



CLINICAL GUIDELINES

Speech Therapy

Effective February 1, 2017

CareCore National, LLC d/b/a eviCore healthcare (eviCore)





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Dear Provider,

This document provides detailed descriptions of eviCore's basic criteria for musculoskeletal management services. They have been carefully researched and are continually updated in order to be consistent with the most current evidence-based guidelines and recommendations for the provision of musculoskeletal management services from national and international medical societies and evidence-based medicine research centers. In addition, the criteria are supplemented by information published in peer reviewed literature.

Our health plan clients review the development and application of these criteria. Every eviCore health plan client develops a unique list of CPT codes or diagnoses that are part of their musculoskeletal management program. Health Plan medical policy supersedes the eviCore criteria when there is conflict with the eviCore criteria and the health plan medical policy. If you are unsure of whether or not a specific health plan has made modifications to these basic criteria in their medical policy for musculoskeletal management services, please contact the plan or access the plan's website for additional information.

eviCore healthcare works hard to make your clinical review experience a pleasant one. For that reason, we have peer reviewers available to assist you should you have specific questions about a procedure.

For your convenience, eviCore's Customer Service support is available from 7 a.m. to 7 p.m. Our toll free number is (800) 918-8924.

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Table of Contents

Speech-Language Pathology Policy.....	5
Adult Spoken Language Evaluation	15
Aphasia	24
Apraxia of Speech (AOS).....	30
Apraxia (Pediatrics).....	36
Aural Rehabilitation	42
Cognitive-Communication Disorder(s).....	50
Developmental Speech and Language Disorders in Children	57
Dysarthria.....	65
Dysphagia (Swallowing Disorder) and Instrumental Assessment in Adults.....	71
Dysphagia (Swallowing Disorder) in Children	83
Feeding Aversion	89
Fluency Disorder	93
Hearing Screening.....	102
Pediatric Spoken Language Evaluation.....	106
Tongue Thrust: Orofacial Myofunctional Disorder	115
Voice Evaluation and Therapy	119
Diagnosis Codes	126

Speech-Language Pathology Policy

Subject:

Speech-Language Pathology (Speech Therapy)

Description:

Speech therapy is the treatment of speech/language production, voice production, swallowing function, cognitive-linguistic skills, and/or general communication abilities that have been impaired as a result of a disease, injury, developmental delay or surgical procedure. The purpose of speech therapy is to provide necessary services for the diagnosis and treatment of impairments, functional limitations, disabilities or changes in speech/language production, voice production, swallowing function, cognitive-linguistic skills, general communication deficits, and compensatory communication abilities. Speech therapy is medically necessary to help restore functional speech, swallowing and language following the onset of their impairment.

NOTE: Contract limitations for speech therapy services will determine the available benefit if such therapy is determined to be medically necessary.

Medically Necessary Services:

To be considered reasonable and necessary the following conditions must each be met:

- Services are for the treatment of a covered injury, illness or disease, and are appropriate treatment for the condition
- Treatments are expected to result in significant, functional improvement in a reasonable and generally predictable period of time, or are necessary for the establishment of a safe and effective maintenance program. Treatment should be directed toward restoration or compensation for lost function. The improvement potential must be significant in relation to the extent and duration of the therapy required
- The services must be currently accepted standards of medical practice, and be specific and effective treatments for the patient's existing condition
- The complexity of the therapy and the patient's condition must require the judgment and knowledge of a licensed qualified clinician practicing within the scope of practice for that service. Services that do not require the performance or supervision of a qualified clinician are not skilled and are not considered reasonable or necessary therapy services, even if they are performed or supervised by a qualified professional.
- The amount, frequency, and duration of the services must be reasonable under accepted standards of practice.
- Services shall be of such a level of complexity and sophistication or the condition of the patient shall be such that the services required can be safely and effectively performed only by a therapist, or in the case of physical therapy and occupational therapy by or under the supervision of a therapist. Services that do

not require the performance or supervision of a therapist are not skilled and are not considered reasonable or necessary therapy services, even if they are performed or supervised by a qualified professional.

For these purposes, “generally acceptable standards of practice” means standards that are based on credible scientific evidence published in the peer-reviewed literature generally recognized by the relevant healthcare community, specialty society evidence-based guidelines or recommendation, or expert clinical consensus in the relevant clinical areas.

Care Classifications

Therapeutic Care

Therapeutic care is care provided to relieve the functional loss associated with an injury or condition and is necessary to return the patients to the functioning level required to perform their daily needs and work activities. Speech and language disorders and swallowing problems (dysphagia) tend to have periods of plateau followed by functional improvements.

In addition, the symptoms will change over time. Therefore, discharge planning will consider when further treatment is expected to provide little or no measurable improvement for the condition being treated, or when symptoms have resolved or maximum potential has been met and/or a plateau has been reached maximum potential achieved and the individual patient/family circumstances. Therapeutic care generally occurs within a reasonable period of time and is guided by evidence based practice of speech therapy.

Therapeutic Care

Early Stage Treatment

- Explore factors that could impact outcomes now and in the future.
- Explore strengths and weaknesses, and other components for best treatment outcomes.
- Explore patient and family understanding, challenges and capabilities to develop education and training programs.
- Develop a treatment program based on findings and best practices.
- Develop an individualized supplemental home program to monitor and change as needed.

Ongoing Treatment

- Provide patient/family ongoing education and training
- Assess response to and feedback from home program to modify, and update as needed
- Assess ongoing response to treatment, gains, lack of progress, and other factors; modify program as needed
- Determine other factors impacting condition requiring intervention or referral.

Later Stage of Treatment/Discharge Planning

- Provide suggestions and resources for follow-up.
- Provide home program to maintain gains.
- If discharge is due to medical issues, and or a plateau in progress, indicate under what future conditions a new referral would be warranted.

Palliative Care (Noncovered Service)

Palliative care is typically given to alleviate symptoms and does not provide corrective benefit to the condition treated. A patient receiving palliative care, in most instances, demonstrates varying lapses between treatments. If an exacerbation of a condition occurs, care becomes therapeutic rather than palliative, and documentation of the necessity for care (e.g., etiology of exacerbation, objective findings, and desired outcomes) must be obtained.

Preventive Care Examinations (Non-covered Service)

Preventive care includes management of the asymptomatic patient. Preventive care examinations may include speech, language and cognitive screenings or swallowing screenings.

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

Habilitation

Speech therapy services provided in order for a person to attain and maintain a skill or function for daily living, that was never learned or acquired and is due to a disabling condition such as developmental delay, developmental disability, developmental speech or language disorder, developmental coordination disorder and mixed developmental disorder.

Criteria/Guidelines for Provision of Speech Therapy (ST)

Indications for Coverage

1. Contract limitations for speech therapy (ST) services will determine the available benefit if such therapy is determined to be medically necessary.
2. Speech therapy services must be ordered by a physician.
 - Each member should be provided with a treatment plan at their start of care describing appropriate treatment approach.
 - The member's treatment plan must contain objective data, reasonable expectations, and measurable goals for a specific diagnosis.
 - Re-assessments of member progress should be undertaken as part of every ongoing ST session; assessments of this nature should be included in the treatment session and should not be performed in a separate treatment session.
 - The assessment is a part of ongoing care and should occur throughout each treatment session so that therapy continues to be patient-focused to meet the changing needs of the member.
 - A formal and or informal reassessment with objective measures and updated goals should occur at least every 30 to 60 days for adults and every 6 to 9 months for children (birth to 21 years).
 - Lack of measureable and significant change at reassessments should result in a change in the program or discharge to a home management program.
3. Speech therapy services are reviewed and evaluated by CareCore National periodically during a member's episode of care.
 - At each review, the clinical reviewer will evaluate the key objective and subjective measures of the member's clinical status, with a focused review on function.
 - This information, in the context of the generally accepted natural history of the condition(s) under care, will be used to determine the medical necessity of the care provided to date, and/or the care that is proposed.
 - Refer to the Clinical Practice Guidelines, Patient History and Presentation for information on specific conditions.

Reasonable and Necessary Services

Speech therapy (ST) services are considered medically necessary when all of the following criteria are met:

1. Therapy requires the judgment, knowledge and skills of a qualified provider of speech therapy services due to the complexity and sophistication of the therapy and the condition of the patient.
 - A qualified provider (speech-language pathologist) of speech services is one who is licensed where required and performs within the scope of licensure.
 - Services provided by ST aides or other non-qualified professionals are not covered.

2. ST services meet the functional needs of the member who suffers from impairment due to illness, disease, injury and are appropriate treatment for the condition.
 - The patient must have functional deficits that interfere with Activities of Daily Living
 - Refer to the Clinical Practice Guidelines, Symptomatology, for information on specific functional losses for specific conditions.
3. ST services achieve a specific diagnosis-related goal for a member, who has a reasonable expectation of achieving measurable improvement, in a reasonable and predictable period of time.
 - Significant is defined as a measureable and meaningful increase (as documented in the patient's record) in the patient's level of functional improvement in communication, speech production, cognitive, or swallowing abilities that can be attained (with short-term therapy, usually within 30 to 60 days for adults and 6 months for children (birth to 21 years). (Contract limitations will determine the available benefit.)
4. ST services inherently include the introduction and provision of, and education about a home (self) management program, appropriate for the condition(s) under treatment. In keeping with professional standards, this home management program should be introduced into the course of treatment at the earliest appropriate time. (This may also be applicable to parents, guardians, or caregivers of pediatric patients and adult patients needing assistance.)
5. ST services provide specific, effective, and reasonable treatment for the member's diagnosis and physical/ cognitive condition. Refer to the Clinical Practice Guidelines for a review of specific conditions and their clinical course.
 - ST services must be described using standard and generally accepted medical/speech therapy/rehabilitation terminology. Such terminology includes objective measurements for speech/language production, voice production, swallowing function, cognitive-linguistic skills, general communication deficits, and/or compensatory communication abilities. Standardized tests are required. Examples of validated tests include the Apraxia Battery for Adults, Boston Diagnostic Aphasia Exam, Frenchay Dysarthria Assessment, Ross Information Processing Assessment, Stuttering Severity Instrument, Goldman-Fristoe 2 Test of Articulation, Preschool Language Scale, Comprehension Assessment of Spoken Language, Rossetti Infant-Toddler Language Scale, Kaufman Speech Praxis Test for Children, Expressive One Word Picture Vocabulary Test, and the Receptive One Word Picture Vocabulary Test.
 - Standardized subjective measurements including standard score, percentile rank, and age equivalent scores for each standardized test administered are also expected

6. Group therapy programs defined as the simultaneous treatment of two patients for the treatment of speech and/or language delays/disorders are a covered benefit for some insurance providers.
 - Group therapy is effective for improving functional speech and communication skills with peers. The size of the group should not exceed four.
 - ASHA's Group Treatment Model medical review guidelines for speech-language pathology services (ASHA, 2004b) indicate that group treatment is generally a covered service if: group therapy services are rendered under an individualized plan of treatment and are integral to the achievement of the patient's individualized goals, the skills of a speech-language pathologist are required to safely and/or effectively carry out the group services, the group consists of four or fewer group members (Medicare recommendations), and the group therapy satisfies all of the "reasonable and necessary criteria" listed under Indications and Limitations of Coverage.

Speech Therapy Services Are Not Medically Necessary Under Any Of The Following Circumstances:

1. ST services are only considered medically necessary for the restoration of basic functional activities of daily living. Providing services to modify or enhance communication performance (e.g., accent modification, transgender voice, care and improvement of the professional voice, personal/professional communication effectiveness) is not a covered benefit.
2. Also excluded is therapy to address accent reduction, mild and moderate developmental speech or language delays, mild fluency disorders (stammering and stuttering), and education learning services such as reading, writing, and spelling, studying and, feeding aversions in the absence of an oral and/or pharyngeal dysphagia.
3. Ongoing or prolonged treatment for chronic conditions is not considered medically necessary in the absence of measurable improvement that is sustained from treatment visit to treatment visit. Therapy is also not covered when the condition is not expected to improve significantly within a reasonable time period.
4. ST treatment must include active, skilled therapy (i.e. that requires a speech-language pathologist or physician) during each session, at intensity and of duration necessary to the condition(s) under treatment.
 - Non-skilled therapy includes but is not limited to routine, repetitive and reinforced procedures that do not require one-to-one intervention such as repetitive articulation drills, repetitive non-skilled feeding trials, repetitive oral motor exercises to maintain current functional level. These procedures do not generally require the skills of a qualified provider of ST services and are therefore not covered.

5. The intensity or frequency of care should not exceed the number of visits necessary for a clinician to provide skilled care.
6. Repetitive care is not considered skilled and can be transitioned to a home management program. (For example a member who is receiving treatment for oral motor exercises to maintain range of motion, strength, and control for intelligible speech production and/or oral management of liquids and solids following a neurological event such as a stroke or head injury will require initial visits for instruction and periodic visits to provide additional training and update the member's home program. This normally does not exceed one to 2 visits weekly.) Refer to the Clinical Practice Guidelines for examples of treatment progression based on the nature and severity of clinical findings.
7. Treatment of specific developmental delay or speech and language delays, unless specifically covered under the member contract; e.g. attention deficit disorders, behavior problems, conceptual handicap, intellectual disability, psychosocial speech delay.
8. Duplicate therapy is not covered:
 - When a patient receives both speech and occupational or physical therapy, the therapies should provide different interventions and not duplicate the same treatment. They must have separate treatment plans and goals with treatment occurring in separate treatment sessions and visits. If co-treatment is provided, only one provider will be paid for the treatment time.
9. Treatment of psychoneurotic or psychotic conditions
10. Treatment of self-correcting conditions such as hoarseness, developmental articulation errors
11. Language therapy for young children with natural dysfluency
12. Treatment of functional dysphonia
13. Instruction of other professional personnel in the patient's speech therapy program
14. Collaboration with other professional personnel or with other community resources

Discharge Criteria

Criteria utilized for determining whether a member is eligible for discharge from ST is determined based on the following (objective data) and is available in the Clinical Practice Guidelines under Discharge Criteria:

1. The speech, language, communication, voice or swallowing disorder is now defined within normal limits or is now consistent with the individual's premorbid status
2. The goals and objectives of treatment have been met.

3. The individual is unwilling to participate in treatment; treatment attendance has been inconsistent or poor and efforts to address these factors have not been successful.
4. The individual, family, and/or guardian requests to be discharged
5. Treatment no longer results in measurable benefits. There does not appear to be any reasonable prognosis for improvement with continued treatment.
6. The individual is unable to tolerate treatment because of a serious medical, psychological, or other condition.
7. The individual demonstrates behavior that interferes with improvement or participation in treatment (e.g., noncompliance, malingering), providing that efforts to address the interfering behavior have been unsuccessful.
8. Certain modalities or interventions employed by speech-language pathologists also may not be covered. Coverage may also be limited due to the lack of supporting scientific evidence. Landmark continually researches new and existing technologies used by speech-language pathologists. Landmark has also developed copyrighted Clinical Practice Guidelines that use evidence-based research to address various conditions.

Speech Services under Medicare:

Reevaluation of patients for whom speech, language and swallowing were previously contraindicated is covered only if the patient exhibits a change in medical condition. Continuous assessment of the patient's progress is a component of ongoing therapy services and is not payable as a re-evaluation.

Aural Rehabilitation: Coverage for speech reading is only allowed with documentation that supports a loss of hearing sensitivity that cannot be corrected with a hearing aid or amplification. Documentation should also support visual acuity of the beneficiary sufficient to participate in aural rehabilitation.

Group therapy sessions must meet the individualized plan of treatment requirement and are not subject to reimbursement if these criteria are not met. Group therapy coverage for speech reading can be covered (if medically justified) if the following criteria are met:

- Services are rendered under an individualized plan of care
- The group has no more than four group members
- Group therapy does not represent the entire plan of treatment

Laryngoscopy, flexible or rigid fiberoptic, with stroboscopy. This procedure may be used for assessing voice production and vocal function. It may be performed by qualified speech-language pathologists.

Speech-language pathology services provided for chronic disorders of memory and orientation are covered services when significant functional progress is demonstrated at early stages of the disorder. When functional progress plateaus, the development of a

maintenance program, including training of caregivers and family members is covered. Preparation of memory aids such as memory books, memory boards, or communication books may be covered. Supervision of the use of such aids is not covered as these services do not require the skills of a qualified therapist.

Noncovered by CMS:

1. The following disorders are typically non-covered for the geriatric Medicare beneficiary:
 - Fluency disorder
 - Conceptual handicap
 - Dysprosody
 - Stuttering and cluttering (except neurogenic stuttering caused by acquired brain damage)
 - Myofunctional disorders, e.g., tongue thrust
2. Provision of practice for use of augmentative or alternative communication systems.
3. Although SLPs may perform laryngoscopy for the assessment of voice production and vocal function, laryngoscopy for medical diagnostic purposes must be performed by a physician.
4. Generally, group therapy sessions, except as specified above, are not covered. Group therapy sessions in social organizations such as the stroke club or lost cord club are not covered.
5. SLP services provided for chronic disorders of memory and orientation are non-covered services and do not require the skills of a qualified therapist.
6. Preparation of memory aids such as memory books, memory boards or communication books may be covered. Supervision of the use of such aids is not covered as these services do not require the skills of a qualified therapist.
7. All SLP services provided by anyone other than a licensed SLP, including a speech-language pathology assistant or aide, are not covered.
8. The school system provides educational speech; therefore, educational speech is not a covered Medicaid or CSHCS benefit. Examples of educational speech are enhancing vocabulary, improving sentence structure, improving reading, increasing attention span, and identifying colors and numbers.

Medicare References:

1. Centers for Medicare & Medicaid Services (CMS), CMS Manual System-Pub 100-02 Medicare Benefit Policy, Transmittal 179, Manual Updates to Clarify Skilled Nursing Facility (SNF), Inpatient Rehabilitation Facility (IRF), Home Health (HH), and Outpatient (OPT) Coverage Pursuant to Jimmo vs. Sebelius.
<http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R179BP.pdf>
2. Centers for Medicare & Medicaid Services (CMS), Medicare Benefit Policy Manual-Pub. 100-2: Chapter 15, Section 220, Covered Medical and Other Health Services, Conditions of Coverage and Payment Outpatient Physical Therapy, Occupational Therapy, or Speech-Language Pathology Services.
<http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/bp102c15.pdf>
3. Centers for Medicare & Medicaid Services (CMS), Medicare Benefit Policy Manual-Pub. 100-2: Chapter 15, Section 230, Covered Medical and Other Health Services, Practice of Physical Therapy, Occupational Therapy, and Speech Language Pathology. <http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/bp102c15.pdf>

References:

4. American Speech-Language-Hearing Association. (2004). Preferred Practice Patterns for the Profession of Speech-Language Pathology [Preferred Practice Patterns]. Available from www.asha.org/policy.
5. American Speech-Language-Hearing Association. (2007). Scope of Practice in Speech-Language Pathology [Scope of Practice]. Available from www.asha.org/policy.
6. American Speech-Language-Hearing Association. (2004).
7. Admission/Discharge Criteria in Speech-Language Pathology [Guidelines]. Available from www.asha.org/policy.
8. American Speech-Language-Hearing Association. (2005). Evidence-Based Practice in Communication Disorders [Position Statement]. Available from www.asha.org/policy.
9. American Speech-Language-Hearing Association. (2005). Quality Indicators for Professional Service Programs in Audiology and Speech-Language Pathology, [Standards/Quality Indicators]. Available from www.asha.org/policy.
10. APTA, Defining Skilled Maintenance Therapy and Minimizing Denials, April, 2014.
11. Speech-Language Pathology Medical Review Guidelines by ASHA, 2011 Available from www.asha.org/policy.

