Sixth Edition

VOICE THERAPY

CLINICAL CASE STUDIES

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Contents

Foreword

Thirty-one years ago, as a young clinician in a dedicated "voice center," I nervously asked one of the giants of our field, G. Paul Moore, to write a foreword for the first edition of *Voice Therapy: Clinical Case Studies*. Not only was Dr. Moore a pioneer in the field of voice disorders, but he was also one of the kindest and most sharing gentlemen in our profession, always strongly encouraging to the next generation. Now, here we are, five editions later and I am the one being asked to write the foreword to this enduring text; and in so doing, I am passing the baton to the next generation who, through their contributions, continue to define and describe the remarkable growth of the profession I love.

For the first edition, Dr. Moore wrote,

> *. . . the basic books usually classify deviant voices and briefly describe diseases, structural abnormalities, emotional problems, and behavioral variations that cause the vocal disorders. These texts also customarily recommend general remedial measures for recognized voice problems; however, the authors never intended their limited presentations to prepare the speech clinician to manage remedial programs expertly. Consequently, many clinicians find themselves unprepared to handle voice problems.*

Indeed, the first edition of *Voice Therapy: Clinical Case Studies* was born of the frustration of writing a voice disorders survey textbook that lacked the space to fully describe the treatments available for the many voice disorders. Thus, in 1993, with the contributions of 25 master voice clinicians, physicians, and voice pedagogues, detailed case studies explicitly and realistically presented remedial approaches used to treat voice disorders. The evolution of this text has followed the remarkable evolution of our profession with each new edition reemphasizing foundational clinical knowledge through classic cases and introducing new and exciting approaches to treatments resulting from evidence-based research, behavioral research, basic science research, advances in technology, and societal changes. The cases presented in each new edition demonstrate the immense positive impact that those who treat voice disorders have on the lives of individual patients.

This sixth edition of *Voice Therapy: Clinical Case Studies* continues the tradition of providing expert, detailed instruction to those with the privilege of providing care to individuals with voice disorders. My role in this edition has been purely ceremonial as the heavy lifting has been shared by my friends and colleagues Edie Hapner and Lauren Timmons Sund. In their hands, I am supremely confident that the intent of this text will endure. It is my desire that you will find guidance and inspiration as you study the cases presented in this book and that your patients will benefit from your dedication to learning.

With joy and contentment, "*give me now leave to leave thee*."—Hamlet, Act 1, Scene 5

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Preface

The sixth edition of *Voice Therapy: Clinical Case Studies* is a reenvisioning of the text that mirrors the growth of the field of voice care. An updated chapter on the voice and upper airway evaluation details the contemporary vision and purpose of the evaluation as not simply a mandatory step in the care process, but rather as a method to develop a grounded clinical hypothesis about the behavioral aspects of the voice in collaboration with our laryngology, otolaryngology, pulmonology, neurology, and gastroenterology partners. This text diligently guides the clinician through an evaluation process informed by current trends in the use of patient-reported outcome measures, advanced instrumental procedures, and the all-important stimulability testing that steers a process we refer to as the "Decision-Making Step," where the clinician feels empowered to determine if voice and upper airway therapy will play a role in the patient's care. Speech-language pathologists are independent providers and, as such, this book empowers the clinician to be a partner in care provision rather than a technician to carry out a plan prescribed by a physician or advanced practice provider. In every chapter and case, this updated text highlights the specific physiological underpinnings of treatment that might support a return to full voice; improved vocal health to reduce the incidence of phonotrauma; enhanced efficiency of voice production; reduction/elimination of activity-limiting dyspnea; and improved voice sense of self based on the results of the voice and upper airway evaluation, the clinician's understanding of cause and medical care of pathologies, and the vast appreciation of the person's needs and desires for their voice.

The coeditors of this text hope to enhance patient care by bolstering the confidence of clinicians providing voice and upper airway treatment. To this end, each case begins with authentic medical documentation including the history of present illness, perceptual assessment, instrumental assessment, and stimulability testing followed by sections on impressions and plan of care that include the frequency, intensity, and duration of care. Importantly, each case includes a section on decision making for a peek into the minds of our master clinicians and why they do what they do. The intervention section of each case is designed to walk the reader through the therapy process, step by step and session by session. Every case, new and old, has been revamped to provide a level of detail that is new to the sixth edition. Perhaps the most exciting addition to this text is the 30+ cloud-based therapy demonstrations. The coeditors have diligently inserted the video links throughout the text so the reader can quickly and easily watch the author do the therapy described in each case.

