficit over two years, despite the historically high graduation numbers.

Note that most of our questions (and resultant tables) were physician/practice focused and didn't dive into the more difficult yet revealing workforce subject matter that patients care more about: access and skill set delivery. Access isn't simply defined by our access points (various practice locations) but more importantly by time—how long does it take to be seen? This discovery process is a difficult endeavor, but we must focus on that science if we are to understand and improve our patients' most basic needs. The second issue is whether we are bringing the skill sets that patients need to the locations of need. Here too, this analysis is quite difficult and will likely involve working

across AAO-HNS committees and even with the administrator organization, ASCENT (Administrator Support Community for ENT). While difficult, we cannot shy away from this task because our patients demand this.

In regard to the question modules, some will repeat while others will change over time. This process will be iterative, with some questions and their responses highlighting future focus areas. Your free text responses are a perfect example and will allow for better response categories in the future. We should also question our questions and ask whether they are delivering the best and most reliable data. Fellowship utilization, patients seen per day, and total time worked per day inquires likely need to be much more specific, for example. Further, we saw the need to ask more questions in some areas of productivity so we can better understand what drives productivity differences and therefore income. As we learn from our questions themselves, we will produce better results in the future.

Our AAO-HNS leadership deserves thanks and credit for green-lighting this effort. A special thanks goes to James C. Denneny III, MD, and Ken Yanigasawa, MD, under whose leadership this effort began. Current Academy leadership and staff, in particular Maura Farrell, have also been vital in supporting our ongoing efforts. The AUA's data team, in particular Mr. William Meeks, was also very helpful in generously offering their time to engage in an ongoing dialogue about their workforce efforts. Their team was also involved in our urban/rural and income statistical analyses. They have set a standard for us moving forward. The wonderful members of our Task Force have thoughtfully crafted these questions and written this report, and they deserve our thanks for their volunteer efforts. We remain open to your comments and suggestions as we continue to strive to improve our understanding of this important topic.

These ongoing efforts to understand our workforce have the potential to shape our market and find solutions for patient access needs. This information can also affect decisions in pursuit of our specialty, fellowship training, or certain jobs. Whatever comes from these efforts, we are confident lives will be shaped for the better. Thank you all again for your ongoing participation.