Adult Spoken Language Evaluation

Definition

A comprehensive spoken language evaluation assesses speech, language, cognitive-communication in adults, including identification of impairments, associated activity and participation limitations, and context barriers and facilitators.

Cerebral Vascular Accident
Traumatic Brain Injury
Progressive Neurological Disease
Brain Infection/Meningitis
Dementia

Criteria for Evaluation

“Adults of all ages are eligible for speech-language pathology assessment when their ability to communicate effectively is reduced or impaired or when there is reason to believe (e.g., risk factors) that treatment would prevent the development of a speech, language, or communication, reduce the degree of impairment; lead to improved functional communication or prevent the decline of communication.”

Eligibility for evaluation is indicated if one or more of these factors are present:

1. Referral from the individual, family member, audiologist, physician, other speech-language pathologist, or interdisciplinary team because of a suspected speech, language, or communication, disorder.
2. Failure to pass a screening assessment for communication and/or swallowing function.
3. The individual is unable to communicate functionally across environments and communication partners.
4. The individual's communication abilities are not comparable to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
5. The individual's communication skills negatively affect health, safety, social or vocational status.
6. The individual, family, and/or guardian seek services to achieve and/or maintain functional communication (including alternative and augmentative means of communication).

Provider Requirements

A speech-language pathologist (SLP) has a master's or doctoral degree and is licensed, if applicable, as a speech-language pathologist by the state in which he or she is practicing. The SLP possesses a Certificate of Clinical Competence (CCC) from ASHA or has met all the educational requirements leading to the CCC, and is in the clinical fellowship (CF) year or is otherwise eligible for the CCC.

- Licensed and provisionally licensed speech-language pathologists; and
- Home health agencies that employ or contract with licensed speech-language pathologists.

Speech-Language evaluations may not be performed by speech language therapy assistants

Evaluation Tests

- Standardized for a specific disorder identified; or
- Consist of a standardized caregiver report format; or
- Composed of professionally acceptable therapeutic observational techniques utilizing a formalized
- Checklist or observational tools

Language and Cognitive Tests

Aphasia:

Left Hemisphere:

1. Boston Assessment of Severe Aphasia (BASA), Helm-Estabrooks, 1992
2. Boston Diagnostic Aphasia Examination, Goodglass, Kaplan and Barresi, 2001
3. Communication Activities of Daily Living (CADL-2), Holland, Frattali, Froman, 1999
4. Reading Comprehension Battery for Aphasia (RCBA-2) La Pointe & Horner, 1998
5. Western Aphasia Battery (WAB), Kertesz, 1982

Right Hemisphere:

1. Boston Diagnostic Aphasia Examination, Goodglass, Kaplan and Barresi, 2001
2. Cognitive Linguistic Quick Test (CLQT), Helm-Estabrooks, 2001
3. Communicative Abilities in Daily Living (CADL), Holland, 1980
4. Discourse Comprehension Test, Bookshire and Nicholas, 1913

5. Mini Inventory of Right Brain Injury (MIRBI-2), Pimental and Kingsbury, 2000
6. Revised Token Test (RTT), McNeil and Prescott, 1978
7. Right Hemisphere Language Battery (RHLB), Bryan, 1994
8. Ross Information Processing Assessment (RIPA-2). Ross-Swain, 1996
9. Ross Information Processing Assessment-Geriatric (RIPA-G), Ross-Swain & Fogle, 1996
10. Ross Information Processing Assessment-Primary (RIPA-P), ROSS-SWAIN, 1999
11. Weschler Memory Scale-Revised, Wechsler, 1987

TBI

1. Boston Diagnostic Aphasia Examination, Goodglass, Kaplan and Barresi, 2001
2. Boston Naming Test, Goodglass, Kaplan and Barresi, 2001
3. Brief Test of Head Injury, Eelm-Estabrooks & Hotz, 1991
4. Cognitive Linguistic Quick Test (CLQT), Helm-Estabrooks, 2001
5. Communicative Abilities in Daily Living (CADL), Holland, 1980
6. "Logical Memory" subtest of Wechsler Memory Scale-Revised, Wechsler, 1987
7. Ross Information Processing Assessment (RIPA-2). Ross-Swain, 1996
8. Scales of Cognitive Ability for Traumatic Brain Injury, Adamovich & Henderson, 1991

Dementia

1. Arizona Battery for Communicative Disorders of Dementia (ABCD), Bayles & Tomoeda, 1993
2. Communicative Activities in Daily Living (CADL-2), Holland, Fratalli & Fromm, 1999
3. Clinical Dementia Rating Scale (CDR), Hughes, 1982
4. Dementia Rating Scale (DRS), Mattis, 1988
5. Rating Scale of Communication in Cognitive Decline, Bollinger & Hardiman, 1990
6. Ross Information Processing Assessment-Geriatric (RIPA-G), Ross-Swain & Fogle, 1996
7. Weschler Memory Scale-Revised, Wechsler, 1987

Assessment of Speech Sound Production

Apraxia

1. Apraxia Battery for Adults (ABA-2), Dabul, 2000
2. Comprehensive Apraxia Test, DiSimoni, 1989
3. Screening Test for Developmental Apraxia of Speech , Blakeley, 1980
4. Aphasia and TBI Tests often include speech sound assessment subtests

Dysarthria

1. Assessment of Intelligibility of Dysarthric Speech, Yorkston, Beukelman, & Traynor, 1984
2. Frenchay Dysarthria Assessment, Enderby, 1983

Goal of Speech Language Evaluation

These evaluations determine the adult's level of function and competencies through therapeutic observation and standardized testing measures appropriate to speech and language limitation and specific to the therapeutic services required.

Comprehensive spoken language assessment is conducted to identify and describe:

- differential diagnosis based on clinical findings.
- changes from premorbid abilities, the extent to which the disorder has impacted daily
- life, and current level of functioning.
- underlying strengths and weaknesses related to speech, language, and cognitive factors that affect communication performance.
- Concurrent conditions with complexities and their impact on prognosis
- if no meaningful verbal communication is seen, the prognosis for a nonverbal means of communicating simple wants and needs.
- is treatment necessary and degree of potential for functional gains.

Comprehensive speech-language may result in the following:

- Diagnosis of a speech, language, cognitive-communication delay or disorder.
- Clinical description of the characteristics of speech, language, cognitive-communication delay or. disorder
- Identification of a communication difference, possibly co-occurring with a speech, language, and cognitive-communication disorder or delay.
- Prognosis for change (in the individual or relevant contexts).
- Recommendations for intervention and support.
- Identification of the effectiveness of intervention and supports.
- Referral for other assessments or services.

Clinical Process

Assessment may be static (i.e., using procedures designed to describe current levels of functioning within relevant domains) and/or dynamic (i.e., using hypothesis testing procedures to identify potentially successful intervention and support procedures) and includes the following:

- Relevant case history, including past and current medical status, cause and onset of disorder, past treatment for a speech and language impairment and linguistic backgrounds.
- Review of auditory, visual, motor, and cognitive status.
- Patient/client and family/caregiver interview.
- Standardized and/or nonstandardized measures of specific aspects of speech, spoken and nonspoken language, and cognitive-communication.
- Analysis of associated medical, behavioral, environmental, educational, social factors and cultural factors.
- Identification of potential for effective intervention strategies and compensations;
- Selection of standardized measures for speech, language, and/or cognitive-communication with consideration for documented ecological validity.
- Follow-up services to monitor communication status and ensure appropriate intervention and support for individuals with identified speech, language and cognitive-communication disorders.

Scope of Spoken Language Evaluation

Assessment typically includes the following:

- **Relevant case history, including**
 - o Past and current medical history;
 - o cause and onset of disorder,
 - o past treatment for a speech and language impairment
 - o family's/caregiver's concerns about the adult's language (and speech),
 - o languages and/or dialects used in the home
- **Hearing screening**, if audiologic evaluation dated within six months following the event is not available;
- **Oral mechanism examination;**
 - o muscle development of the jaw, lips and tongue and the integrity of the oral structures (hard and soft palate, jaw, maxilla, lips and tongue).
 - o purposeful movement through imitation of non-speech actions.
 - o Diadokokinetic rate: muscle movement for coordination and sequencing a repetitive string of sounds rapidly (i.e., puh, tuh, kuh or buttercup).
- **Respiratory examination;**
 - o duration and control of inhalation and exhalation,
 - o coordination of expiration with speaking.
- **Subjective judgment of function for voice and fluency**
 - o voice pitch, quality, resonance and volume,
 - o fluency of speech production.

- **Subjective judgment of function for voice and fluency**
 - o Voice pitch, quality, resonance and volume,
 - o Fluency of speech production.
- **Administer spoken language testing using standardized tests and/or professionally acceptable therapeutic observational techniques utilizing a formalized checklist or observational tools.**
 - o phonology at word level through conversation, including identification of apraxia or dysarthria and phonological awareness,
 - o receptive language skills, including
 - comprehension of spoken language from single words through to conversational level
 - if minimal to no comprehension of spoken language, understanding symbols, signs and gestures
 - cognition, including attention, memory, organization and executive functioning
 - understanding pragmatics of communicative partners
 - reading from recognition of individual letters through to comprehension of paragraphs.
 - o expressive language skills, including
 - use of spoken language from single words through to conversational level
 - word retrieval skills
 - nonverbal communication abilities
 - pragmatics of language
 - spoken discourse skills (conversation, narrative, expository).
 - use of written language from letter formation through to paragraph formation.

Outcomes

- **Analysis of Results**
 - o Interpret the clinical findings of the spoken language evaluation. If the performance measure falls more than 1 standard deviation below the mean language skills are impaired.
 - o Determine the needs and abilities of the client/patient, family/caregiver concerns and the potential for functional improvement within a reasonable time frame,
 - o Determine an appropriate plan of care based upon the adult's medical history, cultural and linguistic differences, analysis of test results and functional impact on activities of daily living,
- **Plan of Care development**
 - o Develop an individual program designed to address the adult's immediate communication needs so they may participate in a variety of communication situations within home or current place of residence and community. Utilize the communication strengths of the adult and the expectations of the adult and family/caregiver when developing this program.
 - State the types of therapy to be provided (articulation, receptive language, expressive language, cognition, pragmatics, etc)

- Develop objective, achievable and measureable long and short term goals targeting impaired skills identified through analysis of test results.
- Provide a baseline measure for each short term goal presented.
- emphasize practice and repetition to ensure re-acquisition of sounds, syllables and words which can be enhanced with tactile, kinesthetic, auditory and visual prompts.
- o Develop a home program to facilitate carry-over of skills learned in treatment to all environments in the adult's world
- o Provide family members/ caregivers and training in communication techniques and strategies to facilitate effective communication.
- o Provide family/caregiver with information regarding community support groups and/or programs.
- o Continue to dynamically assess the adult each session because symptoms will change over time.
- o Select and implement appropriate Augmentative or Alternative Communication system for those adults with significant speech and/or language difficulties.
- o Referrals, including
 - Physician or neurologist for medical concerns
 - Social worker for patient or family concerns
 - Audiology for suspected hearing loss
 - Specialist for providing hi-tech AAC, if recommended
 - Occupational therapy for limb

Documentation

The initial assessment establishes the baseline data necessary for evaluating expected habilitation or rehabilitation potential, setting realistic goals, and measuring communication status at periodic intervals. It should include objective or subjective baseline diagnostic testing (standardized or non-standardized), interpretation of test results, and clinical findings. If baseline testing cannot be accomplished for any reason, this should be noted in the initial assessment or progress notes, along with the reason(s). Reassessments are appropriate when the patient exhibits a change in functional speech and language communication skills.

Documentation includes pertinent background information, assessment results and interpretation, prognosis, and recommendations, and indicates the need for further assessment, follow-up, or referral. When intervention services are recommended, information is provided concerning estimated duration, and type of service (e.g., individual, group, home program).

Documentation addresses the type and severity of the communication impairment, or risks of impaired communication development, and associated conditions (e.g., medical diagnoses).

Documentation includes summaries of previous services in accordance with all relevant legal and agency guidelines.

Speech-language pathologists prepare, sign, and maintain documentation that describes the professional service. Pertinent background information, results and interpretation, prognosis, and recommendations should be included. Recommendations may include the need for further assessment, follow-up, or referral. When intervention is recommended estimated duration and type of service (e.g., individual, group) must be specified. Documentation should include:

- findings of the speech-language evaluation
- objective and subjective measurements of functioning
- short-term and long-term measurable goals, with expectations for progress
- reasonable estimate of the time needed to reach the goals.

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Aphasia

Related Terms

- Dysphasia—
- Fluent or nonfluent aphasia
- Global aphasia
- Expressive/receptive language disorder
- Broca's or Wernicke's aphasia
- Primary progressive aphasia

Aphasia is an umbrella term encompassing many components.

Definition

- Aphasia is a language disorder that affects a person's ability to communicate. It impairs the expression and understanding of spoken language as well as reading and writing. This can include impairment or inability to name / recall words and use numbers.
- Aphasia is "characterized by deficiencies in comprehension (understanding) and/or production (use) of spoken and written language. The impairment may involve the form of language (phonology, morphology, syntax), the content of language (semantics), or the function of language in communication (pragmatics)."⁹

Presentation

- "Aphasia is caused by damage to one or more of the language areas of the brain" CVA is the major cause. Other causes are "severe blows to the head, brain tumors, brain infections, and other conditions that affect the brain."¹⁰
- Aphasia may occur and be masked by speech disorders commonly as apraxia and/or dysarthria.
- Aphasia presents on a range of severity: deficits may affect one, many, or all areas of language and related functioning.
- Dysphagia with aphasia can be present especially with accompanying muscle weakness.
- "Although aphasia is a language disorder, examination of all domains of cognition [as in cognitive-communication disorders] is important for successful rehabilitation of the person with aphasia."¹³

Differential Diagnosis Considerations

- "If one condition is so severe as to mask the other, it may be necessary to wait until treatment of the more obvious disorder reveals the hidden disorder."¹⁴
- "It is now well-documented that many people with aphasia have coexisting problems with attention and executive functioning."¹²

- Pure aphasia does not include speech or voice disorders, however, because of the language component; verbal communication may be limited to jargon, yes/no or head nods, perseveration, or other short or empty speech.

Specific Treatment Issues

- “It is difficult to think of any aspect of language usage that does not interact with attention, memory, executive functions, and even (in the case of written language) visuo-spatial skills.”¹¹
- When no meaningful verbal communication is seen, the development of a means for communicating simple wants and needs should be instituted.
- The use of AAC (augmentative or alternative communication) devices can be simple or complex. It is important to thoroughly know the strengths and limitations of the individual before developing these.¹⁵

Symptomatology

Symptoms will range both in number, intensity, and level of severity and ultimately to their functional effect on an individual's communication.

Clinical Symptoms	Functional Effects
Impaired auditory comprehension skills with adequate hearing	Ranges from inability to mild deficits in: ▪ Understanding what is heard ▪ Following directions ▪ Repeating information ▪ Understanding verbal communications of all types in all situations
Impaired verbal expressions skills	Ranges from inability to mild deficits in: ▪ Expressing basic automatic speech or social greetings ▪ Generating a word, phrase, or sentence to express basic needs ▪ Formulating questions, thoughts, responses, and other types of verbal communication ▪ Producing cohesive language in all situations up to previous ability
Impairment in reading - both in ability and comprehension	Ranges from inability to mild deficits in: ▪ Tracking, recognizing or attaching meaning to written / printed letters ▪ Attaching meaning to written words ▪ Reading and understanding sentences, instructions, and questions from increasingly longer, more complex materials ▪ Reading and comprehending material of all types and length to previous ability
Impairment in writing - both in spelling and producing complete sentences	Ranges from inability to mild deficits in: ▪ Copying or tracing letters, numbers ▪ Spelling single words up to and including previous spelling ability ▪ Producing meaningful phrases and sentences, questions and written material up to previous ability

Word-finding; word retrieval; dysnomia	Ranges from inability to mild deficits in: ▪ Naming simple nouns, words, names ▪ Finding the right words of any type (verb, pronoun, adverb, etc) to express one's thoughts ▪ Facility and availability of words – as in synonyms, related words; having a working vocabulary to use as a basis for spoken and written communication
Impaired ability to use numbers, calculations, math in everyday life	Ranges from inability to mild deficits in: ▪ Counting and/or performing simple calculations ▪ Attaching meaning to number amounts, using money ▪ Ability to do everyday math and functional problems up to previous ability

SLP Management^{5,9}

Goal of the evaluation

- Establish a differential diagnosis based on clinical findings.
- Document changes from premorbid abilities, the extent to which the disorder has impacted daily life, and current level of functioning.
- Determine if treatment is necessary and potential for functional gains.

