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Common Diagnosis and Characteristics of Speech Impairments Necessitating an SGD

Diagnosis	ICD10-Code	Definition	Medical Diagnosis	Characteristics	Evaluation and Differential DX.	Functional Needs/SGD implications
Dysarthria Anarthria	ICD10-R47.1	Dysarthria is a motor speech disorder resulting from disturbed neuromuscular control of the speech mechanism due to damage of the peripheral or central nervous system causing impairments in strength, speed, range and accuracy of muscle movements.	Amyotrophic lateral sclerosis (ALS), Multiple Sclerosis (MS), Guillian-Barre Syndrome, Parkinson's Disease, Wilson's Disease, Progressive supranuclear palsy, Huntington's Disease, Myasthenia Gravis, Friedreich's ataxia, Stroke (CVA), Traumatic Brain Injury (TBI), Cerebral Palsy, Moebius syndrome, encephalitis	Muscle weakness, paralysis, incordination of oral/motor mechanism Dysphagia (frequently accompanies dysarthria) Impairments in respiration, phonation, articulation, resonation, & prosody Problems with production of speech, volume and quality of voice, rate, rhythm and naturalness	Oral/Peripheral Examination noting abnormal musculature, movement of the articulators. If verbal, collect a speech sample and determine if there are few words/breath, reduced volume, impairments in vocal quality, melodic line, hyper or hypo nasality, and consistent and predictable articulatory distortions and omissions. If intelligibility is compromised, get an estimated intelligibility measure for both familiar and unfamiliar partners. *Assessment of Intelligibility of Dysarthric Speakers (*Yorkston & Beukelman)	If client is dysarthric (no aphasia or other cognitive/linguistic impairments) intelligible speech output is the greatest functional need. Need to communicate complex language intelligibly in multiple settings with a variety of partners. If client is dysarthric but has other neurogenic language problems, functional communication goals are determined based on needs and abilities.
Apraxia	ICD-10-R48.2	**Acquired**: A sensorimotor disorder of articulation and prosody resulting from brain injury, characterized by impaired capacity to program and position speech musculature & sequencing of movements for volitional production of speech. **Developmental Apraxia of Speech (DAS)** A speech disorder in children characterized by sensorimotor problems in positioning and sequentially moving muscles for volitional production of speech; associated with prosodic problems; not caused by muscle weakness; a disorder of motor programming for speech	Stroke (CVA), Traumatic Brain Injury (TBI), Parkinson's No demonstrated neuropathology Developmental Delay, Cerebral Palsy, Rett Syndrome, Autism, Down Syndrome, generalized hypotonia	Articulatory groping and prosodic problems, inconsistency in articulatory production, dysfluencies Reduced speech rate Motor planning difficulties Normal oral mechanism and function Note: Severe apraxia often occurs with aphasia Articulatory groping, inconsistency, phonemic sequencing errors, resonance, prosodic problems, dysfluencies	Oral/Peripheral Examination is normal. There are no structural or functional problems noted. There may be some mild hypotonia noted and reduced sensation. Speech productions are inconsistent and unpredictable. Spontaneous (automatic) productions better than imitated productions. Some limited automatic speech may be present. Speech is dysfluent and characterized by groping. Evoke imitative production of speech sounds, syllables, words, phrases, and sentences. *Tasks for Assessing Motor Speech Programming Capacity* Oral/Peripheral Examination normal with the exception of hypotonia and reduced sensation. Language measures indicate comprehension significantly above expressive abilities Assess imitation of non-speech movements Assess imitation of vowels, consonant, and consonant vowel syllables Administer *Screening Test of Developmental Apraxia of Speech* or other Praxis formal measures	If client has other neurogenic expressive language problems (Broca's or expressive aphasia) the SGD must support language generation. Features such as word and grammatical prediction, core vocabulary on a clearly represented display to support sentence structure serve as a scaffold for language. If client is apraxic and aphasic communication with care provider and family members will be very important. Client may also need to communicate medical and physical needs to medical personnel. Developmental apraxia may be present in individuals with other developmental or specific language disorders. Communicate basic needs, wants, and express him/herself at a level commensurate with receptive language abilities