Also new to this text, the introductions to each chapter have been rewritten to reflect advances in care since the publication of the fifth edition. Updated language and understanding of voice and upper airway disorders is used in each chapter, but especially in the movement disorders (e.g., laryngeal dystonia) and upper airway chapters (e.g., inducible laryngeal obstruction). The use of telehealth is now infused throughout the book as an option for improving access to care rather than as a novelty. This sixth edition also boasts an entire chapter on gender-affirming voice care, whereas the previous edition included

only two cases. We have invited our laryngology collaborators to coauthor cases with our master speech-language pathology clinicians to demonstrate all the permutations of interprofessional care that improves treatment outcomes. Within the cases, the coeditors use gray "call-out" boxes to highlight important concepts, provide additional information on controversies, offer suggestions for additional reading, or give a simple explanation for why a phrase or concept might be of the utmost importance to care.

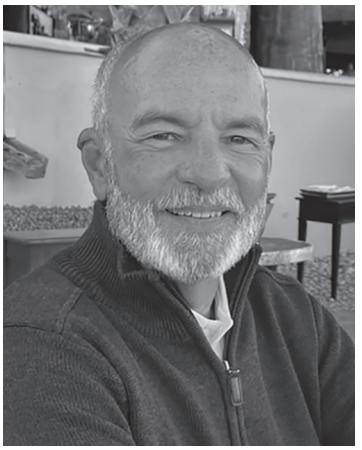
The sixth edition of *Voice Therapy: Clinical Case Studies* honors the giants in voice and upper airway care that have come before us, especially those that have played such a pivotal role in prior editions. We particularly honor Dr. Joseph Stemple, a trailblazer in our field who has graciously passed the torch to us for this sixth edition to continue his tradition of generous teaching, mentoring, and making voice care easy and accessible to all clinicians.

We believe the sixth edition in its new format is a stand-alone text providing guidance to all clinicians for current evidence-based, effective voice and upper airway care for patients across the life span. We are so grateful to our authors for their generous cases that teach us how to be better clinicians and to the 30 authors of our videos that literally *show* us how it is done. We thank Plural and our editors for their support during the journey to reenvision this sixth edition of *Voice Therapy: Clinical Case Studies*.

We are so proud of this edition and look forward to sharing it with you.

Respectfully,
Edie and Lauren

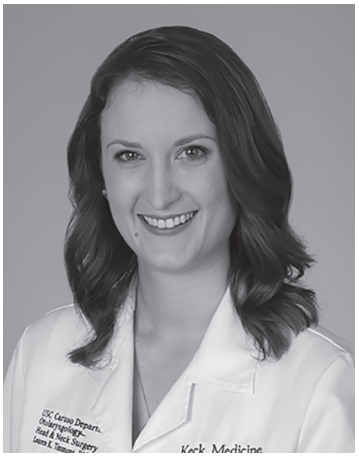
About the Authors



Joseph C. Stemple, PhD, CCC-SLP, ASHAF is Professor Emeritus, Department of Communication Sciences and Disorders, College of Health Sciences, University of Kentucky. Prior to his academic career he was the founder and director of the Blaine Block Institute for Voice Analysis and Rehabilitation, Dayton, Ohio and the Professional Voice Center of Greater Cincinnati. As co-director of the UK Laryngeal and Speech Dynamics Lab, his research focused on understanding voice disorders, specifically cell to society translational research. The overarching research goal was to enhance vocal function in those with voice disorders. He is a Fellow and Honors recipient of the American Speech Language Hearing Association.

Edie R. Hapner, PhD, CCC-SLP, is the George W. Barber Junior Endowed Professor of Otolaryngology at the University of Alabama at Birmingham where she also serves as the Co-Director of the UAB Voice Center and the Director of Hearing and Speech. She is a fellow of the American Speech Language and Hearing Association and Associate Fellow of the American Laryngological Association. Dr. Hapner has served on the Board of Directors for the American Speech Language and Hearing Association as the Vice President of Planning, Coordinator of the SIG 3 Voice and Voice Disorders and chaired the ASHA Annual Convention in both 2020 and 2022. She has served as a member of the Voice Committee for the American Academy of Otolaryngology and the Education Committee for the American Bronchoesophageal Association and served on the AAOHNS Guidelines Committee for Dysphonia. She is a founding member of PAVES, Pathway for Advanced Voice Education and Service and currently serves on the Advisory Board.