Evaluation should address:

- Relevant past medical history with cause and onset of disorder
- Past treatment, if any, for aphasia
- Diagnosis of current condition including impact on daily life
- Description of disorder(s) including extent and severity as determined from objective measures
- Concurrent conditions with complexities and their impact on prognosis
- Recommendations if treatment is warranted or not and why

Plan of Care if treatment is warranted

- Long-term goals and estimated time frame for attaining them
- Frequency and intensity of treatment; justification for intensive or long-term treatment
- Prognosis for improvements and why
- Referrals to other professionals and services as appropriate

Treatment Interventions: Clinical Process

- Statement of short-term functional measurable goals within each interval
- As appropriate in each case, home assignments between sessions
- As appropriate in each case, education and training to caregivers
- As appropriate in each case, counseling, dialogue, and support with patient / caregivers to assist understanding
- Continual assessing, monitoring, modeling, evaluating responses, providing meaningful feedback, and adjusting treatment and updating plans as needed

- As appropriate in each case, teach strategies, compensations, self-cueing techniques etc. and provide guidance and suggestions
- Ongoing preparation to patient and caregivers for discharge through education, training, and resources for "next steps"

Documentation

- Notes for each encounter to include type of treatment and patient's response to it
- Show measurable progress toward goals or reasons not attained such as: fluctuations in abilities and/or alertness, motivation, caregiver or home programming issues
- Show evidence that education was provided and response to it
- Include attainment, updates, or changes in short or long-term goals and/or changes in intensity or type of treatment

Discharge Criteria

- Patient is at functional levels in all aspects of disorder
- No progress is noted after 2-4 typical sessions
- All goals are reached; no further intervention indicated
- Patient is able to continue with a home management program
- Patient's response /nonresponse to treatment justifies discharge
- Medical reasons dictate break from or termination of sessions

Possible Referrals to:

- Physician or neurologist for medical concerns e.g. suspicion of other neurological disease or dysphagia
- Social worker for patient or family concerns
- Audiology for suspected hearing loss
- Specialist for providing hi-tech AAC if recommended
- Physical or occupational therapy for evaluation
- AAC specialist if needed
- Vision specialist for checking vision or field cuts

Outcomes/Treatment Efficacy

- "Both clinical evidence and research agree that individuals with aphasia benefit from the services of speech-language pathologists."⁴
- "And, there is probably more empirical evidence to support providing treatment to aphasic people than there is for any other communication disorder."¹⁰

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

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Apraxia of Speech (AOS)

Related Terms

- Apraxia, dyspraxia
- Conduction aphasia
- Ideomotor apraxia
- Broca's aphasia
- Oral or verbal apraxia
- Phonemic paraphasia

Definition

- Apraxia of speech (AOS) is "a neurogenic phonologic disorder resulting from sensorimotor impairment of the capacity to select, program, and/or execute in coordinated and normally timed sequences, the positioning of the speech musculature for the **volitional** [SIC] production of speech sounds."⁶
- "...it [AOS] is not attributable to deficits of muscle tone or reflexes, nor to deficits in the processing of auditory, tactile, kinesthetic, proprioceptive, or language information."⁶
- The severity of AOS varies greatly from sound distortions and hesitant, groping speech to the total inability to produce any sound on a volitional basis.⁴

Presentation

- A common cause of acquired apraxia is CVA. Other causes include traumatic brain injury, dementia, tumors, and progressive neurological disorders"¹
- Apraxia of Speech rarely occurs in isolation. It is often concurrent with aphasia and/or dysarthria and/or cognitive-communication disorders.
- "When additional motor [as dysarthria], language [as aphasia], or cognitive deficits accompany the apraxia, these symptoms may be masked by these other problems and will not necessarily be as evident as these descriptions might suggest."⁸ Conversely, if these other deficits are severe, they may be masking an underlying apraxia.
- Nonverbal oral apraxia and limb apraxia frequently occur with AOS.
- "These [AOS] symptoms may be accompanied by behaviors such as articulatory groping, difficulty initiating speech, increasing number of sound errors with increasing word length, and motoric perseveration. Its severity ranges from a complete inability to speak to minimal disruptions in speech production."⁹

Differential Diagnosis Considerations

- Unlike dysarthria, there is an absence of muscle weakness.
- An individual may be mute but have normal musculature and automatic responses but no volitional control.
- Oral and/or limb apraxia are often present.
- Unlike dysarthria, errors appear random and are not consistent.

- AOS rarely occurs alone - usually with aphasia, dysarthria, and/or cognitive deficits.
- Unlike aphasia and cognitive disorders, AOS is a pure disorder of the ability to produce sounds and speech.
- The presence of AOS often masks other disorders or other disorders are masked by AOS.

Specific Treatment Issues

- Evaluation and treatment of concurrent disorders and an understanding of their impact on each other are important aspects of treating AOS.
- If AOS is severe, during the course of treatment, determine if low or high tech augmentative or alternative aids must be developed, obtained and trained.
- "The first principle of motor training for speech sound remediation in AOS is that intensive treatment is required...The second principle...is that a large number of repetitions of speech or non-speech movements are needed...Perhaps the most important aspect of motor learning has to do with the feedback provided during treatment sessions."⁶

Symptomatology^{6, 7, 9}

AOS can be mild or very severe. Consequently the symptoms will also range both in number of symptoms exhibited by an individual to their level of severity and to their functional effect on the individual's speech.

Clinical Symptoms	Functional Effects
▪ Poor oral posturing, inability to make, imitate or repeat sounds volitionally ▪ Articulatory groping and errors ▪ Automatic speech or singing better than purposeful utterances and oral reading ▪ Dysprosody: abnormal rhythm, stress, timing, intonation, voicing ▪ Slow/halting/uncontrolled rate of speech ▪ Obvious difficulty initiating utterances ▪ Speech worsens under pressure or stress ▪ Poor imitation, repetition ▪ Articulatory inconsistency on repeated productions of the same utterance ▪ Sequencing, phonemic errors; distortions ▪ Errors increase with length and complexity ▪ Inconsistent, random errors ▪ Sound or word perseveration ▪ Sound/syllable reversals ▪ Inability/difficulty with self-correction	In severe cases, initially no speech is possible. Symptoms affect functional speech on a continuum of intelligibility - from none to mild articulation errors, hesitations, rate, and other symptoms. Because AOS rarely occurs alone, other means of communicating as using meaningful gestures, writing, typing, pointing, drawing, or indicating yes/no may also be impaired and not reliable. Because of its inconsistency, speech may be functional in a controlled situation, but deteriorate greatly in other environments.

SLP Management^{2, 3}

Goal of the evaluation

- Establish a differential diagnosis based on clinical findings.
- Document changes from premorbid abilities, the extent to which the disorder has impacted daily life, and current level of functioning.
- Determine if treatment is necessary and potential for functional gains.

Evaluation should address:

- Relevant past medical history with cause and onset of disorder
- Past treatment, if any, for AOS
- Diagnosis of current condition including impact on daily life
- Description of disorder(s) including extent and severity as determined from objective measures
- Concurrent conditions with complexities and their impact on prognosis
- Recommendations if treatment is warranted or not and why

Plan of Care if treatment is warranted

- Long-term goals and estimated time frame for attaining them
- Frequency and intensity of treatment; justification for intensive or long-term treatment
- Prognosis for improvements and why
- Referrals to other professionals and services as appropriate

Treatment Interventions: Clinical Process

- Statement of short-term functional measurable goals within each interval
- As appropriate in each case, home assignments between sessions
- As appropriate in each case, education and training to caregivers
- As appropriate in each case, counseling, dialogue, and support with patient / caregivers to assist understanding
- Continual assessing, monitoring, modeling, evaluating responses, providing meaningful feedback, and adjusting treatment and updating plans as needed
- As appropriate in each case, teach strategies, compensations, self-cueing techniques etc. and provide guidance and suggestions
- Ongoing preparation to patient and caregivers for discharge through education, training, and resources for "next steps"

Documentation

- Notes for each encounter to include type of treatment and patient's response to it
- Show measurable progress toward goals or reasons not attained such as: fluctuations in abilities and/or alertness, motivation, caregiver or home programming issues
- Show evidence that education was provided and response to it
- Include attainment, updates, or changes in short or long-term goals and/or changes in intensity or type of treatment

Discharge Criteria

- Patient is at functional levels in all aspects of disorder
- No progress is noted after 2-4 typical sessions
- Patient is able to continue with a home management program
- All goals are reached; no further intervention indicated
- Patient's response /nonresponse to treatment justifies discharge
- Medical reasons dictate break from or termination of sessions

Possible Referrals to:

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiology for suspected hearing loss
- Specialist for providing hi-tech AAC if recommended
- Occupational therapy for limb apraxia

Outcomes/Treatment Efficacy

- "AOS [Apraxia of Speech] may be expected to make improvements in speech production as a result of treatment, even when AOS is chronic."¹⁰
- "Intervention is expected to result in reduced deficits and contextual barriers, improved abilities and contextual facilitators, and measurably enhanced functioning and participation."¹

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

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Apraxia (Pediatrics)

Synonyms

- Apraxia of speech,
- Articulatory dyspraxia,
- Childhood apraxia of speech,
- Childhood verbal apraxia,
- Developmental apraxia of speech,
- Developmental verbal apraxia,
- Developmental dyspraxia,
- Developmental verbal dyspraxia,
- Motor planning difficulties.

Definition

Childhood apraxia of speech is a nervous system disorder, which impacts an individual's ability to voluntarily plan, select, execute or sequence the motor patterns necessary to produce sounds, syllables or words.

History

Goals of Complaint History

Identify co-morbidities that affect general management or which require medical management such as Down's syndrome, children with or without cognitive disabilities.

Presentation

Symptomatology

Symptoms will range both in number, intensity, and level of severity and ultimately to their functional effect on an individual's communication.

Clinical Symptoms	Functional Effects
Infants and Children ▪ Absence of coo or babble. ▪ Limited repertoire of consonant sounds. ▪ Omits sounds. ▪ Deviation of vowels sounds. ▪ Difficulty combining the various sounds they do have. ▪ Replaces difficult to produce sounds with easier to produce sounds. ▪ Feeding problems may exist. ▪ Inconsistent sound and speech production.	▪ Child will not follow the typical development or acquisition of speech sounds. ▪ Child appears to be inconsistent, resistant or stubborn. ▪ Child has difficulty expressing needs, wants, thoughts, and ideas. Frustration on the part of the child and the parent may manifest. ▪ Listeners have difficulty understanding the message. ▪ The pressure of having to produce a grammatically complex sentence using sounds which are

	difficult to produce and complex vocabulary.
▪ Selective repertoire of phonemes. ▪ Use of gestures. ▪ Ability to produce the word or sentence one time then “loses” it. ▪ Difficulty imitating sounds, words, phrases and sentences. ▪ Limited repetition/generalization of words, sounds, syllables upon request (i.e., difficulty with imitation of sounds or repetition of words upon request). ▪ Automatic words or phrases, such as “Hi”, “How are you?” are easier to consistently produce than spontaneous speech. ▪ Delays or difficulties with syllable and word structure. ▪ Difficulty putting words into a sequence to form a grammatically correct sentence. ▪ Shorter phrases are easier to produce and more intelligible than longer sentences-as the complexity of the utterance increases the more difficult it becomes to produce a cohesive sentence.	▪ Struggling or groping when speaking or attempting to speak due to difficulty coordinating lips, tongue, and jaw for purposeful movements. ▪ Speech production becomes more unintelligible in stressful situations and during periods of anxiousness.
▪ Reversal of sounds or syllables (i.e., aluminum becomes alunimum).	Metathesis.
▪ Syntax errors and omissions. ▪ Morphology errors and omissions. ▪ Mean Length of Utterance (MLU) is low relative to the individual’s chronological or mental age. ▪ Word sequencing errors. ▪ Word-finding difficulties.	▪ Expressive language skills are delayed. ▪ Receptive language skills are greater than expressive language skills.
▪ Difficulty reading a word. Able to produce each sound in the word but unable to blend the sounds together to make a word. ▪ Difficulties with phonemic awareness.	▪ Reading deficits.
▪ Speech production will be relatively intelligible but the intonation patterns or stress errors may cause the utterance to sound unusual. ▪ The rate of speech may be too slow, too rapid, or uneven. ▪ Inappropriate loudness patterns. ▪ Inappropriate pitch patterns. ▪ Inconsistent hypernasality or hyponasality.	▪ Prosody and rhythm differences.

Findings

Goal of Apraxia Evaluation:

- Rule out other possible causes
 - Hearing loss
 - Muscle weakness or paralysis of oral musculature or speech mechanism
- Identify strengths, weaknesses, and any contributing factors that may be affecting functional communication.

Scope of Apraxia Evaluation:

- Obtain medical history from the individual's medical records, interview the individual if age-appropriate, and interview the individual's family member, caregiver or guardian.
- Obtain the individual's developmental, feeding and eating abilities, management of secretions and speech and language history.
- Identify any cultural or linguistic differences and any behavioral factors that may be contributing to the breakdown in functional communication.
- Assessment of the oral mechanism
 - Muscle development of the jaw, lips, and tongue and the integrity of the oral structures [hard and soft palate, jaw, lips and tongue].
 - Purposeful movement with imitation of non-speech actions.
 - Diadokokinetic rate: muscle movement for coordinating and sequencing a repetitive string of sounds rapidly (i.e., puh, tuh, kuh or buttercup).
- Assess the coordination of breathing with speaking.
- Assess articulation at the word to conversation level.
- Assess phonology for the presence of phonological processes.
- Obtain and interpret a language sample if the child has sufficient verbal output.
- Assess prosody and stress patterns.
- Assess receptive and expressive language abilities.
 - Use and understanding of vocabulary.
 - Understand and answer simple to increasingly complex yes/no and wh-questions.
 - Follow simple to multi-unit directives.
 - Comprehension of verbal passages from the sentence to paragraph level increasing in complexity.
 - Age-appropriate use of grammatical construction in sentences.
 - Use of word forms.
 - Social communication skills.

The evaluation process may include the selection and administration of standardized tests, portions of standardized tests, non-standardized tests, and language samples.

Results if Apraxia

- Determine an appropriate plan of care based upon the individual's medical history
- Interpret the clinical findings of the apraxia evaluation that will include:

- a clinical diagnosis of apraxia of speech based upon a combination of characteristics identified during the assessment process,
- standardized assessment scores that are within two standard deviations below the mean will be considered within normal limits,
- standardized assessment scores that are more than two standardized deviations below the mean will be considered delayed.
- Determine the needs and abilities of the individual, parental concerns and the potential for functional improvement within a reasonable time frame.

Speech Language Management

(The following management will vary depending on the specific needs of the individual)

- Develop an individual program designed to address motor learning, which is needed for speech movement or speech production with graded complexity.
- Develop an individual program designed to address the individual's immediate communication needs so that the individual may participate in a variety of communication situations within his/her home, school and/or community.
- Develop a treatment plan that emphasizes practice and repetition to ensure acquisition of new sounds, syllables and words which can be enhanced with tactile, kinesthetic, auditory and visual prompts.
- Develop a home program to facilitate speech motor planning skills.
- Provide family members, caregivers, guardian, siblings, school teachers and/or other communication partners training in communication techniques and strategies to facilitate effective communication with individual including recognition and acknowledgement of the individual's communication attempts and identify and respond appropriately to the child's communicative attempts.
- Provide parents with information regarding community support groups and/or programs.
- Continue to assess the individual because symptoms will change over time.
- Select and implement appropriate Augmentative or Alternative Communication system for those individuals with significant difficulties.

Referral Guidelines Apraxia

If improvement does not meet the above guidelines or improvement has reached a plateau:

- Refer patients to the referring physician or specialist to explore other alternatives.
- Consults with a specialist in the field of augmentative and assistive communication systems.
- Consult with an audiologist if a hearing loss is suspected.
- Referral to local support groups

Home Medical Equipment

- Augmentative and assistive communication device.

Self-Management Techniques

- Individual and parents to follow home exercise program.

Alternatives to ST Management

- Use of alternative and assistive communication device.

Treatment Plan Timeline

Frequency and duration of services is based upon the specific needs of the individual at the time of the evaluation. Children with apraxia of speech tend to have periods where they plateau then will go on to make functional improvements. In addition, the symptoms will change over time. Therefore, discharge planning will involve consideration of maximum potential achieved and the individual family circumstances.

Early stages of treatment	▪ Explore factors that could impact outcomes now and in the future. ▪ Explore strengths and weaknesses; breakdowns in production, stimulability, self-monitoring, and other components for best treatment outcomes ▪ Explore patient and family understanding, challenges, and capabilities to develop education and training program ▪ Develop treatment program based on findings and best practices for this patient ▪ Develop an individualized supplemental home program to monitor and change as needed ▪ Document findings, techniques and responses to treatment
Ongoing treatment	▪ Provide patient/family ongoing education and training ▪ Assess response to and feedback from home program to modify, and update ▪ Document measurable gains and modify plan of care if indicated ▪ Assess ongoing response to treatment, gains, lack of progress, other factors; modify program as needed ▪ Assess if intelligible verbalization or supplemental and/or alternative means of communication will be probable; develop these or refer as needed ▪ Determine other factors impacting condition requiring intervention or referral (see referral guidelines)
Later stage of treatment / discharge planning	▪ Provide suggestions and resources for follow-up ▪ Provide home program to maintain gains ▪ Provide summary of course of treatment and progress ▪ If discharged due to medical issues and/or plateau in progress indicate under what future conditions new referral would be warranted
Discharge criteria	▪ Medical/psychological or other issues interfering with goals of treatment program ▪ Goals have been reached ▪ Plateau has been reached ▪ Insurance benefit has ended

Medicare References:

1. Centers for Medicare & Medicaid Services (CMS), Medicare Benefit Policy Manual-Pub. 100-2: Chapter 15, Section 220, Covered Medical and Other Health Services, Conditions of Coverage and Payment Outpatient Physical Therapy, Occupational Therapy, or Speech-Language Pathology Services.
<http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/bp102c15.pdf>
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Aural Rehabilitation

Synonyms (Aural Rehabilitation)

Auditory habilitation

Synonyms (Hearing Loss)

- Conductive hearing loss
- Sensorineural hearing loss
- Mixed conductive and sensorineural hearing loss
- Deaf mutism

Definition

“Aural Rehabilitation refers to services and procedures for facilitating adequate receptive and expressive communication in individuals with a hearing impairment. These services and procedures are intended for those persons who demonstrate a loss of hearing sensitivity or function in communication situations as if they possess a loss of hearing sensitivity”

Hearing loss is a congenital or acquired condition in which an individual is unable to process or interpret sound (i.e., spoken language) and interferes with his or her ability to communicate efficiently. Hearing loss can be partial or complete. The measurement of a hearing loss is the difference from an individual's normal ability to detect sound compared to established standards.

History

Goals of Complaint History

- Identify co-morbidities that affect general management or which require medical management.
- Determine if trauma-related or congenital; determine nature and extent of event.
- Determine primary medical condition for insurance coverage purposes
 - A significant hearing loss, lasting greater than 4 months in a child less than 5 years of age accompanied by speech/language deficits; or
 - New-onset of significant hearing impairment caused by trauma, tumor or disease (other than otitis media with effusion) in post-lingual individuals aged 5 years or older; or
 - Evaluation prior to and therapy following medically necessary implantation of a cochlear or auditory brainstem device.

Presentation

Symptomatology

Symptoms will range both in number, intensity, and level of severity and ultimately to their functional effect on an individual's communication.