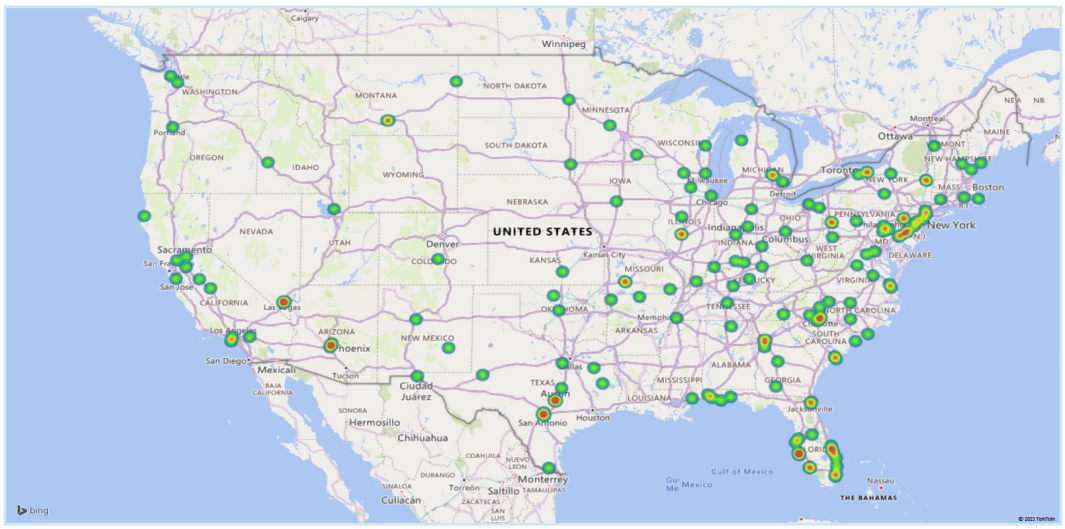
Sincerely,

Andrew J. Tompkins, MD, MBA
Workforce and Socioeconomic Survey Task Force Chair

APPENDIX

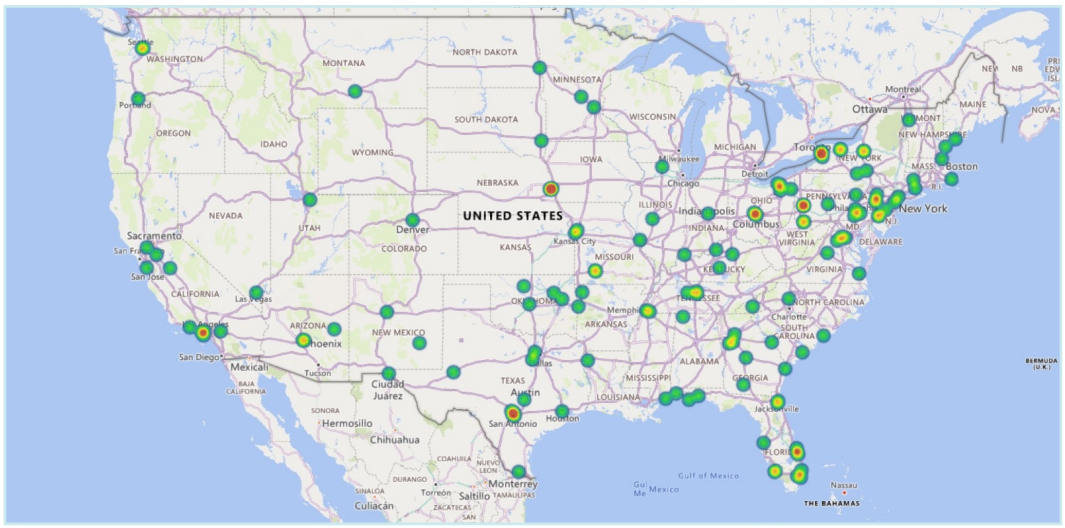
Fellowship Need by Zip Code of Primary Practice Site

Head and Neck Oncology



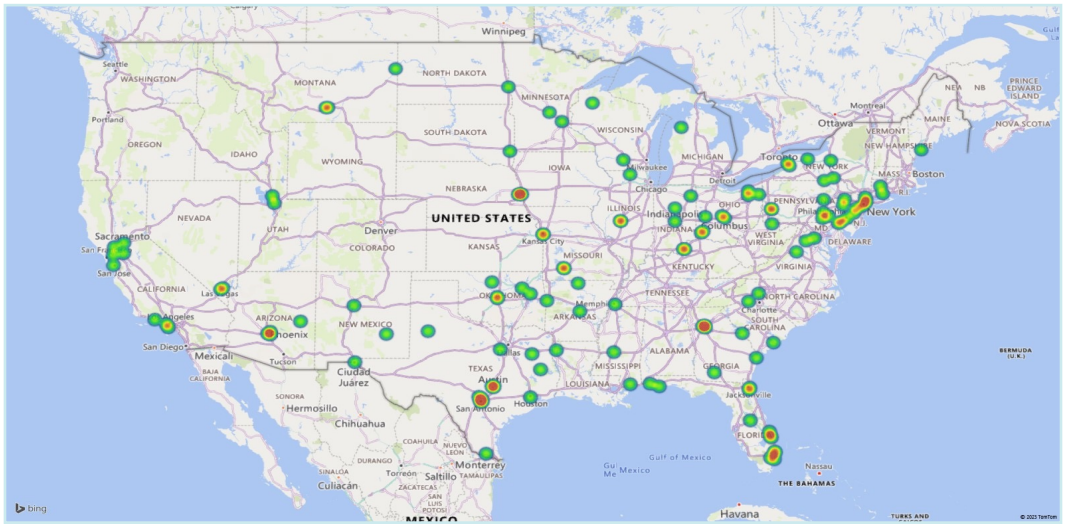
*Does not show needs described in Hawaii, Alaska, and Puerto Rico