Dr. Hapner's research interests include aging voice, dystonia and adherence to voice therapy. She has co-edited Voice Therapy Clinical Case Studies Editions 4, 5 and now 6. She is co-developer of Phonation Resistance Training Exercises (PhoRTE®), an evidence-based treatment for aging voice. She developed and implemented the voice curriculum for Medbridge Inc, an online learning system for speech language pathologists. She has presented hundreds of lectures, workshops, and seminars on voice and voice disorders. She has over 70 published articles in the area of voice and voice disorders and multiple book chapters. Dr. Hapner's greatest professional accomplishment remains the mentoring of 23 consecutive voice centric clinical fellows into this incredible world of care of the voice.



Lauren Timmons Sund, BM, MS, CCC-SLP is the Speech Pathology Director for the USC Voice Center in Los Angeles, CA. She is the Clinical Fellowship Director at the USC Voice Center and an instructor and clinical educator for the graduate SLP program at the University of Southern California.

Lauren earned her master's degree in communicative disorders from California State University, Northridge, completed a research internship at the University of Pittsburgh Voice Center, and trained as a clinical fellow in voice, upper airway, and swallowing disorders at the USC Voice Center under the mentorship of Edie Hapner, PhD. She holds a Bachelor of Music in voice performance from Illinois Wesleyan University.

Lauren specializes in the care of patients with voice and upper airway disorders with particular clinical and research interest in performance voice, aging voice, laryngeal dystonia, and interprofessional practice. She has published 20+ peer-reviewed articles and regularly presents locally and nationally. Lauren served as course co-director for the Fall Voice Conference 2024, is a past president of the Southern California Chapter of the Voice Foundation, a current committee chair for PAVES (Pathway for Advanced Voice Education and Service), and is on the Advisory Board for the Voice Foundation.

Contributors

This text is a result of the generosity of over 60 master clinicians who have selflessly shared their knowledge after committing their careers to developing the highest level of clinical acumen, clinical skill, clinical discovery, and mentorship. Their cases represent the most current evidence and practice in care of the voice and upper airway at the time of writing this text. We, the editors, thank them for their contributions and for teaching us through their research, their presentations, and certainly through these cases to be better clinicians ourselves.

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Video Contents

This book comes with videos on a PluralPlus companion website. Look for this icon throughout the text to identify where a corresponding video is available. (Instructions for accessing the website are on the inside front cover.)

VIDEO #	CASE	TITLE	AUTHOR
Video 1	3.1	Mapping Speech Sound Sensations	Jackie Gartner-Schmidt
Video 2	3.1	Clear Speech and Negative Practice	Amanda Gillespie
Video 3	3.3	Physical Rolldown Stretch	Christine Murphy Estes
Video 4	3.3	Labio-Lingual Trills (Raspberries)	Christine Murphy Estes
Video 5	3.6	Vocal Function Exercises	Joseph Stemple
Video 6	4.2	Gargling as a Facilitating Technique	Claudio Milstein
Video 7	4.3	Flow Phonation	Jackie Gartner-Schmidt
Video 8	4.6	Lip Trills	Maia Braden
Video 9	4.6	Inspiratory Phonation	Maia Braden
Video 10	4.6	Straw Bubbles	Maia Braden
Video 11	4.7	Resonant Voice Concepts	Christina Kang Rosow
Video 12	5.1	Inspiratory Muscle Strength Training	Heather Bonilha
Video 13	5.2	Developing Proper Form for PhoRTE	Edie Hapner and Aaron Ziegler
Video 14	5.3	Using the EMST 150 Device	Adam Lloyd
Video 15	5.6	Anchoring and Twang to Reduce Vocal Effort	Lauren Timmons Sund
Video 16	6.4	Shortened Voicing Duration for Vocal Tremor	Julie Barkmeier-Kraemer
Video 17	6.5	Contrasting Glottic Onset Types	Kristen Bond
Video 18	6.7	Calibrating the SpeechVive	Jessica Huber
Video 19	7.1	Throat Clearing Reduction Strategies	Lisa Zughni
Video 20	7.3	Relaxed Throat Breathing	Laurie Slovarp
Video 21	7.3	Box Breathing	Laurie Slovarp

