THE UNITED STATES OTOLARYNGOLOGY WORKFORCE

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EVP/CEO, American Academy of Otolaryngology – Head and Neck Surgery Foundation
Take the AAO-HNS 2022 Workforce Survey
Why Look at Workforce Now?

- Gold Standard OTO Workforce 1975, funded by NIH Grant
- Active discussion and commentary 2000-2010 through Workforce Committee
- Workforce Committee discontinued 2015
- Need for accurate assessment for multiple reasons
  - Training planning to meet needs
  - Advocacy needs
  - Trainees and practitioner career planning
• 2000 Workforce

Fig 1. Rate of otolaryngologists per 100,000 of the US population, projected from the AMA Masterfile for 1997.
- 2004 Workforce Study

SUPPLY

• 2012 ACS Bulletin Analysis

2016 Laryngoscope Analysis

- 2011 – 10,522 Otolaryngologists (3.38/100k)
- 2014 – 10,800 Otolaryngologists (3.39/100k)

**GME Analysis**

<table>
<thead>
<tr>
<th>Year</th>
<th>Predicted*</th>
<th>Actual**</th>
<th>US Population</th>
<th>Otolaryngologists</th>
<th>Attrition</th>
<th>Oto/100k</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>264</td>
<td>287</td>
<td>311,584,047</td>
<td>10,522</td>
<td>179</td>
<td>3.38</td>
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<td>2012</td>
<td>270</td>
<td>293</td>
<td>314,043,885</td>
<td>10,630</td>
<td>181</td>
<td>3.38</td>
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<td>2013</td>
<td>273</td>
<td>296</td>
<td>316,400,538</td>
<td>10,742</td>
<td>183</td>
<td>3.40</td>
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<td>2014</td>
<td>275</td>
<td>299</td>
<td>318,673,411</td>
<td>10,800</td>
<td>184</td>
<td>3.39</td>
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<td>2015</td>
<td>280</td>
<td>304</td>
<td>320,878,310</td>
<td>10,915</td>
<td>186</td>
<td>3.40</td>
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<tr>
<td>2016</td>
<td>283</td>
<td>307</td>
<td>323,015,995</td>
<td>11,033</td>
<td>188</td>
<td>3.42</td>
</tr>
<tr>
<td>2017</td>
<td>285</td>
<td>309</td>
<td>325,084,756</td>
<td>11,153</td>
<td>190</td>
<td>3.43</td>
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<tr>
<td>2018</td>
<td>292</td>
<td>317</td>
<td>327,096,265</td>
<td>11,273</td>
<td>192</td>
<td>3.45</td>
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<tr>
<td>2019</td>
<td>295</td>
<td>320</td>
<td>329,064,917</td>
<td>11,398</td>
<td>194</td>
<td>3.46</td>
</tr>
<tr>
<td>2020</td>
<td>299</td>
<td>325</td>
<td>331,002,651</td>
<td>11,525</td>
<td>196</td>
<td>3.48</td>
</tr>
<tr>
<td>2021</td>
<td>304</td>
<td>330</td>
<td>332,915,073</td>
<td>11,653</td>
<td>198</td>
<td>3.50</td>
</tr>
</tbody>
</table>

*Predicted residency graduates based on NRMP data from 5 years prior

**Actual based on 8.6% higher rate on direct measure for 2021 class

DO programs not included in NRMP data from 2016 and earlier, military never included
• New Otolaryngology Programs (last 7 years)
  • Cedars-Sinai
  • Beth Israel Deaconess Medical Center
  • Cooper Hospital – University Medical Center
  • Stony Brook Medicine
  • Zucker School of Medicine at Hofstra/Northwell
  • St Luke’s Hospital Anderson
  • Texas Tech
  • Mayo Clinic Jacksonville – 2022
  • Allegheny Health Network – 2022
  • Methodist Hospital (Houston) – 2022
SUPPLY

• GME Analysis
SUPPLY

3.61
• Fellowship Growth

• Neurotology Supply & Fellowships
  • 2013 Neurotology Workforce Analysis
    • 10-15% oversupply

Neurotology Supply & Fellowships

2013 – 2020

- 4.6% US population growth
- 37% growth in fellowship spots
- 49% increase in neurotology workforce

https://apps.acgme.org/ads/Public

• Head & Neck Oncology Supply & Fellowships

SUPPLY

• Rhinology Supply & Fellowships


• Rhinology Supply & Fellowships

SUPPLY

- Pediatric Otolaryngology Supply & Fellowships

• Supply Construct

SUPPLY

College

Med School

Residency

Fellowship

ENT

AAMC

AMA

ACGME

AAO-HNS

HHS/CMS

SUO/AADO/OPDO

ABO-HNS

ACGME

HHS/CMS

SUO/AADO/OPDO

ABO-HNS

AAMC

AMA

AAO-HNS

THE GLOBAL LEADER IN OPTIMIZING QUALITY EAR, NOSE, AND THROAT PATIENT CARE  www.entnet.org
• Rural Health