Infants and children

Clinical Symptoms	Functional Effects
- Failure of hearing screening test - Delays in normal development of speech perception and speech production, developmental communication, language, literacy skills and cognitive, social-emotional and academic milestones - Cranio-facial abnormalities	- Familial history of hearing loss - Trauma related incident - Congenital or acquired - Birth defect – malformation of anatomical structures during gestation - Low birth-weight - Exposure to ototoxic medications

Adults

Clinical Symptoms	Functional Effects
- Difficulty understanding conversation in a variety of settings. - Employment performance may be negatively affected. - Personal relationships may be negatively affected. - Interaction with people in the community and health care workers may be negatively affected.	- Congenital or hereditary factors, disease or trauma - Age - Ototoxicity - Depression or anxiety

Findings

Goal of Aural Rehabilitation Evaluation

- Determine the extent of the hearing loss and other factors impacting functional communication depending on nature of cause (congenital vs. acquired).
- Identify communication strengths, weaknesses, and any contributing factors that may be affecting functional communication.

Scope of Aural Rehabilitation Evaluation

The scope of the aural rehabilitation evaluation may vary depending on child versus adult.

- Obtain medical history from the individual's medical records; interview the individual, family member or caregiver.
- Consult with the audiologist who performed the evaluation of the hearing mechanism to determine the quantifying degree of auditory dysfunction.
- Obtain prior level of function in terms of communication and cognitive skills, level of independence, use of hearing aides or cochlear implant.
- Identify and evaluate sensory capabilities as they relate to receptive and expressive communication skills.
- Identify any cultural or linguistic differences and any behavioral factors that may affect speech production, or receptive and expressive communication skills.
- Assess speech and voice production, auditory comprehension, expressive communication skills, or alternative communication skills such as auditory, visual

or a combination of auditory-visual communication skills, lip-reading, listening skills and aural habilitation/rehabilitation.

The evaluation process may include the selection and administration of standardized tests, portions of standardized tests, non-standardized tests and/or static and dynamic procedures.

Results if Aural Rehabilitation is indicated due to hear loss

- Plan, develop and implement a rehabilitation program based upon the individual's medical history, results of the audiological evaluation and prior level of function,
- Implement audition or a combination of audition and visual cues to address the individual's specific needs,
- Identify the severity of the receptive and expressive language deficits, speech production and/or voice disorder related to the hearing loss; and
- Determine the potential for functional improvement within a reasonable time frame.

ST Management

The following management will vary depending on the specific needs of the individual.

- Develop an individual program designed to treat the specific areas of weakness with focus on improving functional communication so that the individual may participate in a variety of communication situations within his/her community or employment.
- Provide family members, caregivers, employers, co-workers, school teachers, and other communication partners training in communication techniques and strategies to facilitate effective communication with the hearing impaired individual.
- Select and implement appropriate Augmentative or Alternative Communication systems if indicated.
- Consultation with audiologist regarding hearing devices (i.e., hearing aids, assistive listening device, or cochlear implant)
- Provide home exercise program to address difficulties with receptive and expressive language delays, speech production, voice, lip-reading, sign language, and listening skills.
- Provide a method of follow-up services for individuals who have been discharged.

Treatment Plan Timeline

The frequency and duration of services is based upon the specific needs of the individual at the time of the evaluation. Discharge is recommended when the individual has reached a plateau (i.e.: no measurable gains made over a period of at least three week) or maximum potential has been achieved.

Week	# of Visits	Progress
0-1	1-3	- Initiate a plan of care specific to the individual's communication deficits/delays with culturally and linguistically appropriate materials. - Teach functional skills using a variety of stimuli. - Teach compensatory strategies. - Develop a home program to facilitate carryover of skills learned in speech therapy - Provide education and training to the individual for follow-through of home program to facilitate carryover of skills learned in speech therapy. - Provide education and training to family members and/or caregivers to effectively communicate with the individual. - Develop a behavior modification program to address any behavioral issues. - Document response to treatment in measurable terms. - Determine the need to modify the plan of care in terms of frequency, duration, and treatment plan based upon the patient's response to treatment. - Determine the need to modify the dismissal criteria
2-4	1-3	- Continue with plan of care. - Follow-up on the progress or lack of progress with the home program and make revisions as needed. - Continue ongoing education and training for follow-through of home program to facilitate carryover of skills learned in speech therapy. - Document response to treatment in measurable terms. - Determine the need to modify the plan of care in terms of frequency, duration, and treatment plan based upon the patient's response to treatment. - Determine the need to modify the dismissal criteria
5-8	1-3	- Continue with plan of care - Follow-up on the progress or lack of progress with the home program and make revisions as needed. - Continue ongoing education and training for follow-through of home program to facilitate carryover of skills learned in speech therapy. - Document response to treatment in measurable terms. - Determine the need to modify the plan of care in terms of frequency, duration, and treatment plan based upon the patient's response to treatment. - Determine the need to modify the dismissal criteria
9-12	1-3	- Follow-up on progress or lack of progress with the home program and make revisions as needed. - Continue education and training for follow-through of home program to facilitate carryover of skills learned in speech therapy. - Document response to treatment in measurable terms. - Determine the need to modify the plan of care in terms of frequency, duration, and treatment plan based upon the

		patient's response to treatment. ▪ Determine the need to modify the dismissal criteria
13-16	1-3	▪ Continue with plan of care. ▪ Follow-up on progress or lack of progress with the home program and make revisions as needed. ▪ Continue education and training for follow-through of home program to facilitate carryover of skills learned in speech therapy. ▪ To determine discharge criteria or transition to an alternative treatment: ▪ Review the plan benefit language for specific benefit limits or restrictions; ▪ End or transition when maximum potential has been reached; or ▪ When little or no progress has occurred for at least three weeks. ▪ Provide a method of follow-up services for individuals who have been discharged.

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

Referral Guidelines

If improvement does not meet the above guidelines or improvement has reached a plateau:

- Refer patients to the referring physician or specialist to explore other alternatives.
- Refer individual or the individual's family to an audiologist to monitor and evaluate changes in hearing acuity, modifications to hearing aids, other assistive listening devices, or cochlear implant.
- Refer individual or the individual's family to professionals experienced with guidance and counseling for hearing impaired individuals.

- Refer individual or the individual's family to community based services for vocational counseling or organizations dealing with the hearing impaired population.

Home Medical Equipment

- Hearing aids
- FM system
- Other assistive listening devices

Self-Management Techniques

- Home exercise program to be completed by individual with the assistance of a parent, family member, caregiver, or guardian if indicated.
- Proficiency in utilization/management of alternative or assistive communication device, hearing aid, FM system or cochlear implant.
- Instruct patient to notify primary care physician, audiologist and/or speech-language pathologist should any changes occur in his/her hearing acuity that negatively affects the patient's ability to understand conversations in a variety of communication settings.

Alternatives to ST Management

- Aural rehabilitation provided by audiologist, teacher of the hearing impaired, psychologist.
- Augmentative or assistive communication device
- Sign language
- Auditory Rehabilitation / Auditory – Verbal Therapy
- Guidance and counseling for the individual and the individual's communication partners regarding the communication difficulties related to education, employment, family and social relationships.

Medicare References:

1. Centers for Medicare & Medicaid Services (CMS), CMS Manual System-Pub 100-02 Medicare Benefit Policy, Transmittal 179, Manual Updates to Clarify Skilled Nursing Facility (SNF), Inpatient Rehabilitation Facility (IRF), Home Health (HH), and Outpatient (OPT) Coverage Pursuant to Jimmo vs. Sebelius.
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13. <http://www.asha.org/NR/rdonlyres/4bAF3969-9ADC-4C01-BSED-1334CC20DD3D/0TreatmentEfficacySummary.pdf>. American Speech-Language-Hearing Association Treatment Efficacy Summary Hearing Loss and Hearing Aids in Adults.
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15. <http://www.speechpathology.com/ask-the-experts/learning-to-hear-again-cochlear-900>. Cochlear Implantation and AV Therapy
16. http://www.speechpathology.com/askexpert/display_quesitons.asp?id=1 Speech Language Therapy Needs for Cochlear Implant Recipients.

Cognitive-Communication Disorder(s)

Related Terms

- Cognitive-communication disorders (CCD) is an umbrella term for a number of symptoms that are a part of the disorder.
- Cognitive rehabilitation is what is done to improve the symptoms.

Definition

- "Communication requires a complex interplay between cognition, language and speech...These deficits impact communication by decreasing comprehension, expression, and pragmatics (the use and interpretation of verbal and nonverbal language in social interaction)."¹
- "Cognitive-communication disorders are communication impairments resulting from underlying cognitive deficits due to neurological impairment. These are difficulties in communicative competence (listening, speaking, reading, writing, conversation and social interaction) that result from underlying cognitive impairment (attention, memory, organization, information processing, problem solving, and executive functions). The disorders are distinct from other neurological communication disorders (e.g., aphasia, dysarthria, etc.) and require specific techniques."²
- "Cognitive-communication disorders encompass difficulty with any aspect of communication that is affected by disruption of cognition. Communication may be verbal or nonverbal and includes listening, speaking, gesturing, reading, and writing in all domains of language (phonologic, morphologic, syntactic, semantic, and pragmatic). Cognition includes cognitive processes and systems (e.g., attention, perception, memory, organization, executive function)."³

Presentation

- Two main causes of acquired CCD are traumatic brain injury and stroke. Additional etiologies include but are not limited to anoxia, cardiovascular disease, encephalitis, meningitis and other infectious disorders, brain tumors, and dementia.
- When concomitant speech disorders or aphasia and CCD occur, the CCD may be masked by the aphasia or unintelligible speech and will not necessarily be evident. Conversely, if the speech and/or language deficits are moderate to severe, they may be masking CCD.^{5,7}
- "No two injuries are the same; consequently, TBI results in a diverse, idiosyncratic constellation of cognitive-communicative, physical, and psychosocial deficits."⁴
- Cognitive-communication disorders can be found singly but also often in combination with other disorders. For example, the presence of an auditory comprehension deficit (aphasia) may be noted, but in further investigation, it is found that an underlying attention and short-term recall (CCD) deficit is a causal factor.

Differential Diagnosis Considerations

- Unlike apraxia, dysarthria, and aphasia, speech may sound normal and language may be fluent, but content of message may be disorganized, inappropriate, rambling, off-topic, etc. It should be noted that dysarthria and apraxia of speech can and often do occur with CCD.
- "An impairment of even a select few of the myriad cognitive components can adversely affect communication. The term cognitive-communication disorder is used to denote a direct connection between the impaired cognitive function and the overt breakdown in communication."⁵
- Denial and/or lack of awareness of deficits is a common symptom so patient self-observations cannot be relied upon.

Specific Treatment Issues

- "Understanding the hierarchy of cognitive-linguistic skills is required to assess their impact upon communication...All of these skills underlie effective communication and independent functioning within one's environment. If there are deficits in these underlying cognitive-linguistic skills, communication will be impaired, and safety may be at risk."⁷
- Individuals with CCD as a primary diagnosis can exhibit complex emotional and behavioral reactions making treatment difficult.

Symptomatology^{2, 4, 7, 11}

Symptoms will range both in amount and level of severity as will their functional effect on the individual. Cognitive-communication disorders include large sequelae of deficits. The list includes but is not limited to the following main issues.

Clinical Symptoms	Functional Effects
Impaired functional communication; impaired pragmatics and social communication skills	Verbal output may have many words, even verbose, but little or inappropriate content; rambling, poor thought organization, disorganized, off-topic, verbosity, literal and concrete; loses point, little initiation, lack of social skills, impaired turn-taking, topic maintenance and shifting
Impaired and slow processing of information; impaired and/or delayed understanding	Inability to attach meaning to what is heard or read (verbal or written); doesn't get emotion or implied meaning of message; literal; gets lost in details; can't interpret verbal and nonverbal cues; can't separate relevant from irrelevant info; impaired comprehension and comprehension
Impaired executive functioning: includes poor planning, goal-setting, initiation, and self-monitoring; and; rigid, inflexible thinking, difficulty in handling interruptions, distractions, or change	Difficulty running one's life; in-ability to plan, organize and follow-through with communications; poor initiation of communication; inability to initiate lists, writing reminders or messages, or initiating speech for assistance

Impaired attention and concentration; Memory as related to 1. immediate processing 2. short-term recall of information in order to act on or respond to others	Poor reading and writing; impairment in understanding what is heard or written; impaired ability to keep information that is heard or read in working memory long enough to process the information and respond to it or recall it; related to slow processing impairment and basic to language skills
Impaired perceptual skills (auditory, visual, spatial)	Necessary skills to read, spell, and write; if severe, an inability to distinguish, track, or scan for letters/words on a page; difficulty tracing or copying letters, words
Impaired problem-solving and reasoning	Impairment in making appropriate decisions; impaired ability to judge and communicate issues of importance and safety
Impaired word retrieval; word fluency; vocabulary and syntax	Inability to get across needs and ideas; lack of meaning; empty or shortened speech
Lack of awareness, insight, integration; denial; impulsivity; lack of understanding of deficits	Inability to communicate appropriately with others and deal with public; misunderstood interactions; inability to get needs met with no insight as to why

SLP Management^{1, 8}

Goal of the evaluation

- Establish a differential diagnosis based on clinical findings.
- Document changes from premorbid abilities, the extent to which the disorder has impacted daily life, and current level of functioning.
- Determine if treatment is necessary and potential for functional gains.

Evaluation should address:

- Relevant past medical history with cause and onset of disorder
- Past treatment, if any, for CCD
- Diagnosis of current condition including impact on daily life
- Description of disorder(s) including extent and severity as determined from objective measures
- Concurrent conditions with complexities and their impact on prognosis
- Recommendations if treatment is warranted or not and why

Plan of Care if treatment is warranted

- Long-term goals and estimated time frame for attaining them
- Frequency and intensity of treatment; justification for intensive or long-term treatment
- Prognosis for improvements and why
- Referrals to other professionals and services as appropriate

Treatment Interventions: Clinical Process

- Statement of short-term functional measurable goals within each interval
- As appropriate in each case, home assignments between sessions
- As appropriate in each case, education and training to caregivers
- As appropriate in each case, counseling, dialogue, and support with patient / caregivers to assist understanding
- Continual assessing, monitoring, modeling, evaluating responses, providing meaningful feedback, and adjusting treatment and updating plans as needed
- As appropriate in each case, teach strategies, compensations, self-cueing techniques etc. and provide guidance and suggestions
- Ongoing preparation to patient and caregivers for discharge through education, training, and resources for "next steps"

Documentation

- Notes for each encounter to include type of treatment and patient's response to it
- Show measurable progress toward goals or reasons not attained such as: fluctuations in abilities and/or alertness, motivation, caregiver or home programming issues
- Show evidence that education was provided and response to it
- Include attainment, updates, or changes in short or long-term goals and/or changes in intensity or type of treatment

Discharge Criteria

- Patient is at functional levels in all aspects of disorder
- No progress is noted after 2-4 typical sessions
- Patient is able to continue with a home management program
- All goals are reached; no further intervention indicated
- Patient's response/nonresponse to treatment justifies discharge
- Medical reasons dictate break from or termination of sessions

Possible Referrals to:

- Physician or neurologist for medical or dysphagia concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for evaluation
- Vision specialist for checking vision or field cuts

Outcomes/Treatment Efficacy

- "Cognitive-communication disorders improve after intervention...Gains in cognitive-communication impairments, activities, and participation in society have been noted after speech and language intervention."¹²
- There is "clear evidence supporting the effectiveness of cognitive rehabilitation for impairments of attention, functional communication, memory, and problem-solving."¹³

- "There is both scientific and clinical evidence that individuals with cognitive-communicative disorders resulting from traumatic brain injury (TBI) benefit from the services of speech-language pathologists. This evidence is documented in experimental research, program evaluation data, and case studies."¹⁴

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

Medicare References:

1. Centers for Medicare & Medicaid Services (CMS), CMS Manual System-Pub 100-02 Medicare Benefit Policy, Transmittal 179, Manual Updates to Clarify Skilled Nursing Facility (SNF), Inpatient Rehabilitation Facility (IRF), Home Health (HH), and Outpatient (OPT) Coverage Pursuant to Jimmo vs. Sebelius.
<http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R179BP.pdf>
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Developmental Speech and Language Disorders in Children

Synonyms

- Developmental language disorder
- Receptive language disorder [mixed]
- Other-Developmental articulation disorder

Definition

Speech and language disorders are characterized as delays or deficiencies in the understanding and/or use of spoken or written language. The impairment may involve the inability to clearly produce individual speech sounds and difficulty combining speech sounds for words. Individual speech sounds may be incorrectly substituted, omitted or distorted. The impairment may also involve the form of language (phonology, morphology, and syntax), the content of the language (semantics), the function of the language in communication (pragmatics), or any combination of the above. Language disorders can be a result from congenital syndromes such as a fragile X syndrome, Down's syndrome, diseases, toxins, hearing loss or head injury.

History

Goals of Complaint History

- Identify co-morbidities that affect general management or which require medical management.
- Determine if trauma-related or congenital; determine nature and extent of event.
- Determine primary medical condition for insurance coverage purposes.

Presentation

Symptomatology

Because speech and language delays can be mild or very severe, the symptoms will range both in number of intensity.

Symptomatology	Possible Consequence or Cause
▪ Suspect a hearing loss ▪ Absence of cooing or babbling ▪ Absence of vocal play ▪ Absence of jargon-like utterances ▪ Absence of imitation of sounds or words ▪ Difficulty expressing simple needs or wants with gestures ▪ Absence of telegraphic speech ▪ Difficulty naming familiar objects or pictures ▪ Difficulty expressing simple needs, wants or thoughts with single,	Early interventions for infants and toddlers with expressive language delays-birth to 48 months

meaningful words increasing to a 4-word utterance by 3 years of age ▪ Oral motor difficulties related to neuro-musculature or structural anomalies ▪ Evidence of frustration, aggressive or passive behaviors due to difficulty effectively communicating needs, wants, thoughts, and ideas	
▪ Suspect hearing loss ▪ Difficulty following simple commands, such as “sit” ▪ Difficulty pointing to familiar objects or pictures upon verbal command ▪ Difficulty understanding simple words ▪ Difficulty pointing to body parts upon verbal command ▪ Difficulty following 2- to 3-step related verbal commands ▪ Difficulty following 2- to 3-step unrelated verbal commands ▪ Evidence of frustration and behavioral outbursts due to difficulty understanding basic information	Early intervention for infants and toddlers with receptive language delays-birth to 48 months
▪ Suspect hearing loss ▪ Difficulty communicating at expected level for age: ▪ Difficulty using meaningful single words ▪ Difficulty combining 2 to 3 words to create a meaningful sentence ▪ Difficulty communicating with a grammatically correct sentence ▪ Word finding difficulties ▪ Limited use of various verb forms (verb + ing, irregular and regular past tense) ▪ Limited use of adjectives, plurals, and irregular plurals ▪ Difficulty repeating sentences. ▪ Difficulty initiating communication in a structured environment ▪ Difficulty organizing thoughts and ideas into a cohesive sentence ▪ Difficulty describing a procedure ▪ Difficulty retelling a story ▪ Difficulty taking turns during a conversation ▪ Responses during a conversation may be redundant or tangential ▪ Difficulty transitioning from one topic to another ▪ Difficulty maintaining relationships due	Language Expression Delay in children older than 4 years

- to poor communication skills - Increased frustration and behavioral outbursts when unable to effectively express needs, wants, thoughts, and ideas	
- Suspect hearing loss - Difficulty understanding and following instructions expected for age - Difficulty pointing to body parts or common objects following a verbal command - Difficulty answering simple to increasingly complex “yes/no” or “wh-questions” expected for age - Difficulty understanding spatial concepts (under, next to, in front of, behind) - Difficulty understanding descriptive, time, quantity or time/sequence concepts - Difficulty understanding a passive voice sentence - Increased frustration and behavioral outbursts when unable to understand and follow instructions	Receptive Language Delay in children older than 4 years
- Suspect hearing loss - Difficulty producing speech sounds correctly for expected age - Incorrect use of consonant sounds - Omission of consonant sounds in words - Use of primarily vowel sounds - Speech is difficult to understand or mostly unintelligible to familiar and/or unfamiliar listeners - Slow rate of speech production - Rapid and/or slurred speech production - Use of gestures to communicate - Increased frustration and behavioral outbursts when listeners are unable to comprehend the intended message - Oral motor difficulties related to neuro-musculature or structural anomalies - Difficulty chewing and/or swallowing solid foods - Food adversities related to texture, taste or temperature - Poor management of secretions	Articulation Disorder/Phonological Processes Disorder

Findings

Goal of Speech and Language Evaluation

- Examination for possible causes or contributing factors to the complaint. Differential diagnoses should include the following:
 - Hearing loss
 - Muscle weakness or paralysis of oral musculature or speech mechanism
- Determine the severity of the impairment. If the performance measure falls 2 standard deviations below the mean on more than one standardized test, the child may be diagnosed with a speech or language disorder.