continues

Video Contents. *continued*

VIDEO #	CASE	TITLE	AUTHOR
Video 22	7.9	Tooth Variant EILOBI Breathing Technique	Emily Nauman
Video 23	8.1	Twang for Sustainable Character Voices	Megan Urbano
Video 24	8.1	Cup Phonation	M. Eugenia Castro
Video 25	8.2	Modified Accent Method	Debra Phyland
Video 26	8.3	Myofascial Release	Wendy LeBorgne
Video 27	8.4	Cup Bubble Facilitator	Jenny Muckala
Video 28	8.5	Straw Phonation in Water Hierarchy	Juliana Codino
Video 29	8.6	/s/ Pulse and /wu/ Hierarchy	Marina Gilman
Video 30	8.8	Tongue Stretches	Sarah Schneider
Video 31	8.9	Ball Blower Semi-occluded Vocal Tract Exercise	Patricia Doyle
Video 32	9.1	Hirsch's Acoustic Assumptions	Sandy Hirsch
Video 33	9.1	Shaping Non-Speech Vocalizations	Sandy Hirsch
Video 34	9.2	Increasing Loudness After Pitch-Elevation Surgery	Wynde Vastine
Video 35	9.3	The Voice Puzzle in Gender-Affirming Voice Care	Felicia François
Video 36	9.3	Laryngeal Massage and Resposturing to Lower Pitch	Daniel Buckley
Video 37	9.4	Modifying Tongue Height to Alter Resonance	Desi Gutierrez

1

The Voice and Upper Airway Evaluation

Edie R. Hapner and Lauren Timmons Sund

A Brief History of the Voice and Upper Airway Evaluation

To understand the role of the voice and upper airway evaluation and its components, it seems fitting to first explore the history of voice care in the United States and the giants on whose shoulders we stand. The story of clinical voice and upper airway care is a fascinating one, beginning with the inception of the American Academy of Speech Correction in 1925, now the American Speech-Language-Hearing Association (ASHA). The earliest speech-language pathologists (SLPs) emerged from members of the National Association of Teachers of Speech, with a desire to infuse science into traditional speech and voice care, but with little interest in voice disorders themselves and more interest in stuttering and articulation.[1] While several prominent clinicians, namely Fairbanks and van Riper, wrote about voice care,[2,3] the treatment of the impaired voice remained primarily the purview of teachers of singing in the early years of speech pathology and continued in this context without substantial scientific underpinnings. However, during these early years, research on the science of voice care was being conducted in the lab by speech scientists such as G. Paul Moore, PhD, who defended his dissertation on laryngeal videostroboscopy[4] at Northwestern University's Speech Communication Department in 1936.[5] Around this same time, Friedrich Brodnitz, Emil Fröschels, and Paul J. Moses—prominent European phoniatricians displaced to the United States due to the antisemitic Nazi regime during World War II—advanced the collective interest and understanding of voice disorders.[6] And while we assume the interprofessional voice center began in the 1990s, Moore and Hans von Leden, MD, in fact started the first multidisciplinary voice care team at Northwestern University in 1951.

Clinical work in upper airway disorders came into the purview of the laryngologist and SLP in the 1930s and 1940s.[7] However, much of the early work in upper airway care centered around invasive methods of measuring respiratory function through tracheal punctures and esophageal balloons. The 1960s saw the initial attempts at noninvasive methods to measure respiratory and phonatory functions, and 20 years later, Smitheran and Hixon discovered that respiratory pressures could be measured at the lips as a surrogate for subglottal pressures.[8,9] The ability to noninvasively measure respiratory-phonatory function ushered in our current methods of evaluating the voice and upper airway in a clinical setting.