SUPPLY

3.61
SUPPLY

Age

Mobility

Scope of Specialty

APPs

Burnout

Reimbursement

EMRs

Rural vs Urban

Competition

Scope of Practice

Work Incentives

Technology

3.61
RETHINKING SUPPLY

• New Patient Availability
• Diagnosis to Surgery Time
• Time by Region/Rurality
• Time by Practice Type
• Job Market
Demographics: Please describe what best describes your current situation

- Physician in active practice of Otolaryngology-Head and Neck Surgery in US/territories/military overseas: 1,342 (80.1%)
- Active resident in training: 118 (7.0%)
- Active fellow in training: 28 (1.7%)
- Retired from practice: 123 (7.3%)
- In industry: 6 (0.4%)
- Administrative only: 10 (0.6%)
- Researcher: 4 (0.2%)
- International member: 9 (0.5%)
- Other: 36 (2.1%)
• Physicians in Active Practice
RESIDENTS
Demographics: Do you plan to pursue a fellowship?

Answer Distribution

- Yes: 92 (78.0%)
- No: 26 (22.0%)
Demographics: Why are you doing a fellowship?

- To limit clinical areas of practice and increase expertise: 24 (88.9%)
- Needed for academic career: 13 (48.1%)
- Income: 1 (3.7%)
- Chart Area: 2 (7.4%)
- Prestige: 2 (7.4%)
- Desirability for employment: 7 (25.9%)
- Other: 2 (7.4%)
Demographics: What are your job plans after training?

- Academia: 66 (56.4%)
- Hospital, non-academia: 9 (7.7%)
- Private practice: 31 (26.5%)
- Military/government: 1 (0.9%)
- Other: 10 (8.5%)
PRACTICING PHYSICIANS
Have you completed a fellowship?
Select primary fellowship

- Facial Plastic Reconstructive Surgery: 84 (13.2%)
- Head and Neck Oncology: 112 (17.0%)
- Laryngology: 66 (10.4%)
- Neurotology: 112 (17.6%)
- Otology: 15 (2.4%)
- Pediatric Otolaryngology: 140 (22.0%)
- Rhinology: 75 (11.8%)
- Sleep Medicine/Surgery: 11 (1.7%)
- Allergy: 8 (1.3%)
- Other: 13 (2.0%)
• Physicians in Active Practice
  • Fellowship Utilization*

Bar chart showing fellowship utilization rates:
- Neurotology: 91%
- Peds: 89%
- Laryngology: 78%
- Rhinology: 77%
- Head & Neck: 68%
- Facial Plastics: 57%
2022 AAO-HNS WORKFORCE SURVEY

- Physicians in Active Practice
  - Fellowship Utilization

### Fellowship Utilization (Academics)

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurotology</td>
<td>92%</td>
</tr>
<tr>
<td>Peds</td>
<td>94%</td>
</tr>
<tr>
<td>Laryngology</td>
<td>90%</td>
</tr>
<tr>
<td>Rhinology</td>
<td>89%</td>
</tr>
<tr>
<td>Head &amp; Neck</td>
<td>74%</td>
</tr>
<tr>
<td>Facial Plastics</td>
<td>75%</td>
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</table>

### Fellowship Utilization (Private)

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurotology</td>
<td>90%</td>
</tr>
<tr>
<td>Peds</td>
<td>58%</td>
</tr>
<tr>
<td>Laryngology</td>
<td>51%</td>
</tr>
<tr>
<td>Rhinology</td>
<td>56%</td>
</tr>
<tr>
<td>Head &amp; Neck</td>
<td>49%</td>
</tr>
<tr>
<td>Facial Plastics</td>
<td>45%</td>
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</tbody>
</table>
Does your referral region need additional fellowship trained otolaryngologists?

- Yes 353 (26.6%)
- No 976 (73.4%)
Which specialties are needed?

1. Facial Plastic Reconstructive Surgery: 77 (22.0%)
2. Head and Neck Oncology: 178 (50.9%)
3. Laryngology: 134 (38.3%)
4. Neurotology: 149 (42.6%)
5. Otology: 163 (46.6%)
6. Pediatric Otolaryngology: 125 (35.7%)
7. Rhinology: 76 (21.7%)
8. Sleep Medicine/Surgery: 128 (36.6%)
9. Allergy: 66 (18.9%)
10. Other: 4 (1.1%)
On a typical day are you working:

- Too long: 485 (34.9%)
- Right amount: 766 (61.4%)
- Not enough and I want more patients: 46 (3.7%)
Consequences of Too Many OTOS

• Not enough jobs
• Potential for erosion of skills/outcomes
• Increased systemic cost
• Decreased interest in specialty
FUTURE WORKFORCE DESIGN

- Disrupting the supply
If you could retire tomorrow, would you?

No 882 (69.8%)
Yes 381 (30.2%)
2022 AAO-HNS WORKFORCE SURVEY

If You Could Retire Tomorrow Would You?