Otology



*Does not show needs described in Hawaii and Puerto Rico

Neurotology

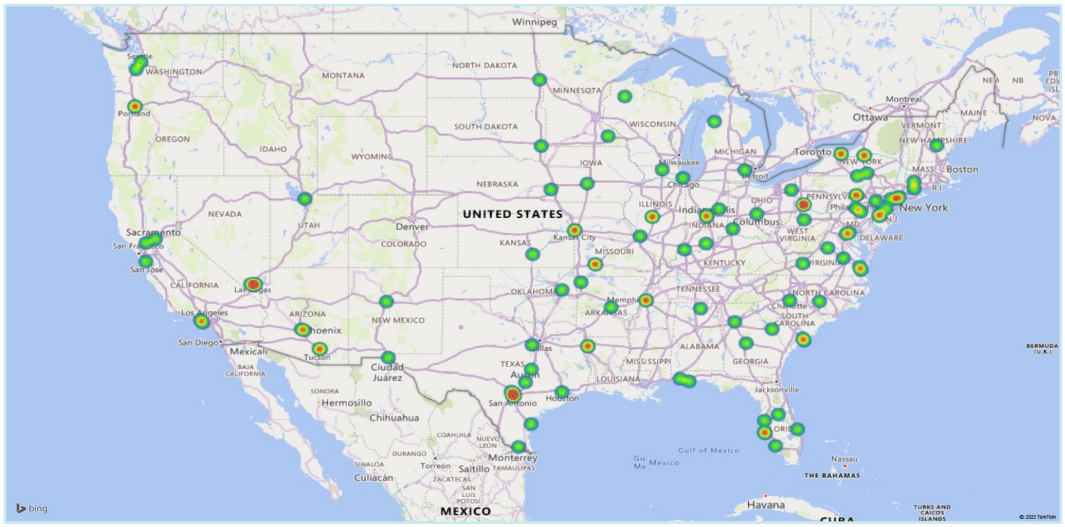


*Does not show a need described in Hawaii

Laryngology

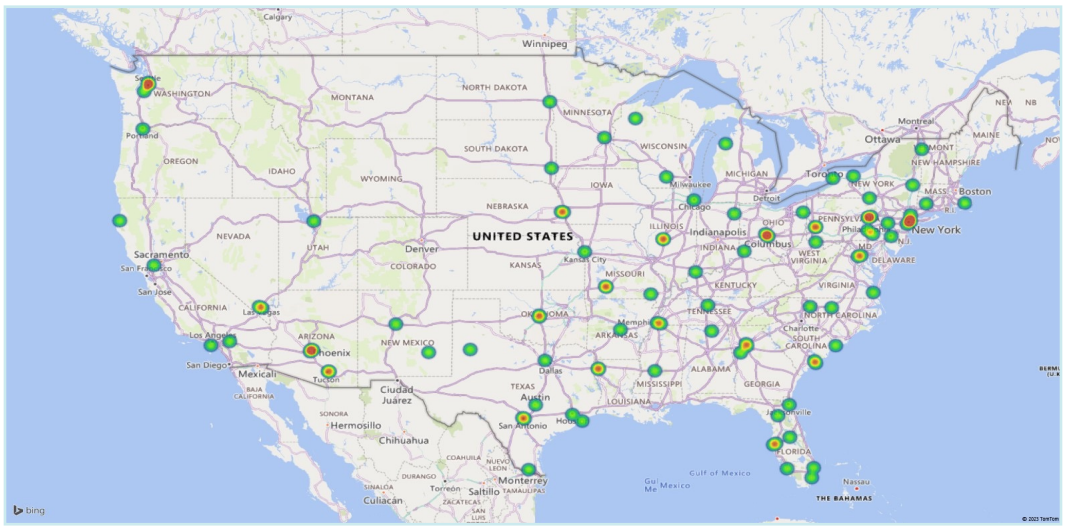
*Does not show a need described in Hawaii