Scope of Speech and Language Evaluation

- Obtain medical history from the child's medical records, interview the child if age-appropriate, and interview the child's family member, caregiver or guardian.
- Obtain the child's developmental, feeding and eating abilities, management of secretions and speech and language history.
- Identify any cultural or linguistic differences and any behavioral factors that may be contributing to the breakdown in functional communication.
- Identify the communication demands in the home.
- Assessment of the oral mechanism
 - Muscle development of the jaw, lips, and tongue and the integrity of the oral structures [hard and soft palate, jaw, lips and tongue].
 - Purposeful movement with imitation of non-speech actions.
 - Diadokokinetic rate: muscle movement for coordinating and sequencing a repetitive string of sounds rapidly (i.e., puh, tuh, kuh or buttercup).
- Assess the coordination of breathing with speaking.
- Assess articulation at the word to conversation level.
- Assess phonology for the presence of phonological processes.
- Obtain and interpret a language sample if the child has sufficient verbal output.
- Assess prosody and stress patterns.
- Assess receptive and expressive language abilities.
 - Use and understanding of vocabulary.
 - Understand and answer simple to increasingly complex yes/no and wh-questions.
 - Follow simple to multi-unit directives.
 - Comprehension of verbal passages from the sentence to paragraph level increasing in complexity.
 - Age-appropriate use of grammatical construction in sentences.
 - Use of word forms.
 - Social communication skills.

The evaluation process may include the selection and administration of standardized tests, portions of standardized tests, non-standardized tests, and language samples.

Results if developmental speech or language disorder

- Determine an appropriate plan of care based upon the child's medical history, cultural and linguistic differences, and functional impact,
- Interpret the clinical findings of the speech/language evaluation. If the performance measure falls 2 standard deviations below the mean on more than one standardized test, a child may be diagnosed with a speech or language disorder.
- Determine the needs and abilities of the child, parental concerns and the potential for functional improvement within a reasonable time frame, and
- Communicate the results of assessment and the recommendations for intervention to the child, parents, and other involved professionals.

Speech-Language Management

Goal of the evaluation

- Establish a differential diagnosis based on clinical findings.
- Determine if treatment is necessary and potential for functional gains.

Evaluation should address:

- Relevant past medical history with cause and onset of disorder
- Past treatment, if any, for the speech and/or language delay

Management

The following management will vary depending on the specific needs of the child.

- Develop an individual program designed to address motor learning, which is needed for speech movement or speech production with graded complexity.
- Develop an individual program designed to address the child's immediate communication needs so that the child may participate in a variety of communication situations within his/her home, school and/or community.
- Develop an individual program utilizing the communication strengths of the child and the expectations of the family.
- Develop a treatment plan that emphasizes practice and repetition to ensure acquisition of new sounds, syllables and words which can be enhanced with tactile, kinesthetic, auditory and visual prompts.
- Develop a home program to facilitate speech motor planning skills.
- Provide family members, caregivers, guardian, siblings, educators and/or other communication partners training in communication techniques and strategies to facilitate effective communication with child including recognition and acknowledgement of the child's communication attempts and identify and respond appropriately to the child's communicative attempts.
- Provide parents with information regarding community support groups and/or programs.
- Continue to assess the child because symptoms will change over time.

- Select and implement appropriate Augmentative or Alternative Communication system for those children with significant speech and/or language difficulties.

Treatment Plan Timeline

Frequency and duration of services is based upon the specific needs of the child at the time of the evaluation. Children with speech and language disorders tend to have periods where they plateau then will go on to make functional improvements. In addition, the symptoms will change over time. Therefore, discharge planning will involve consideration of maximum potential achieved and the individual family circumstances.

Early Stages of Treatment	▪ Explore factors that could impact outcomes now and in the future ▪ Explore strengths and weaknesses, and other components for best treatment outcomes ▪ Explore family understanding, challenges, and capabilities to develop education and training program ▪ Develop treatment program based on findings and best practices for this patient ▪ Develop an individualized supplemental home program to monitor and change as needed ▪ Document findings, techniques and responses to treatment
Ongoing Treatment	▪ Provide patient/family ongoing education and training ▪ Assess response to and feedback from home program to modify, and update ▪ Document measurable gains and modify plan of care if indicated ▪ Assess ongoing response to treatment, gains, lack of progress, other factors; modify program as needed ▪ Assess if intelligible verbalization or supplemental and/or alternative means of communication will be probable; develop these or refer as needed ▪ Determine other factors impacting condition requiring intervention or referral (see referral guidelines)
Later Stage of Treatment / Discharge Planning	▪ Provide suggestions and resources for follow-up ▪ Provide home program to continue to progress and/or to maintain gains ▪ Provide summary of course of treatment and progress ▪ If discharged due to medical issues and/or plateau in progress, indicate under what future conditions a new referral would be warranted
Discharge Criteria	▪ Medical/psychological or other issues interfering with goals of treatment program ▪ Able to continue with a home management or other supplemental program ▪ Goals have been reached ▪ Insurance benefit has ended ▪ Non-response to treatment justifies discharge

Referral Guidelines

If improvement does not meet the above guidelines or improvement has reached a plateau:

- Refer patients to the referring physician or specialist to explore other alternatives.

- Referral to an otolaryngologist, pediatric laryngologist, neuropsychologist, or audiologist as appropriate.
- Consult with a specialist in the field of augmentative and assistive communication systems.
- Consult with physical therapist, occupational therapist, home trainer or early childhood special educator.
- Referral to school-based provider.
- Referral to local support groups.

Home Medical Equipment

Augmentative and assistive communication device.

Self-Management Techniques

Child and parents to follow home exercise program.

Alternatives to ST Management

Use of alternative and assistive communication device.

Medicare References:

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Dysarthria

Related Terms

- Slurred speech
- Flaccid dysarthria
- Hypokinetic dysarthria
- Mixed dysarthria
- Ataxic dysarthria
- Spastic dysarthria
- Hyperkinetic dysarthria
- Lower motor neuron dysarthria

Definition

- "Dysarthria is a collective name for a group of speech disorders resulting from disturbances in muscular control over the speech mechanism...It designates problems in oral communication due to paralysis, weakness, or incoordination of the speech musculature."¹⁰
- "This group of disorders varies along a number of dimensions, including...natural course (developmental, recovering, stable, degenerative and so on), site of lesion...neurologic diagnosis...and pathophysiology."⁹

Presentation

- Dysarthria "characteristics reflect abnormalities in the strength, speed, range, timing or accuracy of speech movements as a result of pathophysiologic conditions such as weakness, spasticity, ataxia, rigidity, and a variety of involuntary movements (e.g. dystonia, tremor)... Dysarthrias can affect the respiratory, laryngeal, velopharyngeal, and oral articulatory subsystems, singly or in combination."⁹
- Common causes of dysarthria include stroke, brain injury, brain tumor; conditions that cause facial paralysis or weakness; and degenerative neuromotor and neuromuscular disease.
- Dysarthria may also occur as a result of alcohol toxicity, medication side effects, loose dentures, post-surgery.
- Onset may be sudden or gradual over months or years.

Differential Diagnosis Considerations

- Unlike apraxia of speech, dysarthria does show evidence of muscular weakness and articulatory errors are consistent.
- When dysarthria is evident, a screening for dysphagia is important.
- Dysarthria often occurs with both aphasia and cognitive deficits.
- Unlike aphasia and cognitive disorders, dysarthria is purely a disorder of speech production.
- The presence of dysarthria can mask other disorders or other disorders can be masked by the dysarthria.

Specific Treatment Issues

- Evaluation and treatment of concurrent disorders and an understanding of their impact are important aspects of management.
- In addition to symptomatology, the underlying cause, the type, and status of dysarthria are pertinent to management and treatment.
- If dysarthria is severe and/or progressive, consideration of augmentative or alternative aids may be appropriate during the course of treatment.

Symptomatology^{1, 7, 10}

Because dysarthria can be mild or very severe and involve several systems, the symptoms will range both in number and intensity as well their effect on respiration, chewing swallowing, and phonation.

Clinical Symptoms	Functional Effects
▪ Imprecise, distorted, slurred speech ▪ Impaired pitch levels and breaks ▪ Impaired vocal loudness, intensity, quality ▪ Hyper or hypo nasality ▪ Impaired or uncontrolled rate and phrasing ▪ Impaired voice quality and voicing ability ▪ Distorted sounds and words ▪ Shortened length of utterance ▪ Limited tongue, lip, jaw movements ▪ Impaired control of saliva or drooling ▪ Limited breath/respiratory support ▪ Mumbled or garbled speech ▪ Shortened utterances ▪ Breathiness or hoarseness	At its most severe, are inaudible or undifferentiated sounds. Improvements affect intelligibility through voicing, articulation, rate, volume, length and strength of utterances. Other means of communication as writing, gestures, spelling, typing, pointing may not be possible. Symptoms such as limited movement, shortness of breath, drooling, etc. affect both speech and daily life.

SLP Management^{1, 8}

Goal of the evaluation

- Establish a differential diagnosis based on clinical findings.
- Document changes from premorbid abilities, the extent to which the disorder has impacted daily life, and current level of functioning.
- Determine if treatment is necessary and potential for functional gains.

Evaluation should address:

- Relevant past medical history with cause and onset of disorder
- Past treatment, if any, for dysarthria
- Diagnosis of current condition including impact on daily life
- Description of disorder(s) including extent and severity as determined from objective measures
- Concurrent conditions with complexities and their impact on prognosis
- Recommendations if treatment is warranted or not and why

Plan of Care if treatment is warranted

- Long-term goals and estimated time frame for attaining them
- Frequency and intensity of treatment; justification for intensive or long-term treatment
- Prognosis for improvements and why
- Referrals to other professionals and services as appropriate

Treatment Interventions: Clinical Process

- Statement of short-term functional measurable goals within each interval
- As appropriate in each case, home assignments between sessions
- As appropriate in each case, education and training to caregivers
- As appropriate in each case, counseling, dialogue, and support with patient / caregivers to assist understanding
- Continual assessing, monitoring, modeling, evaluating responses, providing meaningful feedback, and adjusting treatment and updating plans as needed
- As appropriate in each case, teach strategies, compensations, self-cueing techniques etc. and provide guidance and suggestions
- Ongoing preparation to patient and caregivers for discharge through education, training, and resources for "next steps"

Documentation

- Notes for each encounter to include type of treatment and patient's response to it
- Show measurable progress toward goals or reasons not attained such as: fluctuations in abilities and/or alertness, motivation, caregiver or home programming issues
- Show evidence that education was provided and response to it
- Include attainment, updates, or changes in short or long-term goals and/or changes in intensity or type of treatment

Discharge Criteria

- Patient is at functional levels in all aspects of disorder
- No progress is noted after 2-4 typical sessions
- Patient is able to continue with a home management program
- All goals are reached; no further intervention indicated
- Patient's response /nonresponse to treatment justifies discharge
- Medical reasons dictate break from or termination of sessions

Possible Referrals to:

- Neurologist if progressive disorder is suspected but undiagnosed
- Social worker for patient or family concerns
- ENT for muscular or respiratory concerns
- Specialist for providing hi-tech AAC if recommended
- Physician for concerns of dysphagia

Outcomes/Treatment Efficacy

- "Outpatient speech-language pathology services are associated with improved intelligibility and communication functioning of patients...The data show that approximately two thirds of adults...at the onset of treatment progressed to a level of increased communicative independence and were intelligible to all listeners ..."⁵
- Treatment efficacy studies have shown change in progressive dysarthria. "For some, the disease course was degenerative and intervention maintained a given level of speech production in the face of progression of the underlying impairment. For others, improvement in chronic and stable conditions was cited as support of intervention effectiveness."⁹

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

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Dysphagia (Swallowing Disorder) and Instrumental Assessment in Adults

Synonyms

- Swallowing disorder
- Swallowing impairment
- Oral phase dysphagia
- Pharyngeal phase dysphagia
- Esophageal phase Dysphagia
- Deglutition impaired

Definition

Difficulty in swallowing from the time food/liquid enters the mouth to the time it enters the stomach. Dysphagia affects the ability to maintain adequate nutrition and hydration and may lead to dehydration and aspiration. Swallowing is divided into four phases:

Oral Preparatory Phase:

Requires:

- Lip strength for removing material from utensil and holding material in the oral cavity.
- Tongue strength and coordination for manipulating and forming a bolus and keeping material from falling posteriorly.
- Mandible/jaw control for good labial seal and coordinating chewing.
- Adequate dentition condition for masticating and chewing solids

Oral Transit Phase:

Requires:

- Ability to propel the bolus into the pharyngeal area to trigger a swallowing response.
- Needs adequate labial seal, intact tongue mobility, buccal muscles, & nasal breathing

Pharyngeal Phase:

Requires:

- Velopharyngeal Closure
- Timely swallowing reflex to be triggered
- Posterior tongue retraction
- Pharyngeal wall contraction
- Laryngeal elevation
- Hyoid excursion
- Epiglottic inversion

- Glottic closure/airway protection
- Crico-pharyngeal sphincter opens

Esophageal Phase:

Requires:

- Peristalsis of the esophageal musculature.
- Movement of material from the upper esophageal sphincter to the lower esophageal sphincter.

History

Goals of Complaint History

- Determine possible “medical red flags” that place an individual at risk for Dysphagia such as cerebral vascular accident, traumatic brain injury, Parkinson’s disease, multiple sclerosis, spinal cord injury, cerebral palsy, Alzheimer’s disease, head/neck cancer, and other damage to or diseases of the nervous system, etc...
- Identify co-morbidities that affect general management or which require medical management (medications, age/frailty, vital signs,).
- Determine if trauma-related or congenital; determine the nature, extent of the event, and onset of the dysphagia.

Presentation

Symptomatology

The table below contains some of the more common symptoms for the four phases of swallowing. Clinical judgment should be used to identify and react to case specific circumstances.

Difficulty taking material from a utensil	▪ Weak labial skills; decreased labial range of motion ▪ Post-surgery; cerebral palsy (CP); Down’s Syndrome (DS); cerebral vascular accident (CVA); Parkinson’s Disease (PD); any neurological disease/accident
Leakage of material out of oral cavity; drooling/difficulty managing secretions	▪ Weak labial skills ▪ Post-surgery; CP; DS; CVA; PD; any neurological disease/accident; decreased sensation
Pocketing of material in the oral cavity	▪ Weak buccal muscles; weak labial skills; weak lingual skills; decreased oral sensation ▪ Head/neck cancer; Bell’s Palsy; CVA; post-surgery; PD; any neurological disease/accident
Difficulty manipulating food into a bolus	▪ Weak buccal muscles; weak labial skills; weak lingual skills ▪ Head/neck cancer; Bell’s Palsy; CVA; post-

	surgery; PD, any neurological disease/accident
Premature spillage of material into the pharyngeal area	- Weak posterior lingual strength or range of motion; decreased sensation - Head/neck cancer; CVA; post-surgery; PD, any neurological disease/accident
Poor mastication or breakdown of material	- Poor dentition condition; decreased jaw excursion/range of motion - Edentulous/lacking dentition; ill-fitting dentures; trismus; head/neck cancer; post-radiation treatment; CVA
Oral Transit – Clinical symptoms	Functional effects
Tongue pumping	- Weak posterior tongue strength; inability to propel the bolus into the pharyngeal area - PD
Increased time to propel the bolus	- Weak posterior tongue strength; inability to propel the bolus into the pharyngeal area - PD; CVA; CP; any neurological disease/accident
Tongue thrusting	- Weak posterior tongue strength; ; inability to propel the bolus into the pharyngeal area - CP; DS
Pharyngeal – Clinical symptoms	Functional effects
Nasal penetration or regurgitation	- Poor velo-pharyngeal closure - Head/neck cancer; PD; velo-pharyngeal insufficiency; velo-pharyngeal incompetence; cleft palate; post-surgery; CVA; any neurological disease/accident
Sneezing when swallowing liquids, solids, or both	- Poor velo-pharyngeal closure - Head/neck cancer; PD; velo-pharyngeal insufficiency; velo-pharyngeal incompetence; cleft palate; post-surgery; CVA; any neurological disease/accident
Coughing/choking when swallowing liquids, solids, or both	- Swallow delay (delay in initiating a swallow response); poor airway protection - CVA; PD; amyotrophic lateral sclerosis (ALS); any neurological disease/accident
Throat clearing when swallowing liquids, solids, or both	- Swallow delay (delay in initiating a swallow response); poor airway protection - CVA; PD; amyotrophic lateral sclerosis (ALS); any neurological disease/accident
Wet/gurgly voice quality	- Swallow delay (delay in initiating a swallow response); poor airway protection - CVA; PD; amyotrophic lateral sclerosis (ALS); any neurological disease/accident
Pneumonia	- Aspiration/penetration; poor airway protection; - Any neurological disease/accident; CVA; ALS; PD; head/neck cancer; post-radiation treatment; post-surgery
Chest congestion after P.O. intake	- Aspiration/penetration; poor airway protection; - Any neurological disease/accident; CVA; ALS;