In the late 1980s and early 1990s, less invasive instrumental assessment of the voice became more widely available for clinical use. In the 1980s, physicians began using flexible laryngeal endoscopy as a clinical diagnostic tool to grossly examine the vocal folds, observe abduction and adduction, and determine the presence of larger lesions.[10] However, it was the introduction of laryngeal videostroboscopy that allowed the clinician to observe vocal fold pliability, glottal closure, and the finer details of the laryngeal mucosa.[11] This development shifted the theoretical underpinning of voice therapy from symptomatic to physiologic.[12] Voice clinicians could now see the vocal folds, understand their movement, and observe changes that occurred in response to treatment, thereby allowing them to understand why a patient presented with a particular symptom and thus target the root cause of the problem. Improvements in acoustic and aerodynamic assessment tools further helped clinicians understand the physiological functioning or malfunctioning of respiration, phonation, and resonance[13,14] and further advanced the field. Alongside these advances in voice care, in the early 1980s, the National Jewish Hospital in Denver began reporting on functional disorders of the vocal folds that symptomatically seemed to mimic asthma. SLP Florence Blager began publishing and presenting on the treatment of this "factitious asthma" called vocal cord dysfunction or paradoxical vocal fold motion, which could be treated with respiratory retraining by a qualified SLP.[15] More recently, this upper airway disorder has been described as inducible laryngeal obstruction (ILO).[16] Episodes of ILO are often triggered by strong odors, smoke, noxious smells, and other environmental triggers, and when symptoms are triggered by physical activity, it is known as exercise-induced laryngeal obstruction (EILO). Sandage et al (2024) published a systematic review about methods used by SLPs to treat ILO and EILO; however, this research unfortunately demonstrated a lack of consistency in the literature on types of treatment and metrics used to assess treatment outcomes.[17] Work continues in this area, and the cases in this text represent the most current thinking by master researchers and clinicians.

Another upper airway disorder, "chronic habit cough" was described in the 1980s and used respiratory retraining therapy as the treatment of choice.[18] Chronic cough was recognized as notably debilitating, reducing participation in social activities and sometimes causing secondary problems such as emesis, broken ribs, and urinary incontinence. The evidence base suggests a central sensitivity disorder as the etiology, with therapeutic interventions used by SLPs effective in treating what is now known as chronic refractory cough (CRC).[19] Research for how to best manage ILO, EILO, and CRC continues, with SLPs importantly involved in collaboration with pulmonologists, allergists, and otolaryngologists and with medications more recently added as complementary to the therapeutic process.

This brief history is intended to acquaint the reader with the advances in voice and upper airway care over the past 100 years and to illustrate how increased access to instru-

mental assessment has refined our diagnostic accuracy and advanced our treatments. Effective voice and upper airway care is preceded by a comprehensive, skilled evaluation and interpretation of findings. The remainder of this chapter first explores models of care for the evaluation and then the component parts of the evaluation. The evaluation is not simply the first step of care mandated by insurance companies and licensing boards, but an opportunity for the clinician to truly discover the source of a patient's voice or breathing condition and how voice or breathing function may improve if the patient is taught to use the mechanism differently.

Models of Care

The SLP is an integral member of the voice and upper airway care team, which is most often composed of the otolaryngologist (or laryngologist) and SLP, and in some cases, a neurologist or pulmonologist. In the realm of voice and upper airway rehabilitation, practice standards necessitate a multidisciplinary approach with more than one clinical specialty involved,[20] but there is variability in the way the care team collaborates across different models of practice. In the traditional model of care, the otolaryngologist sees the patient first and completes the medical history, head and neck examination, and likely a flexible endoscopic evaluation of the vocal folds or mirror examination. They may or may not complete laryngeal videostroboscopy. The physician determines whether to refer to the SLP for voice therapy, and the SLP may see the patient at a later date. Referrals to the SLP may come in the form of a written piece of paper, an electronic message, or perhaps a phone call. If the physician completes the laryngeal videostroboscopy, the SLP should ideally receive a video copy of the exam,[21] though it is not uncommon to receive only a still image or no image at all. At times, the SLP may receive a vague diagnosis of "dysphonia."

This traditional model of care is known to have communication barriers between the physician and SLP. Even in the most collaborative of cases, it takes considerable time beyond direct patient care for clinicians to achieve optimal communication. More importantly, patient care is impacted. Studies have shown that only 53% of patients referred to therapy in this traditional model make it to the initial therapy appointment,[22] and up to 74% of referrals in this model are inappropriate referrals for behavioral management (ie, medical management would be a more appropriate first-line treatment, perhaps with therapy to follow).[23]

In contrast, in the interprofessional model of care, both the physician and the SLP see the patient on the same day or even at the same time. There are established roles for each member of the team during the assessment, including history taking, head and neck examination, clinical voice assessment, completion of patient-reported outcome measures, voice recording, laryngeal videostroboscopy, acoustic and aerodynamic assessment, and stimulability for behavior change. The appointment usually includes shared decision-making regarding the plan of care by the physician and SLP, and either one or both professionals discuss treatment options with the patient.[24] There have been several published reports on the benefits of interprofessional care in voice, including improved treatment plans, better therapy attendance, and greater improvement in voice quality of life from pre- to posttreatment,[25–27] as well as reducing lost revenue by minimizing missed appointments.[27]

In Chapters 3 through 9, you will read cases that span a variety of care models. Regardless of the model of care, you will notice the multidisciplinary theme of collaboration between SLP and physician and how different teams communicate to share information.