Pediatric Otolaryngology



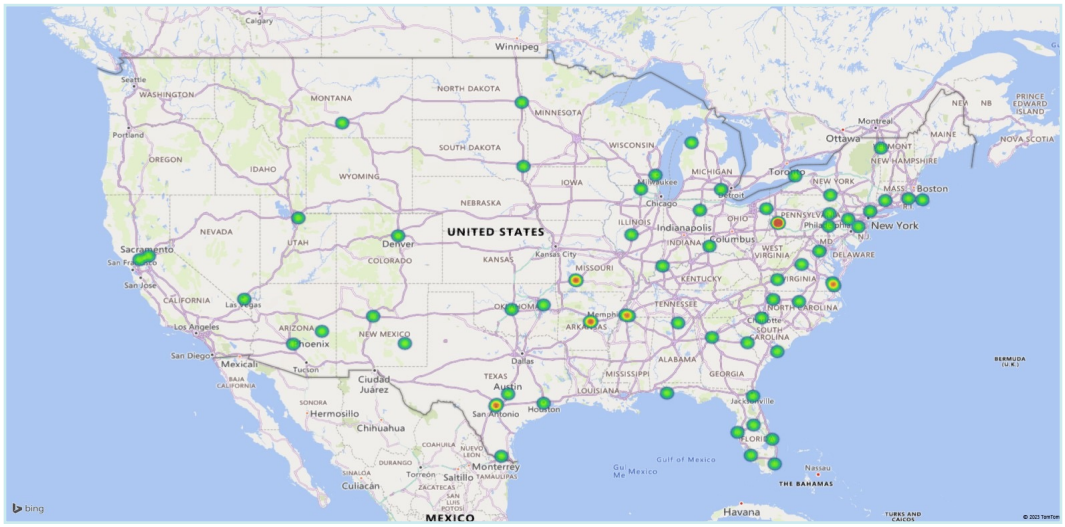
*Does not show a need described in Puerto Rico

Sleep Surgery



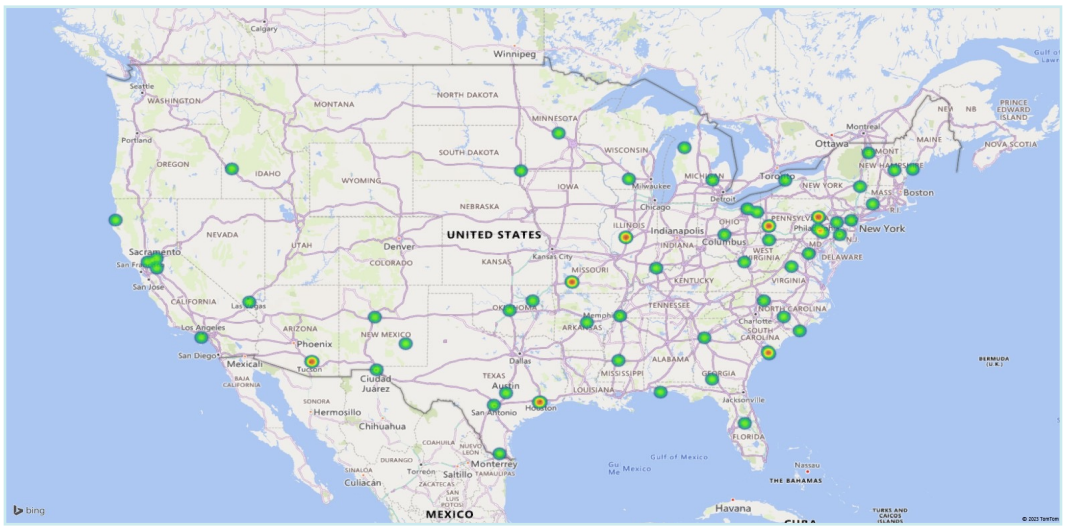
*Does not show needs described in Hawaii and Puerto Rico

Rhinology



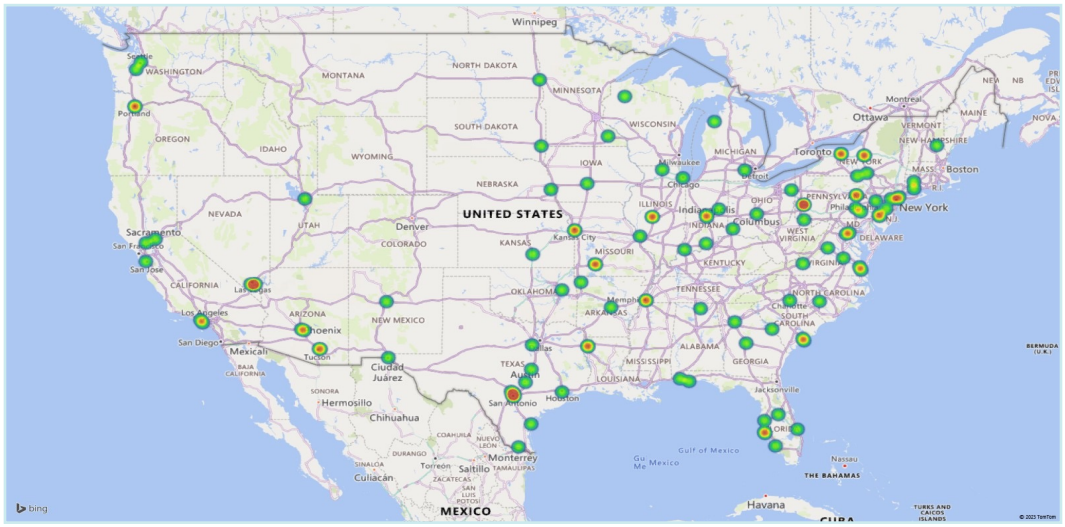
*Does not show a need described in Hawaii