	PD; head/neck cancer; post-radiation treatment; post-surgery
Temperature spike within one hour of oral intake	- Aspiration/penetration; poor airway protection; - Any neurological disease/accident; CVA; ALS; PD; head/neck cancer; post-radiation treatment; post-surgery
Drop in oxygen saturation levels	- Aspiration/penetration; poor airway protection; - Any neurological disease/accident; CVA; ALS; PD; head/neck cancer; post-radiation treatment; post-surgery
Multiple swallows to clear material from pharyngeal/laryngeal area(s)	- Residue in the valleculae, pyriform sinuses, and/or lateral channels - Any neurological disease/accident; CVA; ALS; PD; head/neck cancer; post-radiation treatment; post-surgery; osteophytes; Zenker's diverticulum
Report of material "sticking" in pharyngeal area	- Residue in the valleculae, pyriform sinuses, and/or lateral channels - Any neurological disease/accident; CVA; ALS; PD; head/neck cancer; post-radiation treatment; post-surgery; osteophytes; Zenker's diverticulum
Difficulty sustaining adequate nutrition and hydration and/or weight loss	- Weak oral skills; poor airway protection; behavioral/cognitive deficits - Any neurological disease/accident; CVA; ALS; PD; head/neck cancer; post-radiation treatment; post-surgery; dementia; delirium
Esophageal – Clinical symptoms Functional effects	
Report of material "sticking" laryngeal area and/or sterna area (globus sensation)	- Poor esophageal motility; gastro-esophageal reflux - Gastro-esophageal reflux disease (GERD); hiatal hernia; diverticulum; achalasia; esophageal stricture
Gastro-esophageal reflux (material may come up into the pharyngeal area or regurgitated out of the oral cavity)	- Poor esophageal motility - Gastro-esophageal reflux disease (GERD); hiatal hernia; diverticulum; esophageal stricture

Findings

Techniques for Evaluating Swallowing (it should be noted that it is ideal to begin with a bedside/clinical swallowing evaluation prior to an imaging evaluation, but the physician may refer the patient directly for an imaging evaluation)

Non-Imaging

- Bedside/Clinical Swallowing Evaluation
- Electromyography (EMG) (rarely used)
- Electroglottography (EGG) (rarely used)
- Pharyngeal Manometry (rarely used)

Imaging

- Modified Barium Swallow Study (MBS) aka Videofluoroscopic Swallow Evaluation (VFSE)
- Fiberoptic Endoscopic Evaluation of Swallowing (FEES)
- Ultrasound (rarely used)
- Scintigraphy (rarely used)

Goals of Evaluation of Swallowing

Bedside/Clinical Swallowing Evaluation

1. To rule out Dysphagia
2. To begin to determine what the possible etiologies are for the Dysphagia
3. To determine if a further imaging evaluation is necessary

Modified Barium Swallow Study/Videofluoroscopic Swallow Evaluation

1. To determine if aspiration is occurring, how much aspiration is occurring, with what textures is aspiration occurring, why is aspiration occurring, and how much at risk is the individual for aspirating.
2. To determine which (if any) strategies/techniques, positions, diet textures, and safety or oral intake.
3. To determine if therapy is indicated for exercises, stimulation, learning strategies/techniques, and safe diet textures.

Fiberoptic Endoscopic Evaluation of Swallowing

1. To determine if aspiration is occurring, how much aspiration is occurring, with what textures aspiration is occurring, why aspiration is occurring, and how much at risk is the individual for aspirating.
2. To determine which (if any) strategies/techniques, positions, diet textures, and safety or oral intake.
3. To determine if therapy is indicated for exercises, stimulation, learning strategies/techniques, and safe diet textures.

Scope of Swallowing Evaluations

Bedside/Clinical Swallowing Evaluation

- Obtain medical history from the individual's medical records including a list of medications and medication schedules; interview the individual, family members, or caregiver(s).

- Complete an oral peripheral evaluation to assess the integrity of the oral structures and the oral motor function of those structures.
- Assess the oral preparatory phase, oral transit phase, and watch for pharyngeal and esophageal red flags.
- Clinical judgments of the adequacy of airway protection and coordination of respiration and swallowing.
- Identify the presence and observe the characteristics of a dysphagia based on clinical signs and symptoms (red flags).
- Assessment of the effects of compensatory strategies such as altering bolus size and/or bolus delivery rate, therapeutic postures, maneuvers/techniques, alternating solids and liquids, and changes in textures.
- The use of tools (such as cervical auscultation and pulse oximetry) may be used in the assessment process to detect and monitor clinical signs of dysphagia.

MBS/VFSE

- Obtain medical history from the individual's medical records including a list of medications and medication schedules; interview the individual, family members, or caregiver(s) unless already done during the bedside/clinical swallowing evaluation.
- Complete an oral peripheral evaluation to assess the integrity of the oral structures and the oral motor function of those structures.
- Assess the oral preparatory phase, oral transit phase, pharyngeal phase, and screen the esophageal phase.
- Determine adequacy of airway protection and coordination of respiration and swallowing.
- Assess pharyngeal phase skills:

Area assessed	Effects if disordered
Velo-pharyngeal closure	Nasal penetration and/or regurgitation
Presence of a swallow delay	Penetration and/or aspiration
Posterior tongue retraction	Poor supraglottic pressure with residue on the tongue base
Posterior pharyngeal wall contraction	Poor supraglottic pressure with residue on the pharyngeal wall
Hyoid excursion	Decreased laryngeal elevation resulting poor epiglottic inversion and poor crico-pharyngeal sphincter opening resulting in residue in the valleculae and/or pyriform sinuses respectively
Laryngeal elevation	Poor epiglottic inversion and poor crico-pharyngeal sphincter opening resulting in residue in the valleculae and/or pyriform sinuses respectively
Epiglottic inversion	Poor hyoid excursion/laryngeal elevation; stiff or immobile epiglottis (radiation damage); hits posterior pharyngeal wall (due to osteophytes, swelling, cervical hardware post-surgery, narrow hypopharynx)
Crico-pharyngeal sphincter opening	Poor hyoid excursion/laryngeal elevation; tight (to protect against reflux, crico-pharyngeal bar, presence of osteophytes causing tightness)
Airway protection	Poor epiglottic inversion; paralyzed or weak vocal folds

Cough response	Penetration or aspiration
Unilateral pharyngeal weakness (need to turn patient for an anterior-posterior view)	Residue on one side of the pharynx more than the other
Structural anomalies	Zenker's Diverticulum; osteophytes; crico-pharyngeal bar; tumors; swelling post-surgery

Screen esophageal phase

Esophageal motility	Reflux; tertiary contractions
Structural abnormalities	Hiatal hernia; diverticulum; stenosis

Assessment of the effects of compensatory strategies such as altering bolus size and/or bolus delivery rate, therapeutic postures, maneuvers/techniques, alternating solids and liquids, and changes in textures.

FEES

Same as the above chart except one cannot assess hyoid excursion or laryngeal elevation and visual the exact moment of aspiration due to the "white out period". Cannot screen the esophageal phase either.

Results of Evaluating Swallowing

- Consult with primary care physician on clinical findings and proceed as agreed by primary care physician.
- Determine appropriate referrals based upon clinical findings.
- If pharyngeal phase or esophageal phase dysphagia is suspected based on clinical findings and/or the presence of pharyngeal "red flags" during a bedside/clinical swallow evaluation, further imaging techniques for evaluating the pharyngeal phase is warranted.
- Develop a plan of care based upon the patient's medical history, prior level of function, current medical and nutritional status, date of onset, age, cognitive abilities, contributing behavioral and psychological factors, patient specific quality of life issues, and clinical findings.
- Establish long-term and short-term goals with functional and measurable outcomes.

Swallowing Management through therapy

The following management will vary depending on the specific needs of the patient.

- If oral feedings are appropriate, determine the least restrictive diet consistency and liquid level.
- If the patient is currently NPO (nothing presented by mouth), develop an appropriate plan of care with introduction of P.O. when appropriate.
- Determine positions that would improve the safety and efficiency of P.O. intake (such as upright ninety degrees, chin tuck, head turns, head tilts).

- Determine compensatory strategies to improve the safety and efficiency of P.O. intake (such as rate of intake, bolus amount, hard-effortful swallow, repeat/extra swallows, alternate solids with liquids, periodic throat clears).
- Provide written instructions to the patient and his/her family, if appropriate, for safe swallow strategies.
- Determine if any exercises may help to improve the safety and efficiency of P.O. intake (such as oral motor exercises, Mendohlson maneuver, Masako exercise, Shaker exercise, vocal fold adduction exercises).
- Determine if any techniques to stimulate the swallowing reflex and/or musculature (such as Neuromuscular Electrical Stimulation (NMES), myofascial release, Deep Pharyngeal Neuromuscular Stimulation (DPNS), thermal-tactile stimulation).
- If reflux is a concern, educate and train the patient and his/her family about behavioral management of GERD (such as elevate head of bed, don't eat 2-3 hours prior to lying down or going to bed, eating smaller, more frequent meals throughout the day, avoiding foods/liquids known to aggravate reflux).
- Educate and train the patient and his/her family, if appropriate, about swallowing and feeding disorders
- Educate and train the patient and his/her family, if appropriate, to follow-through with patient specific swallow strategies, diet textures, and exercises).
- Document progress and modify the treatment plan to meet the needs of the patient when indicated.
- Determine patient specific dismissal criteria.

Treatment Plan Timeline

The frequency and duration of services is based upon the specific needs of the patient at the time of the evaluation and the patient's measurable response to treatment on a weekly basis. The frequency and duration may vary depending on what therapy will incorporate. For example, if the clinician is going to do NMES, more intensive frequency and duration is warranted. Discharge is recommended when the patient has reached a plateau (i.e.: no qualitative gains made over a period of at least three weeks) or maximum potential has been achieved.

Stages of Treatment	Activities and Progress
Early Stages of Therapy	▪ Establish safest and efficient diet consistency and liquid level (i.e.: thin, nectar, honey, or pudding thick). ▪ Establish patient specific safe swallow protocol and train the patient and/or caregiver(s) to use these compensatory strategies to improve swallow safety. ▪ Establish best positions and train the patient and/or caregiver(s) to use them. ▪ Exercises specific to the type of dysphagia (oral phase vs. pharyngeal phase) ▪ Stimulation techniques if appropriate for patient specific needs and responses. ▪ P.O. trials if appropriate ▪ Document response to treatment in measurable terms. ▪ Determine the need to modify the plan of care in terms of

	frequency, duration, and treatment plan based upon the patient's response to treatment. ▪ Determine the need to modify the dismissal criteria.
Ongoing Treatment	▪ Ongoing education and training for follow-through of patient specific safe swallow protocol with modifications to reflect the patient's response to treatment. ▪ Exercises specific to the type of dysphagia (oral phase vs. pharyngeal phase) ▪ Stimulation techniques if appropriate for patient specific needs and responses. ▪ P.O. trials if appropriate ▪ Document response to treatment in measurable terms and compare with baseline. ▪ Determine the need to modify the plan of care in terms of frequency, duration, and treatment plan based upon the patient's response to treatment. ▪ Determine the need to modify the dismissal criteria.
Later Stages of Treatment/Discharge Planning	▪ Ongoing education and training for follow-through of patient specific safe swallow protocol with modifications to reflect the patient's response to treatment. ▪ Exercises specific to the type of dysphagia (oral phase vs. pharyngeal phase) ▪ Stimulation techniques if appropriate for patient specific needs and responses. ▪ P.O. trials if appropriate ▪ Document response to treatment in measurable terms and compare with baseline. ▪ Determine the need to modify the plan of care in terms of frequency, duration, and treatment plan based upon the patient's response to treatment. ▪ Determine the need to modify the dismissal criteria.
Discharge Criteria	▪ Determine the need to modify the dismissal criteria. ▪ Establish a method for follow-up services should the individual experience any changes in swallow function that affects swallow safety. ▪ To determine discharge criteria or transition to an alternative treatment: ▪ Review the plan benefit language for specific benefit limits or restrictions ▪ End or transition when maximum potential has been reached; or ▪ When little or no progress has occurred for at least three weeks. ▪ Provide a method of follow-up services for individuals who have been discharged.

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

Referral Guidelines

- Consult a registered dietitian to determine nutrition and hydration needs.
- Referral to another specialty if clinical signs or symptoms of gastro-esophageal reflux or esophageal dysphagia are present
- Referral for an instrumental assessment of dysphagia (i.e., MBS, FEES) if clinical signs or symptoms of dysphagia present after performing a bedside/clinical swallowing evaluation.
- Refer HMO patients to Primary Care Physician to explore other alternatives; PPO patients may be referred to family physician or appropriate specialist(s).

Home Medical Equipment

- Suction equipment for saliva management
- Wedge or hospital bed for nocturnal saliva management or GERD

Self-Management Techniques

- Instruct the patient and/or caregiver(s) for safest diet consistency and liquid level.
- Provide a list of foods and/or liquids, which fall within the specified diet textures.
- Provide a list of foods/liquids to avoid.
- Provide written instructions for any compensatory safe swallow strategies necessary to increase swallow safety.
- Instruct patient to notify primary care physician and/or Speech-Language Pathologist should any changes occur in the swallow function that negatively affects the patient's swallow safety.

Alternatives to ST Management

- Consult with primary care physician regarding non-imaging and/or imaging findings.
- Provide patient and/or caregiver(s) education and training.
- Pharmacological intervention
- Surgery
- Customized oral devices

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Dysphagia (Swallowing Disorder) in Children

Synonyms

- Swallowing disorder
- Oral phase dysphagia
- Pharyngeal phase dysphagia
- Esophageal phase dysphagia.

Definition

Difficulty in swallowing. Dysphagia affects the ability to maintain adequate nutrition and hydration and may lead to dehydration and aspiration.

History

Goals of Complaint History

- Determine primary medical condition such as prematurity, anatomical or structural problems present at birth, failure to thrive vs. pediatric under nutrition, genetic conditions, metabolic disorders, brain injury, developmental disability, or psychosocial or behavioral issues that affect feeding or swallowing abilities.
- Identify co-morbidities that affect general management or which require medical management.
- Determine if trauma-related or congenital; determine nature and extent of event.

Presentation

Symptomatology

The table below contains some of the more common symptoms for the four phases of swallowing. Clinical judgment should be used to identify and react to case specific circumstances.

Clinical Symptoms	Functional Effects
▪ Abnormal tongue movement patterns in the first few days after birth ▪ Aspiration with coughing or choking during and after nursing/mealtimes ▪ Silent aspiration ▪ Pneumonia, recurring chest congestion after P.O. intake ▪ Difficulty sustaining adequate nutrition and hydration, lack of weight gain or weight loss ▪ Gastroesophageal reflux ▪ Apnea, bradycardia and cyanosis	▪ Prematurity

related to feeding	
▪ Poor management of secretions; drooling ▪ Feeding difficulties such as impaired sucking, poor oral motor skills or abnormalities in the oral phase, reduced or poor nutritional intake ▪ Difficulty taking oral medications ▪ Impaired pharyngeal motility of the bolus ▪ Aspiration with coughing or choking during and after nursing/mealtimes ▪ Silent aspiration ▪ Pneumonia, recurring chest congestion after P.O. intake ▪ Disruptive or maladaptive behavior at mealtime ▪ Difficulty sustaining adequate nutrition and hydration, lack of weight gain or weight loss ▪ Gastroesophageal reflux disease ▪ Transition difficulties from tube feedings to oral feedings	▪ Neurological related conditions such as cerebral palsy ▪ Developmental disability (generally associated with a progressive deterioration of the swallow function) ▪ Brain disorder
▪ Failure to thrive ▪ Growth during the first two to three years of life is affected due to inadequate nutrition (pediatric under nutrition) ▪ Oral motor dysfunction that may cause sucking, chewing, or swallowing difficulties ▪ Aspiration with coughing or choking during and after nursing/mealtimes ▪ Silent aspiration ▪ Pneumonia, recurring chest congestion after P.O. intake ▪ Disruptive or maladaptive behavior at mealtime ▪ Gastroesophageal reflux disease ▪ Transition difficulties from tube feedings to oral feedings	▪ Craniofacial anomalies such as cleft palate or mobius syndrome

Findings

Goal of Bedside Swallow Evaluation

To rule out dysphagia.

Scope of Initial Swallow Evaluation

- Obtain medical history from the child's medical records including a list of medications and medication schedules, interview the parents or caregiver.
- Consider the age of the child, related diagnosis, techniques and positioning used during feeding.
- Complete an oral peripheral evaluation to assess the integrity of the oral structures and the oral motor function of those structures.
- Assess the preparatory phase, oral phase and clinical signs of a pharyngeal phase disorder.
- Clinical judgments of the adequacy of airway protection and coordination of respiration and swallowing.
- Identify the presence and observe the characteristics of a dysphagia based on clinical signs and symptoms.
- Assessment of the effects of compensatory strategies such as altering bolus size and/or bolus delivery rate, alternating liquids and solids, and therapeutic postures or maneuvers on the swallow.
- The use of tools (such as cervical auscultation and pulse oximetry) may be used in the assessment process to detect and monitor clinical signs of dysphagia.
- Assess speech and vocal quality.

Results if dysphagia

- Consult with primary care physician on clinical findings and proceed as agreed by primary care physician.
- Determine appropriate referrals based upon clinical finding.
- Develop a plan of care based upon the child's medical history, prior level of function, current medical and nutritional status, date of onset, age, cognitive abilities, contributing behavioral and psychological factors, specific quality of life issues, and clinical findings.
- Establish long-term and short-term goals with functional and measurable outcomes.

ST Management

The following management will vary depending on the specific needs of the child.

- If the child is currently NPO (nothing presented by mouth), develop an appropriate plan of care with introduction of P.O. when appropriate.
- If oral feedings are appropriate, determine the least restrictive diet consistency and liquid level.
- Determine compensatory strategies to improve the safety and efficiency of P.O. intake, (such as positioning/posture, rate of intake, bolus amount, special devices and feeding implements, etc.)
- Educate and train the child, if age-appropriate, about swallowing and feeding disorders.
- Educate and train the child's parents, caregivers, and school teachers, if appropriate, about swallowing and feeding disorders.

- Educate and train the child and his/her family, caregivers, and school teachers, if appropriate, to follow-through with the child's specific safe swallow strategies.
- Provide written instructions to the child, his/her family, caregivers and school teachers, if appropriate, for safe swallow strategies.
- Oral motor exercises to improve oral motor control of the bolus and the voluntary stage of the swallow
- Address techniques for oral-defensiveness and educate the child, if age-appropriate, and the child's parents, caregivers and school teachers.
- Therapy to stimulate the swallow reflex.
- Exercises to increase adduction of tissues to improve airway protection.
- Document progress and modify the treatment plan to meet the needs of the child when indicated.
- Determine child specific dismissal criteria.