The Importance of an Accurate Laryngeal Diagnosis

Who Is Responsible?

As previously described, the voice and upper airway care team is most often composed of the otolaryngologist (or laryngologist) and SLP. In some cases, a neurologist or pulmonologist may be the primary physician working with the SLP. In rare cases, a primary care physician or physiatrist may refer patients to the SLP.

The SLP's referral source is relevant since different medical specialties approach clinical problems through varying lenses and testing, impacting the final differential diagnosis.

The differential diagnosis drives treatment decisions and therefore treatment outcomes. The diagnosis is generally determined following, at a minimum, a medical history, clinical medical head and neck assessment, and laryngeal imaging. When the referral source does not conduct laryngeal imaging as part of their practice, as in the case of a neurologist or primary care physician, it is within the scope of practice for the SLP to complete laryngeal videostroboscopy. However, the SLP cannot render a laryngeal diagnosis and should therefore share the results with the referring physician for diagnosis.

Does the neurologist possess thorough knowledge of laryngeal disease for diagnosis? Does the primary care physician, physiatrist, or pulmonologist? While they are experts within their own specialties, they do not have expertise in diseases and disorders of the larynx. To render an accurate diagnosis and therefore an effective treatment plan, the most specifically qualified physician, the otolaryngologist, should review the laryngeal imaging examination. Incidental, or unexpected, findings may be uncommon, but they are possible. Unfortunately, each of the editors has seen tragic cases of malignant cancers inappropriately treated with antireflux medication or even voice therapy. These situations can arise when the laryngeal exam is not reviewed by a qualified examiner. Though the SLP can complete the laryngeal videostroboscopy, the editors strongly encourage making an otolaryngologist a member of *any* voice care team. Diagnosis is not within the scope of practice of the SLP, and best practice should keep laryngeal diagnosis within the purview of the otolaryngologist.

Laryngeal Diagnosis Informs Treatment Decisions

It is necessary to separate laryngeal diagnosis from disease diagnosis. A disease diagnosis, such as Parkinson's disease (PD), may be generally associated with a voice disorder, but there may be specific laryngeal findings to be addressed as well. In the case of PD, the voice disorder is typically due to a combination of glottal insufficiency, reduced respiratory support, and an impaired auditory feedback loop. Hypophonia associated with PD is often amenable to voice therapy, but there is a growing body of literature supporting the use of injection augmentation and medialization laryngoplasty in people with PD in addition to voice therapy.[28] Laryngeal imaging is necessary to assess glottal configuration and determine candidacy for such procedural interventions. Even treatments that have been researched with a particular population, such as LSVT LOUD® or Speak Out! for PD hypophonia or PhoRTE® for age-related voice changes, should not be applied prior to a comprehensive evaluation including laryngeal videostroboscopy and differential diagnosis from the otolaryngologist.

An accurate diagnosis aids the clinical decision of *if* and *when* to do voice therapy. If the voice problem is expected to recover with behavioral intervention, then voice therapy plays an important role in treatment.[21,29] If the problem is not expected to resolve with behav-

ioral intervention as a first-line treatment, then a procedure or surgery may be suggested, potentially with therapy to follow. In some cases, a malignant diagnosis is identified and immediate medical intervention is required. While patients who are status post treatment for laryngeal cancer can benefit from voice therapy to manage treatment-related sequelae, voice therapy is not a primary treatment for any malignant laryngeal condition. It is important to note there are some situations where the laryngeal diagnosis suggests that a particular behavioral therapy is contraindicated. For example, PhoRTE®, an effective therapy developed for patients with presbyphonia, is not an appropriate treatment for a patient with a primary diagnosis of phonotraumatic lesion(s) and could harm a patient if applied inappropriately.