- Non-academic hospital: 40% Yes, 39% No
- Solo practice: 29% Yes, No
- Private SSG: 27% Yes, No
- Private MSG: 26% Yes, No
- Academics: 27% Yes, No
Conclusion

• Critical to understand current and future workforce dynamics
• Results reported consistently and transparently
• Communicate results to stakeholders
  • Students, Residents, Practitioners
• Inform training paradigms
• Strengthen Otolaryngology’s future
Take the AAO-HNS 2022 Workforce Survey
Current Practice:
Training Residents & Certifying Graduates
How are we training residents?

RESIDENCY ROTATION STRUCTURE
• Subspecialty rotations with emphasis on complex cases during senior years
• Same KIP requirements for all trainees
• Relative shortage/absence of comprehensive otolaryngology rotations, exposure to community-based or private practices
• Questionably adequate training in outpatient/office-based otolaryngology

INCREASING SPECIALIZATION
• Forward progress in technology, degree of specialization
  • Robotics, endoscopic ear/ skull base, etc.
  • Is this the environment in which most of our grads will be practicing?
How are we certifying graduates?

WRITTEN EXAMINATION

<table>
<thead>
<tr>
<th>Patient Care Process</th>
<th>Overall %</th>
<th>Allergy</th>
<th>H&amp;N</th>
<th>Laryngology</th>
<th>Otology</th>
<th>Pediatric (LTR, airway, etc.)</th>
<th>P&amp;R</th>
<th>Rhinology</th>
<th>Sleep</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>Basic science</td>
<td>10%</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>20</td>
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<tr>
<td>Data gathering &amp; interpretation</td>
<td>24%</td>
<td>4</td>
<td>10</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>48</td>
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<td>Diagnosis</td>
<td>20%</td>
<td>3</td>
<td>9</td>
<td>3</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td>5</td>
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<td>Management</td>
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<td>Non-surgical</td>
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<td>2</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>4</td>
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<td>Surgical principles</td>
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<td>1</td>
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<td>Surgical</td>
<td>13%</td>
<td>0</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>26</td>
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<tr>
<td>Total management</td>
<td>31%</td>
<td>3</td>
<td>9</td>
<td>6</td>
<td>12</td>
<td>7</td>
<td>13</td>
<td>8</td>
<td>4</td>
<td>62</td>
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<tr>
<td>TOTAL Non-fundamentals</td>
<td>85%</td>
<td>11</td>
<td>32</td>
<td>15</td>
<td>32</td>
<td>18</td>
<td>32</td>
<td>21</td>
<td>9</td>
<td>170</td>
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<tr>
<td>Fundamentals</td>
<td>15%</td>
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<td></td>
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<td>30</td>
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<td>Total</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>200</td>
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</tbody>
</table>
How are we certifying graduates?

ORAL EXAMINATION

Virtual since 2020

5 examiners from each specialty area, 10 protocols (2 in each area) delivered to each candidate in a 90min session

1. General Otolaryngology 1 (includes Rhinology, Allergy, and Sleep Medicine)
2. General Otolaryngology 2 (includes Laryngology and Pediatrics)
3. Head and Neck Surgery
4. Otology/Audiology
5. Facial Plastics and Reconstructive Surgery
Career plans & the future: What do trainees think?
Assessing Trends in Fellowship Training Among Otolaryngology Residents: A National Survey Study

Robert H. Miller, MD, MBA¹, Hilary Caitlyn McCrery, MD, MPH², and Richard K. Gurgel, MD, MSCI²

2011-2019 oral board examinees (n=2286/2329, 98% response rate)

• 57% had plans to complete a fellowship
• Top cited reasons for pursuing fellowship:
  • 30% - Intellectual appeal of the given specialty
  • 35% - Desire for additional expertise
  • 16% - Job opportunity enhancement
• Least common cited reasons for pursuing fellowship: compensation for deficient residency training, lifestyle, family, enhanced compensation

Figure 2. Changes from 2011 to 2019 in percentage of otolaryngology residents applying to fellowship. *P < .05. H&N, head and neck.
The State of the Otolaryngology Match: A Review of Applicant Trends, “Impossible” Qualifications, and Implications

Sarah N. Bowe, MD¹, Cecelia E. Schmalbach, MD², and Adrienne M. Laury, MD³

Figure 3. Average number of publications, abstracts, and presentations for applicants applying in otolaryngology versus all specialties: 2007-2016.¹

NRMP 2022
Matched: 17.2
Unmatched: 11.0
94% matched applicants had >=5

Otolaryngology Workforce: What do we do from here?
Where do we go from here?

**Program Level**
- Provide structured training, and cultivate pride, in comprehensive otolaryngology
- Use PEC meetings to look at graduate outcomes (1 of only 4 charges of this committee!) and use these to improve/evolve program curricula

**National Level**
- Aim to correlate ACGME common program requirements and ABO board requirements to future practices (rather than only activities of training)
- Nationalize residency graduate surveys
- Get all stakeholders to work in concert (ACGME, AAO-HNS, ABOto, SUO/OPDO) and with awareness of workforce considerations