Treatment Plan Timeline

The frequency and duration of services is based upon the specific needs of the child at the time of the evaluation and the child's measurable response to treatment on a weekly basis. Discharge is recommended when the child has reached a plateau (i.e.: no qualitative gains made over a period of at least three weeks) is able to continue with a home management program, or maximum potential has been achieved.

Early Stages of Treatment	▪ Explore factors that could impact outcomes now and if progressive, the future ▪ Explore level of patient (if appropriate), and family understanding, challenges, and capabilities to develop appropriate education and training program ▪ Develop treatment program based on all facts, findings, and best practices for this patient ▪ As appropriate, develop an individualized supplemental home program to closely monitor and update as needed ▪ Document findings, techniques, and responses to treatment
Ongoing Treatment	▪ Provide patient/family ongoing education and training ▪ Assess response to and feedback from home program to modify and update ▪ Document measurable gains and modify plan of care if indicated ▪ Assess ongoing response to treatment, gains, lack of progress, other factors; modify program as needed ▪ Determine other factors impacting condition requiring intervention or referral (see referral guidelines)
Later Stage of Treatment/Discharge Planning	▪ Provide suggestions and resources for follow-up ▪ Provide home program to continue progress and/or maintain gains if appropriate ▪ Provide summary of course of treatment and progress ▪ If discharged due to medical issues and/or progressive nature of condition, indicate under what future conditions new referral would be warranted
Discharge Criteria	▪ Medical/psychological or other issues interfering with goals of treatment program ▪ Able to continue with a home management program

	▪ Goals have been reached ▪ Plateau has been reached ▪ Insurance benefit has ended
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Referral Guidelines to confirm dysphagia

- Consult a registered dietician/nutritionist to determine nutrition and hydration needs.
- Referral to another specialty if the child presents with:
 - Clinical signs or symptoms of gastroesophageal reflux or esophageal dysphagia are present.
 - Clinical signs or symptoms of disruptive or maladaptive behaviors at mealtimes.
- Referral for an instrumental assessment of dysphagia (i.e., modified barium swallow study or videofluoroscopy) if clinical signs or symptoms of dysphagia are present.
- Consult with Occupational Therapist for sensorimotor issues or assistance with positioning devices.
- Refer HMO patients to Primary Care Physician to explore other alternatives; PPO patients may be referred to family physician or appropriate specialist.

Home Medical Equipment

- Suction equipment for saliva management
- Positioning devices

Self-Management Techniques

- Instruct the child, parents, caregivers and/or school teachers for safest diet consistency and liquid level, positioning, and other modifications to improve swallow safety.
- Provide a list of foods and/or liquids, which fall within the specified diet consistency.
- Provide a list of foods and/or liquids to avoid.
- Provide written instructions for any compensatory safe swallow strategies necessary to increase swallow safety.
- Instruct the child, parents and/or caregiver in home exercise program for oral activities or oral desensitization techniques as needed.
- Instruct parent or caregiver to notify primary care physician and/or Speech-Language Pathologist should any changes occur in the swallow function that negatively affects the child's swallow safety

Alternatives to ST Management

- Consult with primary care physician regarding clinical findings.
- Provide the child, parents, caregivers and/or school teachers education and training.
- Drug therapy
- Surgery
- Customized oral devices

Medicare References:

1. Centers for Medicare & Medicaid Services (CMS), Medicare Benefit Policy Manual-Pub. 100-2: Chapter 15, Section 220, Covered Medical and Other Health Services, Conditions of Coverage and Payment Outpatient Physical Therapy, Occupational Therapy, or Speech-Language Pathology Services.
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Feeding Aversion

Definition

A patient with adequate feeding/swallowing abilities chooses to refuse oral consumption of food or liquids.

Presentation

Symptomatology	Possible consequence or cause
A feeding/swallowing evaluation reports swallowing abilities to be within normal limits, yet the patient refuses to consume appropriate foods/liquids for age and development	Premature Birth Previous placement of a Tracheotomy Gastroesophageal Reflux Disease (GERD) Sensory Disorders Developmental Delays Cardiac Disease Respiratory Difficulties History of dysphagia resulting in a fear of feeding/swallowing Food Allergies (including Celiac Disease)
Extreme gagging or Vomiting during or after meals	Gastroesophageal Reflux Disease (GERD) Sensory Disorders Attention seeking behavior Food Allergies (including Celiac Disease)
Behavior outbursts such as screaming, tantrums, or attempts to escape the feeding environment	
Low percentile for weight on the chart for the National Academy of Pediatrics	Prolonged status of inadequate caloric intake
Growth Deficiency	Prolonged status of inadequate caloric intake
Failure to Thrive	Caregiver abuse or neglect

Findings

Goals of a Feeding Aversion Evaluation

- Examination for possible causes or contributing factors to the complaint
 - A referral to appropriate medical professional if the patient presents with signs or symptoms of behavioral or physiological factors that impact the patient's swallowing/feeding status. Common diagnoses are Gastroesophageal Reflux Disease, Developmental Delays, Sensory Disorders, and Surgeries or procedures affecting swallowing such as a tracheotomy.

2. To determine how feeding aversion impacts the patient's ability to maintain adequate nutrition and hydration

Scope of a Feeding Aversion Evaluation

The evaluation and subsequent treatment must be conducted by an ASHA (American Speech-Language and Hearing Association) certified therapist

1. Case/Feeding History including reports from a team approach of family members, teachers, and medical professionals involved in the patient's care. Case history should also include if inadequate caloric intake was reported by a treating physician.
2. Observation of the patient eating and drinking with age appropriate or developmentally appropriate utensils. A narrative including strengths and weaknesses of the observed feeding/swallowing skills should be included.
3. Oral motor assessment including an assessment of muscles and structures needed for appropriate feeding/swallowing skills to determine if oral motor deficiencies are present
4. Home environment and current assessment of the patient's behavioral response specific to the presentation and acceptance of a bolus.
5. Description and quantity of all food and liquids the patient is reported to accept in the home environment.

Admission Criteria

If the caloric intake is not sufficient, the following factors should be considered

1. Oral Motor weakness or structural impairment
2. The following conditions may cause consistent loss of calories through vomiting: hydrocephalus, food allergies, Gastroesophageal Reflux Disease, or pyloric stenosis
3. The following conditions may cause muscle weakness: metabolic disorder, myopathy, lead intoxication or anemia

If the patient's caloric intake is sufficient, but growth deficiency is still evident, the following factors should be considered.

1. The following conditions should be considered as a cause of inadequate caloric absorption: Milk Protein Intolerance, Food allergies, Celiac disease, Cystic Fibrosis, Metabolic Disorder, Immunodeficiency, Inflammatory Bowel Disease, or parasitic infection.
2. The following conditions may require an increased caloric absorption: Congenital Heart Disease, Occult Urinary Tract Infection, Tuberculosis, Human Immunodeficiency Virus, Malignancy, Endocrinopathies, and Renal Tubular Acidosis

If caloric intake is sufficient, and growth is appropriate for development, one or more the following conditions must be present for approval of feeding/swallowing therapy

1. The patient is participating in a G-tube weaning program
2. The patient is at risk for placement of a G-tube secondary to falling below the 10th percentile on the Growth Chart for the National Academy of Pediatrics.
3. The patient is unable to sustain appropriate hydration and or nutrition as evidenced by current placement of a G tube or other source of alternate nutrition or documentation of inadequate caloric intake

Management

Management of this condition will vary depending upon the patient's individual need.

1. Development of a treatment plan to increase the types, textures, and amounts of food and liquids accepted by the patient.
2. Development of age appropriate feeding skills in the least restrictive environment possible.
3. Behavior and sensory modification techniques to extinguish unwanted responses to oral consumption of the bolus.
4. Team collaboration between a variety of disciplines including Occupational Therapist, Behavioral Therapist, Nutritionist/Dietician, teachers and paraprofessionals, primary care physician, Audiologist, and Gastroenterologist, and other treating physicians.
5. Extensive caregiver training and carryover into the patient's daily living activities

Continuation of Treatment

The following requirements must be documented in the evaluation or progress report in order for treatment to continue

1. Consult a registered dietician/nutritionist to determine nutrition and hydration needs.
2. Functional progress towards reasonable goals must be clearly documented at least every 30 days.

Discharge Criteria

1. The patient has acquired age appropriate feeding/swallowing skills
2. The patient has not shown progress towards reasonable goals, and has reached a plateau.
3. Caregivers are able to independently carryover the treatment plan in the home environment to support continued progress.
4. The goals do not require the skills of a skilled speech language therapist.
Example: The patient will remain at the table during a meal. The patient will allow novel foods on his plate. The patient will touch an unfamiliar food. Goals that can be implemented and carried out by a caregiver are not considered medically necessary.
5. The goals are duplicative in a nature to another therapist's current treatment plan (typically Occupational therapist).

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Fluency Disorder

Related Terms^{5,6,8,9,10,11}

- Fluency disorder
- Disfluency
- Stuttering
- Cluttering
- Dysfluency
- Stammering

Definitions

- Fluency Disorder: A fluency disorder is a “speech disorder” characterized by deviations in continuity, smoothness, rhythm, and/or effort with which phonologic, lexical, morphologic, and/or syntactic language units are spoken.
- “Disorders in the rhythm of speech, in which the individual knows precisely what he wishes to say, but at the same time is unable to say it because is an involuntary, repetitive prolongation or cessation of a sound.”⁸
- “Stuttering is a communication disorder characterized by excessive involuntary disruptions in the smooth and rhythmic flow of speech, particularly when such disruptions consist of repetitions or prolongations of a sound or syllable, and when they are accompanied by emotions such as fear and anxiety, and behaviors such as avoidance and struggle.
- Stuttering is a “temporary overt or covert loss of control of the ability to move forward fluently in the execution of linguistically formulated speech.”¹⁰
- “Cluttering is a fluency disorder with underlying language and thought-organization disabilities.”¹¹

History

Goals of Complaint History

- Identify co-morbidities that affect general management or which require medical management.
- Determine if trauma-related or congenital; determine nature and extent of event.
- Determine primary medical condition, (cerebral vascular accident, traumatic brain injury, or other neurological event or disease process.)

Presentation^{3,4,5,7,11,15}

Symptomatology

The table below contains some of the more common symptoms. Clinical judgment should be used to identify and react to case specific circumstances.

Clinical Symptoms	Functional Effects
▪ Multiple part-word repetitions-repeating the first letter or syllable of a words, such as “t-t-t-table” or “ta-ta-ta-table” ▪ Prolongations-stretching out a sounds, such as rrr-abbit ▪ Schwa vowel-Use of the weak (“uh”) vowel. For example, instead of saying “bay-bay-bay-baybe” the client substitutes “buh-buh-buh-baby.” ▪ Struggle and tension-the client struggles and forces in the attempt to say a word. ▪ Pitch and loudness rise- As the client repeats and prolongs sounds, part words, whole words or whole phrases the pitch and loudness of his or her voice may increase. ▪ Tremors-Uncontrolled quivering of the lips or tongue may occur as the client repeats or prolongs sounds or syllables. ▪ Avoidance-An unusual number of pauses; substitutions of words; interjection of extraneous sounds, words or phrases; avoidance of talking ▪ Fear- As the client approaches a sound that gives him or her trouble, he or she may display an expression of fear. ▪ Habitual eye closure, rolling, or glazing during dysfluencies ▪ Avoidance of speaking situations, words, or sounds ▪ Fear of speaking ▪ Difficulty in starting or sustaining airflow or voicing speech- This is heard most often when the client begins sentences or phrases. Breathing may be irregular and speech may occur in spurts as the client struggles to keep the voice “on”. ▪ Rapid Speaking Rate ▪ Overarticulation ▪ Inappropriate word segmentation ▪ Excessively dysrhythmic or monotone speech ▪ Excessively garbled or ungrammatical syntax ▪ Insertion of a very high number of inappropriate words or sounds ▪ Excessive number of whole word or phrase repetitions ▪ Poorly organized thinking (speaks before clarifying thoughts)	▪ Child may not follow the typical development or acquisition of speech sounds. ▪ Client may incorrectly be assumed to be resistant or stubborn due to stuttering symptoms. Client has difficulty expressing needs, wants, thoughts, and ideas. Frustration on the part of the child and the parent may manifest. ▪ Listeners have difficulty understanding the message. ▪ The pressure of having to produce a grammatically complex sentence using words that are difficult to produce ▪ Struggling when speaking or attempting to speak due to difficulty coordinating respiration, phonation and articulation ▪ Speech production becomes more unintelligible in stressful situations and during periods of anxiousness. Speech production becomes more stressful as familiarity with communication partners and situations become more demanding. ▪ Modification of complexity of expressive language to avoid high-stress speech demands ▪ Cluttering Component may be present

- | | |
|---|--|
| <ul style="list-style-type: none">▪ Short attention span and poor concentration▪ Lack of complete awareness of the problem | |
|---|--|

Findings

Goal of Fluency Disorder Evaluation

- Rule out other possible causes
 - Muscle weakness or paralysis of oral musculature or speech mechanism, phonological or articulation disorder
- Identify strengths, weaknesses, severity level, secondary characteristics, and any contributing factors that may be affecting communication.
- The evaluation process may include the selection and administration of standardized tests, portions of standardized test, and/or non-standardized tests.
- Determine the need for mental health management to prepare client for ST treatment and/or enhance ST fluency treatment.

Components of Fluency Disorder Evaluation^{1,14,17,18,19,20,21}

The evaluation process may include the selection and the administration of standardized tests, portions of standardized tests, non-standardized tests and speech samples.

- Obtain medical history from the individual's medical records, interview the individual if age-appropriate, and interview the individual's family members, teachers, coworkers, employers, friends, caregiver or guardian to determine the effect of fluency disorder on communication interactions. Identify family history of fluency disorders in blood relatives.
- Obtain the individual's speech, language and educational history.
- Identify any cultural or linguistic differences and any behavioral factors that may be contributing to the breakdown in functional communication.
- Hearing history, audiological screening and/or assessment if needed.
- Assessment of the oral mechanism
 - Muscle function of the jaw, lips and tongue and the integrity of the oral structures (hard and soft palate, jaw, lips and tongue).
- Articulation/phonology tests
- Receptive and Expressive Language Tests
- Pragmatic Tests
- Standardized Tests of Stuttering
- Self-Rating Forms to determine the patients speech-language planning and production experience and assessment of patient's emotional reactivity and emotion regulation to stuttering
- Direct Observation and description of the person's speech and language in structured as well as natural conversational environment

- Obtain Speech Samples for Contextual vs. Noncontextual Speech, Speaking vs. Reading (nonreaders may be substituted with structured verbal tasks such as picture or object description).
- Analysis of accessory behaviors (verbal interjections, eyebrow raising, eye blinking, rolling, closure, head/jaw jerking and/or hand/arm movement).
- Identification of the locus of tension; upper chest and torso, the laryngeal area, articulators in the mouth and facial area, particularly the jaw).
- Inventory of stuttering events (core behaviors: sound/syllable repetition, whole-word repetition, phrase or sentence repetition, sound prolongation, inaudible prolongations or blocks).
- Objective data collection for stuttering words per minute (SW/M) and speaking rate.
- Video recording to capture and document verbal and nonverbal components of a fluency disorder.

Results if Fluency Disorder^{1,2,11}

- Determine an appropriate plan of care based upon the individual's medical history, cultural and linguistic differences and functional impact.
- Interpret the clinical findings of the fluency disorder evaluation that will include:
 - A clinical diagnosis of fluency disorder based upon a combination of characteristics identified during the assessment process.
 - Stuttering is considered abnormal to the extent that it handicaps an individual's ability to fluently communicate effectively and efficiently during all possible speaking environments.
 - Cluttering may be combined with stuttering and contribute to slower progress and less favorable outcomes due to the underlying language issues and general poor awareness of speech errors.
 - Determine the needs and abilities of the individual, family concerns, parental concerns, impact of stuttering on emotional health and functional ability to communicate ideas across all environments. Determine potential for attitudinal, compensatory and functional improvement within a reasonable time frame.

ST Management^{4,11,12,13,15,16,22,23,24}

(The following management will vary depending on the specific needs of the individual.)

- Develop an individual program designed to address the complex interaction of language, speech, emotional reactivity, observable stuttering, covert stuttering behaviors reported by client and relevant individuals.
- Develop an individual program designed to address symptoms and secondary characteristics of stuttering.
- Develop a treatment plan that emphasizes implementation of strategies in a variety of communication situations within his/her home, school and/or community.

- Provide family members, caregivers, guardian, siblings, school teachers and/or other communication partners training in communication techniques and strategies to facilitate effective communication.
- Provide individuals and parents with information regarding community support groups and/or programs.
- Continue to assess the individual because symptoms will change over time.
- Cluttering symptoms are best treated using kinesthetic and proprioceptive techniques.
- Select and implement appropriate equipment and computer software to communicate effectively and efficiently in a variety of communication situations within his/her home, school and/or community. Altered Auditory Feedback (AAF) including delay (DAF) and pitch shift (FAF) to achieve effective communication in a variety of situations is an effective treatment option.
- Treatment intensity is variable and may include intense outpatient or inpatient residential programs.
- Provide suggestions and resources for follow-up
- Provide home program to continue to progress and/or to maintain gains
- If discharged due to medical issues and/or plateau in progress, indicate under what future conditions a new referral would be warranted

Documentation

- Provide summary of course of treatment and progress
- Notes for each encounter to include type of treatment and patient's response to it.
- Show measurable progress toward goals and reason not attained such as: fluctuations in abilities and/or motivation.
- Show evidence that education was provided and response to it
- Include attainment, updates or changes in short or long-term goals and/or changes in intensity or type of treatment.

Referral Guidelines for Fluency Disorder

If improvement does not meet the above guidelines or improvement has reached a plateau:

- Refer HMO patients to Primary Care Physician to explore other alternatives; PPO patients may be referred to family physician or appropriate specialist.
- Consult with a mental health specialist for treatment of depression or other mental health issues which may reduce or prevent ST management.
- Referral to local support groups both during treatment and after treatment for long term practice and support.

Home Medical Equipment

- Altered Auditory Feedback (AAF) including delay (DAF) and pitch shift (FAF) device to achieve effective communication in a variety of situations.

Self-Management Techniques

- Individual and/or parents to follow home therapy program.

Alternatives to ST Management

- Mental health management to prepare the client for subsequent speech pathology treatment.

Treatment Plan Timeline

Frequency and duration of services is based upon specific needs of the individual at the time of the evaluation. Individuals with fluency disorder tend to have periods where they plateau then will go on to make functional improvements. In addition, the symptoms will change over time. Therefore, discharge planning will involve consideration of maximum potential achieved and the individual family circumstances.