Facial Plastic and Reconstructive Surgery



*Does not show a need described in Hawaii

Allergy



*Does not show needs described in Hawaii and Puerto Rico

United States Regions by States/Territories

Region	State
Northeast	Connecticut
	Maine
	Massachusetts
	New Hampshire
	Rhode Island
	Vermont
	New Jersey
	New York
	Pennsylvania
Midwest	Indiana
	Illinois
	Michigan
	Ohio
	Wisconsin
	Iowa
	Kansas
	Minnesota
	Missouri
	Nebraska
	North Dakota
	South Dakota
South	Delaware
	District of Columbia
	Florida
	Georgia
	Maryland
	North Carolina
	South Carolina
	Virginia
	West Virginia
	Alabama
	Kentucky
	Mississippi
	Tennessee
	Arkansas
	Louisiana
	Oklahoma
	Texas
	Puerto Rico
	Virgin Islands
West	Arizona
	Colorado
	Idaho
	New Mexico
	Montana
	Utah
	Nevada
	Wyoming
	Alaska
	California
	Hawaii
	Oregon
	Washington
	Armed Forces Pacific

Income Analysis

Clinical Income

2021 Clinical Practice Income (Excludes Ancillary or Call Income)			
Income Brackets Analyzed	$100k - $300k	$300k - $525k	$525k - $1M
Clinical Income Dispersion	~25%	~50%	~25%
Bracket Used for Significance Testing		**$525k - $1M**	

2021 Clinical Practice Income (Excludes Ancillary or Call Income)		
Variables Analyzed	Univariate Significance	Multivariate Significance
Years Since Residency Completion	Yes	No
Gender	Yes	**Yes**
Ethnicity	No	No
Fellowship Completion (Y/N)	Yes	No
Supply Perception in Region	No	No
Primary Practice U.S. Census Region	Yes	No
Primary Practice Setting	Yes	No
Employment Status	Yes	No
Private Equity or Hospital Owned	Yes	No
Clinical Hours Per Week	Yes	No
Patients Seen in Full Workday	Yes	**Yes**
Average OR Days Per Week	Yes	**Yes**
Otolaryngologists in the Practice	Yes	No
APP to Otolaryngologist Ratio	Yes	**Yes**
Years at Current Practice	Yes	No
Different Jobs Since Graduating	Yes	No
Any Unplanned Time Away	No	No
Compensation Model	Yes	No
Any Ancillary Income	Yes	No
Any Call Income	Yes	No
Taking Call or Not	Yes	No
Urban vs Rural Practice	No	No

Combined Clinical and Ancillary Income

2021 Combined Clinical and Ancillary Income (Excludes Call Income)			
Income Brackets Analyzed	$100k - $325k	$325k - $575k	$575k - >$1M
Bracket Used for Significance Testing	**$575k - >$1M**		

2021 Combined Clinical and Ancillary Income (Excludes Call Income)	
Variables Analyzed	Multivariate Significance
Years Since Residency Completion	No
Gender	**Yes**
Ethnicity	No
Fellowship Completion (Y/N)	No
Supply Perception in Region	No
Primary Practice U.S. Census Region	No
Primary Practice Setting	No
Employment Status	**Yes**
Private Equity or Hospital Owned	No
Clinical Hours Per Week	No
Patients Seen in Full Workday	**Yes**
Average OR Days Per Week	**Yes**
Otolaryngologists in the Practice	No
APP to Otolaryngologist Ratio	**Yes**
Years at Current Practice	No
Different Jobs Since Graduating	No
Any Unplanned Time Away	No
Compensation Model	**Yes**
Any Ancillary Income	No
Any Call Income	No
Taking Call or Not	No
Urban vs Rural Practice	No

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for ENT Patient Care