Aphonia	ICD10-R49.1	Aphonia means "no voice". It can be due to an injury or condition, which prevents the vocal cords from coming together and vibrating.	Locked-In Syndrome Traumatic Brain Injury Oral/Trach ventilator dependent Laryngectomy Myasthenia gravis, Parkinson's, Multiple Sclerosis, neurogenic voice disorder, spastic dysphonia	Unable to produce voice (phonation). Vocal cords cannot come together and vibrate.	An ENT or otolaryngologist must first rule out other surgical or therapy treatments. Oral/motor evaluation and speech evaluation will reveal aphonia.	Functional communication to meet basic medical, physical needs if client is in medical facility (Locked-In Syndrome, TBI)

Aphasia following cerebrovascular disease Unspecified disease Subarachnoid hemmorhage Infarction Intercerebral hemmorahage Nontraumatic intercerebral hemorrhage Nontraumatic intracerebral hemorrhage Other Cerebralvascular disease	ICD-10-R47.01 ICD-10-I69.920 ICD-10-I69.020 ICD-10-I69.320 ICD-10-I69.020 ICD-10-I69.120 ICD-10-I69.220 ICD-10-I69.820	Acquired neurogenic language disorder due to lesions in the dominant left hemisphere language areas and related sub cortical structures	Stroke (CVA), Traumatic Brain Injury (TBI), CNS infection or disease	Right facial paralysis, normal oral mechanism Impairments can be in auditory comprehension, reading, expressive language and writing	*Porch Index of Communicative Abilities, Boston Diagnostic Aphasia Examination* for adults, *Functional Auditory Comprehension Task.* Functional measures of comprehension (patient's ability to respond to simple and complex directions given physical limitations. *Communicative Abilities in Daily Living*	Communicate functional needs, engage in social exchanges with family, friends, medical professionals, care providers, communicate on the phone
Aglosia	ICD-10-CM Q38.3 Note: Look up ICD-10 codes for non congential defects	Absence of the tongue (due to surgical removal or congenital defect)	Oral Cancer Birth defect	Absent tongue	Oral/Peripheral Examination reveals glossectomy	Identify functional goals that require SGD such as using the telephone to make emergency calls or schedule appointments. If Glossectomy is the only diagnosis, client will be able to write and use gestures. Goals need to address medically necessary reason for the SGD. Client may prefer SGDs that require message formulation by spelling and access by direct selection.
Developmental Language Disorder (Developmental aphasia, expressive language disorder Other developmental disorders of speech and language Expressive Language Disorder	ICD-10-F80.9 ICD-10-F80.89 ICD-10-F80.1	Difficulty in producing semantic, phonologic, syntactic, morphologic, and pragmatic aspects of language; Specific language impairment refers to language problems with no other problems	Autism, Pervasive Developmental Disorder, Disintegrative Disorder, Fragile X Syndrome, Rett Syndrome, Specific Developmental Disorder	Diagnosis of Autism of PDD is typically made before age 3. Infant may have started to develop normally and then regress suddenly (Disintegrative Disorder, Rett Syndrome) or more gradually (Autism, PDD). Features may also have been present from birth. Social, cognitive, and language deficits, restricted play and interests, rigid. Range from verbal-nonverbal.	<u>Infants and Toddlers</u> Assess feeding and oral/motor development *Communication Sampling and Analysis* *Rosetti Infant Toddler Language Scale* *Transdisciplinary Play-Based Assessment* (Toni Linder; Brookes Pub.) *Communication and Symbolic Behavior Scales* (Wetherby & Prizant) <u>School-Aged</u> *Receptive One-Word Picture Vocabulary Test-2000 Edition* *Expressive One-Word Picture Vocabulary Test-2000 Edition* *Preschool Language Assessment Instrument* *Reynell Developmental Language Scales* *Clinical Assessment of Language Comprehension (*Miller & Rhea; Brookes Pub). *Test of Auditory Comprehension of Language-Third Edition* *Clinical Evaluation of Language Fundamentals*	Scripted vocabulary minimizes language demands and helps structure the interaction. Core vocabulary organized in a predictable pattern using color-coding and left to right (word order) for sentence generating. Word prediction features and display serves as a cue for word finding and serves as scaffold for language generation. Random messages (conveying the same message in different ways) help PDD/Autism compensate for rigidity. Devices programmed with tag questions following the provision of information supports interaction.