Though an accurate diagnosis informs decision making and prognosis to a certain extent, the SLP treats voice *function* rather than laryngeal diagnosis, and it is worth reiterating that diagnosis does not dictate treatment. Voice function arises from the interaction of all voice subsystems (respiratory, phonatory, resonatory) and not the vocal folds alone. Frequently, the SLP will treat a patient with a voice disorder secondary to a condition that is not "cured" by voice therapy, though voice production can be optimized through voice therapy. For example, recurrent respiratory papillomatosis is often treated with multiple surgeries, and voice therapy would not be effective in treating these lesions. However, undergoing multiple papilloma resections may lead to vocal fold scarring and a subsequent voice decline. In these situations, voice therapy might be applied to optimize voicing efficiency, reduce vocal effort, and/or improve endurance. Each patient case is different, and the comprehensive voice evaluation provides the information needed to determine candidacy for behavioral intervention and what might be targeted and achieved in voice therapy.

Components of the Voice and Upper Airway Evaluation

The comprehensive evaluation consists of 11 component parts that clinicians use to develop a working hypothesis of the cause of the voice or upper airway problem, prognosis, and potential treatment plans. Table 1–1 outlines the recommended component parts of the evaluation and the responsible member of the care team.

The Physician's Medical Examination

When a new patient presents to an otolaryngologist's office with a voice or upper airway concern, the physician must complete a detailed medical history of the presenting problem and a comprehensive physical examination including inspection of the ear canal, nasal cavity, and oral cavity with particular attention to the tongue, buccal cavity, gums and palate, and palpation of the neck to look for larger lymph nodes and thyroid nodules. The physician is required to clearly document the examination findings and indicate those findings that guide their medical decision making about treatment, including the impact of medical comorbidities, the need for further testing, and the risks, benefits, and alternative treatment options associated with their recommendations.

Ideally, the referring physician also completes and documents a brief neurological examination (cranial nerve evaluation, primarily), especially in someone who presents with a neurologically based voice disorder, such as vocal fold paralysis or paresis, laryngeal dystonia, or voice disorders associated with progressive neuromuscular diseases such as PD or amyotrophic lateral sclerosis (ALS). While the otolaryngologist may be one of the first professionals to recognize a neuromuscular disease, essential tremor, or movement disorder due to the patient presenting with a primary voice or

Table 1–1. Components of the Comprehensive Voice Evaluation

Component	*Responsible Party*
Medical Examination	Physician
History of the Problem	Physician and SLP
Clinical Perceptual Evaluation	SLP; often used by physician to rate voice quality
Patient-Reported Outcome Measures	Provided by MD and/or SLP and completed by the patient
Visual Assessment of Soft Signs	Physician and SLP
Cranial Nerve Examination	Physician; often also completed by SLP
Motor Speech Testing	SLP
Manual Laryngeal Palpation	Physician for thyroid gland assessment, SLP for laryngeal height and paralaryngeal tension
Stimulability for Voice Change	SLP
Acoustic and Aerodynamic Assessment	SLP
Laryngeal Imaging: Diagnostic Laryngoscopy and Laryngeal Videostroboscopy	Diagnostic laryngoscopy: Physician Videostroboscopy and interpretation: Physician and/or SLP

swallowing concern, it should be noted that the otolaryngologist is not the primary physician who manages these conditions. Patients with concerning neurological findings should be referred to a neurologist for further evaluation and potential treatment, which may be complementary to the options offered by the otolaryngologist and SLP. The otolaryngologist should examine the base of tongue, hypopharynx, and larynx of anyone complaining of voice or upper airway problems. This might include indirect laryngoscopy with the use of a laryngeal mirror, flexible endoscopy, or videostroboscopy. The *Guidelines for the Treatment of Hoarseness: Dysphonia* state that the physician should share the findings from their method of laryngeal imaging with the SLP, beyond a written diagnosis.[21] This would ideally be a video recording of the evaluation, but if not available, static pictures of the vocal folds should be provided at a minimum. In patients who present with upper airway complaints like dyspnea or stridor, the physician should attempt to examine the subglottis to carina (bifurcation of the trachea to the left and right bronchial tubes). Often, patients with dyspnea are sent to the otolaryngologist prior to seeing pulmonary medicine. In these cases, it is appropriate to refer patients to a pulmonologist to determine if pulmonary disease plays a role in their dyspnea. Pulmonary function tests (PFTs) are diagnostic for restrictive and obstructive pulmonary disease and guide the pulmonologist on treatment. Chronic cough or ILO/EILO can be isolated conditions, or they can co-occur with asthma, chronic obstructive pulmonary disease (COPD), or bronchiectasis, which can be treated with medications.