

**Supplemental Table S1.** International Classification of Diseases, Ninth Revision (ICD-9) codes used to identify potential study participants.

Group	ICD-9 codes
A. Benign voice disorders	333.1, Vocal tremor 462, Sore throat 478.30-478.79, Vocal fold paresis/paralysis, benign mass, edema, bowing, spasmodic dysphonia, & hyperfunction 784.42-784.49, Dysphonia/hypophonia
B. Neurologic conditions	331.9, Cerebral degeneration 332.0, Parkinson’s disease 333.0, Multiple systems atrophy 334.3-334.8, Ataxia 335.20-335.24, ALS 340, Multiple sclerosis 356.9, Peripheral neuropathy 358.01, Myasthenia gravis 359.21-359.71, Dystrophy/myositis 431, 434.91, 437.9, 438.13-438.89, V12.54 CVA/Effects of stroke 710.3-710.4, Myositis 781.0, Dystonia
C. Head and neck cancer	140.1, Cancer of lower lip 141.0-141.9, Tongue cancer 142.0, Cancer of parotid gland 143.1, Cancer of lower gum 144.9-145.9, Cancer of floor of mouth, buccal cavity, palate, oral cancer 146.0-146.6, Tonsil cancer 147.9, Nasopharynx cancer 148.0-149.0, Cancer of hypopharynx 150.0-150.9, Cancer of cervical esophagus 160.0, Cancer of nasal cavity 161.0-161.9, Laryngeal cancer 171.0-173.92, Sarcoma of neck/squamous cell carcinoma 193, Thyroid cancer 195.0-198.89, Cancer of jaw, lymph nodes, or neck 235.6, Laryngeal neoplasm 526.89, Osteoradionecrosis of jaw 784.41, Aphonia V15.29, History of parathyroidectomy V55.0, Attention to tracheostomy
D. Hearing impairment	389.03-389.06, Conductive hearing loss 389.10-389.18, Sensorineural hearing loss 389.20-389.22, Mixed hearing loss 389.9, Unspecified hearing loss