Mixed receptive/expressive language disorder	ICD-10-F80.2	Difficulty in <u>comprehending and/or producing</u> semantic, phonologic, syntactic, morphologic, and pragmatic aspects of language	Mental Retardation, developmental delays, may be associated with a variety of syndromes, which are associated with communication disorders or an undiagnosed developmental delay.	Diagnosis of Mixed receptive/expressive language disorder is made based on the performance on formal language measures. There are discrepancies between cognitive functioning and language functioning (language being lower than overall cognitive functioning)	Same assessment measures as ICD-9 315.31 Neurophsychological testing either confirms or rules-out the presence of a primarily language based impairment	SGDs can be used as tools for language development. Medically they can be used to compensate for receptive/expressive limitations and meet functional communication needs. The SGD software should support language and provide scaffolds, which match the language user's needs.
Phonological disorder	ICD-10-F80.0	Not associated with peripheral or central nervous system lesion	Mental retardation, Down Syndrome, Cri Du Chat, Cornelia de Lange, Fetal Alcohol, Moebius, Noonan, Treacher Collins,	Facial hypotonicity, abnormalities in structure and function of the articulators, severe articulatory imprecision (omissions, distortions)	Language measures as described in ICD 9-315-31 and ICD 9-315.32) Articulation Measures such as *Fisher-Logemann Test of Articulatory Competence,* *Goldman-Fristoe Test of Articulation* *Templin-Darley Test of Articulation*	Some articulatory disorders are of such severity that functional speech production is not a realistic goal with traditional Speech Therapy. Evaluator must document the lack of progress, poor stimulability of client, and illustrate the benefits of an SGD in providing speech output.

Test References

Blakely, R. *Screening Test of Developmental Apraxia-2nd Edition.* Pro.Ed.
Blank, M., Rose, S., & Berlin, L *(2000).* Preschool Language Assessment Instrument (PLAI-2-). AGS Publishing.
Brownell, R. (2000). *Receptive One-Word Picture Vocabulary Test-2000 Edition.* Academic Therapy Publications.
Brownell, R. (2000). Expressive One-Word Picture Vocabulary Test-2000 Edition, NCS Pearson Inc.
Carrow-Wilfolk, E. (1999). *Test of Auditory Comprehension of Language-Third Edition.* AGS Publishing.
Duffy, J.R. (995) *Motor speech disorders: Substrates, differential diagnosis, and management*. St. Louis, MO: C.V. Mosby
Fisher, H. & Logeman, J. *Fisher-Logemann Test of Articulatory Competence*
Goldman, M. & Fristoe*, M. Goldman-Fristoe Test of Articulation*
Goodglass, H. & Kaplan, E. *Boston Diagnostic Aphasia Examination*.
Holland, A. *Communicative Abilities in Daily Living*
LaPointe, L.L., & Horner, J. *Functional Auditory Comprehension Task*.
Porch, B.E. *Porch Index of Communicative Abilities*.
Reynell, J. (1990) *Reynell Developmental Language Scales.* Windsor: NFER.
Semel, E. M., Wiig, E. H. & Secord, W. (1980) *Clinical Evaluation of Language Fundamentals-Revised*. San Antonio, TX: Psychological Corporation.
Templin, M.C. & Darley, F.L. *Templin-Darley Test of Articulation*
Wetherby & Prizant *Communication and Symbolic Behavior Scales*
Yorkston & Beukelman *Assessment of Intelligibility of Dysarthric Speakers*