Discharge Criteria

- Medical/psychological or other issues interfering with goals of treatment program
- Able to continue with a home management or other supplemental program
- Goals have been reached, no further intervention indicated
- Insurance benefit has ended
- Non-response to treatment justifies discharge
- Patient is at functional levels in all aspects of disorder

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

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Hearing Screening

Hearing screening will be provided to children or adults during the initial Speech and Language Evaluation unless results of a comprehensive audiologic assessment completed within a month of the initial speech language evaluation have been received by the provider. Follow up hearing screening is mandated when progress has not been achieved or is minimal and evidence suggests risk for hearing impairment affecting body structure/function, activities, or participation.

Clinical Process

These screening services are limited to pure-tone air conduction screening for initial identification and/or referral purposes. These are pass/fail procedures to identify individuals who require referral for further audiologic assessment or other professional and/or medical services.

Screening for hearing impairment consists of pure tones presented via earphones at 1000, 2000, and 4000 Hz at 20 dB HL for children (ages 3–18) via conventional or conditioned play audiometry, and at 25 dB HL for adults.

- Patients/clients who do not respond at any frequency in either ear are rescreened.
- Patients/clients who fail the original screening or rescreen are referred to an audiologist for an audiologic evaluation.

Individuals Providing Service

The hearing screening is conducted by appropriately credentialed and trained speech-language pathologists, possibly supported by speech-language pathology assistants under appropriate supervision.

Hearing screening identifies those persons who are likely to have hearing impairments or disorders that may interfere with body function/structure and/or activity/participation as defined by the World Health Organization (WHO) (see *Fundamental Components and Guiding Principles*).

Screening may result in recommendations for rescreening, or referral for comprehensive audiologic assessment or other medical examinations or services.

Risk Indicators Associated with Hearing Loss in Childhood

The following are risk indicators that are associated with **permanent congenital, delayed-onset, or progressive hearing loss in childhood**. Risk indicators that are marked with an asterisk “*” are of greater concern for delayed-onset hearing loss.

1. Caregiver concern* regarding hearing, speech, language, or developmental delay.

2. Family history* of permanent childhood hearing loss.
3. Neonatal intensive care of more than 5 days or any of the following regardless of length of stay: ECMO,* assisted ventilation, exposure to ototoxic medications (Gentamycin and Tobramycin) or loop diuretics (Furosemide/Lasix), and hyperbilirubinemia that requires exchange transfusion.
4. In utero infections, such as Cytomegalovirus (CMV*), Zika Virus, herpes, rubella, syphilis, and toxoplasmosis.
5. Craniofacial anomalies, including those that involve the pinna, ear canal, ear tags, ear pits, and temporal bone anomalies.
6. Physical findings, such as white forelock, associated with a syndrome known to include a sensorineural or permanent conductive hearing loss.
7. Syndromes associated with hearing loss or progressive or late-onset hearing loss,* such as neurofibromatosis, osteopetrosis, and Usher syndrome; other frequently identified syndromes include Waardenburg, Alport, Pendred, and Jervell and Lange-Nielson.
8. Neurodegenerative disorders,* such as Hunter syndrome, or sensory motor neuropathies, such as Friedreich ataxia and Charcot-Marie-Tooth syndrome.
9. Culture-positive postnatal infections associated with sensorineural hearing loss,* including confirmed bacterial and viral (especially herpes viruses and varicella) meningitis.
10. Head trauma, especially basal skull/temporal bone fracture* that requires hospitalization.
11. Chemotherapy.*

Setting

Screening is conducted in a clinical or natural environment conducive to obtaining valid screening results. Settings for screening may include hospitals, clinics, schools, homes, or hospice facilities. Ambient noise levels may not always meet ANSI standards for pure-tone threshold testing but are sufficiently low to allow accurate screening.

Equipment

All equipment is used and maintained in accordance with the manufacturer's specifications. Electroacoustic equipment meets ANSI and manufacturer's specifications.

Documentation

Documentation includes a statement of identifying information, screening results, and recommendations, indicating the need for rescreening, assessment, or referral within

the initial speech language evaluation. If a rescreening is mandated during treatment services then the documentation will be within the progress report.

Results of screening are reported to the individual and family/caregivers, as appropriate. Reports are distributed to referral source and other professionals when appropriate and with written consent.

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Pediatric Spoken Language Evaluation

Definition

A comprehensive spoken language evaluation assesses speech, language, cognitive-communication in children, including identification of impairments, associated activity and participation limitations, and context barriers and facilitators.

Criteria for Evaluation

“Children of all ages are eligible for speech-language pathology assessment when their ability to communicate effectively is reduced or impaired or when there is reason to believe (e.g., risk factors) that treatment would prevent the development of a speech, language, or communication, reduce the degree of impairment; lead to improved functional communication or prevent the decline of communication.”

Eligibility for evaluation is indicated if one or more of these factors are present:

1. Referral from the individual, family member, audiologist, physician, teacher, other speech-language pathologist, or interdisciplinary team because of a suspected speech, language, or communication, disorder.
2. Failure to pass a screening assessment for communication and/or swallowing function.
3. The individual is unable to communicate functionally across environments and communication partners.
4. The individual's communication abilities are not comparable to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
5. The individual's communication skills negatively affect health, safety, social or vocational status.
6. The individual, family, and/or guardian seek services to achieve and/or maintain functional communication (including alternative and augmentative means of communication).

Provider Requirements

A speech-language pathologist (SLP) has a master's or doctoral degree and is licensed, if applicable, as a speech-language pathologist by the state in which he or she is practicing. The SLP possesses a Certificate of Clinical Competence (CCC) from ASHA or has met all the educational requirements leading to the CCC, and is in the clinical fellowship (CF) year or is otherwise eligible for the CCC.

- Licensed and provisionally licensed speech-language pathologists; and

- Home health agencies that employ or contract with licensed speech-language pathologists.

Speech-Language evaluations may not be performed by speech language therapy assistants

Evaluation Tests

- Standardized for a specific disorder identified; or
- Consist of a standardized caregiver report format; or
- Composed of professionally acceptable therapeutic observational techniques utilizing a formalized
- Checklist or observational tools
- Age equivalent score reporting does not report a standard score and is not an acceptable evaluation test.

COMMONLY USED ASSESSMENT TOOLS FOR LANGUAGE			
Blue = Global Lang			
LANGUAGE TEST	FOR	DESCRIPTION	Average
Clinical Evaluation of Language Fundamentals (CELF-4)	6.0-21.1	Identifies deficits in content and form that characterize mature language use (semantics,morphology,syntax,memory)	86-114
Fundamentals -Preschool (CELF-P2)	3.0-6.11	Used to identify, diagnose, and perform follow up evaluations of language deficits in preschool children	86-114
Behavior Scales (CSBS) - Non verbal	9 mo-2 yr	Examines communicative, social, affective and symbolic communicative abilities	TBD
Communication and Symbolic Behavior Scales Developmental Profile (CSBS-DP)	6mo-6yr	Determines communicative competence (use of eye gaze, gestures, sounds, words, understanding, play) for children 6 months-24 months	TBD
Comprehensive Assessment of Spoken Language (CASL)	3.0-21.0	Oral language assessment, measures language processing skills, comprehension, expression, and retrieval: Lexical/Semantic, Syntactic,and Pragmatic	85-115
(EOWPVT) Expressive One Word Picture Vocabulary Test (English/Spanish)	2.0-18.11	Measures expressive vocabulary. Assessed by naming objects,actions, and concepts of illustrated pictures. Provides information on speech defects, learning disorders, auditory processing, English fluency of a bilingual child, Auditory-visual-verbal association ability	85-115
Oral and Written Language Scales (OWLS)	3.0-21.0	Assesses receptive and expressive language. Determines broad levels of language skills as well as listening, speaking and writing	85-115
Preschool Language Scale-4th Edition or 5th Edition (PLS 4 or 5) 5th is English & Spanish	birth to 6	Assesses receptive/expressive language with manipulatives	85-115
Peabody Picture Vocabulary Test (PPVT)	2.5-30+	Measures receptive vocabulary	85-115
Receptive-Expressive Emergent Language test (REEL-3)	Infant-3yr	Identifies infants and toddlers with language delays and/or differences between receptive & expressive language skills through caregiver report and clinical observation	90-110
(ROWPVT) Receptive One Word Picture Vocabulary Test	2.0-11.11	Assesses child's single word vocabulary	85-115
(ROWPVT) Receptive One Word Picture Vocabulary Test -Spanish	2.0-11.11	Assesses child's single word vocabulary	85-115
The Rosetti Infant Toddler Scale of Language-3rd Edition (TACL-3)	2.0-11.11	& expressive language skills using manipulatives, observation of play behaviors & parent report	Subtests 7-13 Total 85-115
Test of Early language Development (TELD-3)	2.0--7.11	Assesses receptive, expressive, and overall spoken language in young preschoolers - 2nd grade	85-115
Test of Language Development-Primary 4th Edition (TOLD-P:4)	4.0-8.11	Measures Expressive and Receptive Language in young adolescents	85-115
Intermediate 4th Edition (TOLD I:4)	8.0-12.11	Measures Expressive and Receptive Language in older adolescents	85-115

COMMONLY USED INFORMAL ASSESSMENT TOOLS

INFORMAL ASSESSMENTS	FOR AGES	DESCRIPTION
Assessment of Social and Communication Skills for Children with Autism-R (ABLLS-R)	2.0-21.0	Ascertains a student's ability to respond, attend to environmental stimuli, generalize information, and spontaneously use language and learning skills.
Children's Communication Checklist-2 (CCC-2)	5.0-17.0	Rates aspects of communication such as speech, vocabulary, sentence structure, and social language skills of children and adolescents who speak in sentences. Identifies pragmatic language impairment.
Clinical Evaluation of Language Fundamentals (CELF-4) – Pragmatics Checklist	3.0-21.0	Assesses pragmatics (form, content and use) and the interrelated domains of receptive and expressive language.
Communication and Symbolic Behavior Scales Developmental Profile	0.6-6.0	norm-referenced screening and evaluation tool that measures the communicative competence (use of eye gaze, gestures, sounds, words, understanding, and play) of children with a functional communication age of 6 to 24 months and a chronological age of 6 months to 6 years.
Functional Communication Profile- Revised (FCP-R)	2.0-5.11	Evaluates sensory-motor skills, attentiveness, receptive and expressive language, pragmatic/social language, speech, voice, oral fluency and nonverbal communication.
Test of Early Communication and Emerging Language (TECEL)	2 wks- 2.0	Used to assess and chart communication and language strengths and weaknesses and design intervention plans and to make estimates about future language development.

COMMONLY USED ASSESSMENT TOOLS FOR ARTICULATION

SPEECH TESTS	FOR	DESCRIPTION	Average
Clinical Assessment of Articulation and Phonology (CAAP)	2.6-8.11	Assesses articulation and phonology in preschool and school age children	85-115
Comprehensive Test of Phonological Awareness (CTOPP)	5.0-24.0	Assesses phonological awareness, phonological memory, and rapid naming	Subtests 7-13 Total 85-115
Goldman Fristoe Test of Articulation (GFTA-2)	2.0-21.11	Measures articulation of consonant sounds for children and young adults	85-115
Hodson Assessment of Phonological Patterns	2.0-8.0	Analyzes phonological deviations of children with highly unintelligible speech.	85-115
Kaufman Speech Praxis Test for Children (KSPT)	2.0-5.11	Assists in diagnosis and treatment of developmental apraxia of speech.	85-115
Photo Articulation Test- 3rd Edition (PAT-3)	3.0-8.11	Measures articulation errors in speech sounds	TBD

Goal of Speech Language Evaluation

These evaluations determine the child's level of function and competencies through therapeutic observation and standardized testing measures appropriate to speech and language limitation and specific to the therapeutic services required.

Comprehensive speech-language assessment is conducted to identify and describe

- underlying strengths and weaknesses related to speech, language, and cognitive factors that affect communication performance. Differential diagnosis should include the following
- effects of speech, language, and cognitive-communication on the individual's activities (capacity and performance in contexts) and participation;

- contextual factors that serve as barriers to or facilitators of successful communication and participation for individuals with speech, language, and cognitive-communication impairments.
- the accurate differential diagnosis between communication disorders and normal linguistic variations (from life experiences, including bilingual/multilingual backgrounds),

Comprehensive speech-language may result in the following:

- Diagnosis of a speech, language, cognitive-communication delay or disorder.
- Clinical description of the characteristics of speech, language, cognitive-communication delay or disorder
- Identification of a communication difference, possibly co-occurring with a speech, language, and cognitive-communication disorder or delay. Determine if speech and language patterns are the result of a normal phenomenon of dual language acquisition or are the result of a communication disorder
- Prognosis for change (in the individual or relevant contexts).
- Recommendations for intervention and support.
- Identification of the effectiveness of intervention and supports.
- Referral for other assessments or services.

Clinical Process

Assessment may be static (i.e., using procedures designed to describe current levels of functioning within relevant domains) and/or dynamic (i.e., using hypothesis testing procedures to identify potentially successful intervention and support procedures) and includes the following:

- Relevant case history, including medical status, education, and socioeconomic, cultural, and linguistic backgrounds.
- Review of auditory, visual, motor, and cognitive status.
- Patient/client and family interview.
- Standardized and/or nonstandardized measures of specific aspects of speech, spoken and nonspoken language, and cognitive-communication.
- Analysis of associated medical, behavioral, environmental, educational, and social factors.
- Identification of potential for effective intervention strategies and compensations;
- Selection of standardized measures for speech, language, and/or cognitive-communication with consideration for documented ecological validity.
- Follow-up services to monitor communication status and ensure appropriate intervention and support for individuals with identified speech, language, and cognitive-communication disorders.

Scope of Speech Language Evaluation

Assessment typically includes the following, with consideration made for the age and linguistic development of the child:

- **Relevant case history, including**
 - o birth and medical history;
 - o family history of speech, language, reading, or academic difficulties;
 - o family's concerns about the child's language (and speech),
 - o languages and/or dialects used in the home, including
 - age and manner of acquisition of the language(s),
 - dialect of the language used,
 - language of choice with peers,
 - progress in receiving English as a second language (ESL) services or adult English language learning classes,
 - academic performance in each language,
 - circumstances in which each language is used;
 - o teachers' concerns regarding the impact of child's language difficulties in the classroom;
- **Hearing screening, if audiologic evaluation, dated within the previous year, not available;**
- **Oral mechanism examination;**
 - o muscle development of the jaw, lips and tongue and the integrity of the oral structures (hard and soft palate, jaw, maxilla, lips and tongue).
 - o Oral motor reflexes as well as purposeful movement through imitation of non-speech actions.
 - o Diadokokinetic rate: muscle movement for coordination and sequencing a repetitive string of sounds rapidly (i.e., puh, tuh, kuh or buttercup).
- **Respiratory examination;**
 - o Duration and control of inhalation and exhalation,
 - o Coordination of expiration with speaking.
- **Subjective judgment of function for voice and fluency**
 - o Voice pitch, quality, resonance and volume,
 - o Fluency of speech production.
- **Administer spoken language testing using standardized tests and/or professionally acceptable therapeutic observational techniques utilizing a formalized checklist or observational tools. When evaluating bilingual children use culturally and linguistically adapted test equivalents in both languages to compare potential deficits.**
 - o phonology at word level through conversation, including identification of phonological processes, apraxia or dysarthria and phonological awareness,
 - o Receptive and expressive language skills, including
 - semantics,
 - morphology,
 - syntax,

- pragmatics, including discourse-level language skills (conversation, narrative, expository).
- Literacy, if chronologically and/or functionally appropriate when a language learning disorder is present.
- **Analysis of Results**
 - o Interpret the clinical findings of the speech/language evaluation. If the performance measure falls more than 1 standard deviation below the mean for their primary language on one or more standardized spoken language test, a child may be diagnosed with a speech or language disorder.
 - o Determine the needs and abilities of the child, parental concerns and the potential for functional improvement within a reasonable time frame,
 - o Determine an appropriate plan of care based upon the child's medical history, cultural and linguistic differences, analysis of test results and functional impact,
- **Plan of Care development**
 - o Develop an individual program designed to address the child's immediate communication needs so that the child may participate in a variety of communication situations within his/her home, school and/or community. Utilize the communication strengths of the child and the expectations of the family when developing this program.
 - State the types of therapy to be provided (articulation, phonological processes, receptive language, expressive language, pragmatics, etc)
 - Develop objective, achievable and measureable long and short term goals targeting delayed or disordered skills identified through analysis of test results.
 - Provide a baseline measure for each short term goal presented.
 - emphasize practice and repetition to ensure acquisition of new sounds, syllables and words which can be enhanced with tactile, kinesthetic, auditory and visual prompts.
 - o Develop a home program to facilitate carry-over of skills learned in treatment to all environments in the child's world
 - o Provide family members, caregivers, guardian, siblings, educators and/or other communication partners training in communication techniques and strategies to facilitate effective communication with child including recognition and acknowledgement of the child's communication attempts and identify and respond appropriately to the child's communicative attempts.
 - o Provide parents with information regarding community support groups and/or programs.
 - o Continue to dynamically assess the child each session and formally re-test once a year because symptoms will change over time.
 - o Select and implement appropriate Augmentative or Alternative Communication system for those children with significant speech and/or language difficulties.

Outcomes

Assessment is conducted to identify and describe —

- underlying strengths and weaknesses related to factors that affect communication performance such as play, pre-speech, babbling, jargon, early words and sentences, and communicative intent;
- effects of preschool communication impairments on the infant's/toddler's activities (capacity and performance in everyday communication contexts) and participation; such as day care and family/caretaker interaction;
- contextual factors that serve as barriers to or facilitators of successful communication and participation for infants/toddlers with communication development risks.

Assessment may result in the following:

- Diagnosis of a communication disorder or high risk of developmental difficulties.
- Identification of a communication difference.
- Clinical description of the characteristics of the current level of communication development and/or impairment.
- Prognosis for change (in the infant/toddler and/or relevant contexts).
- Recommendations for intervention and support.
- Identification of the effectiveness of intervention and supports.
- Referral for other assessments (e.g., swallowing and feeding) or services.

Documentation

The initial assessment establishes the baseline data necessary for evaluating expected habilitation or rehabilitation potential, setting realistic goals, and measuring communication status at periodic intervals. It should include objective or subjective baseline diagnostic testing (standardized or non-standardized), interpretation of test results, and clinical findings. If baseline testing cannot be accomplished for any reason, this should be noted in the initial assessment or progress notes, along with the reason(s). Reassessments are appropriate when the patient exhibits a change in functional speech and language communication skills.

Documentation includes pertinent background information, assessment results and interpretation, prognosis, and recommendations, and indicates the need for further assessment, follow-up, or referral. When intervention services are recommended, information is provided concerning frequency, estimated duration, and type of service (e.g., individual, group, home program).

Documentation addresses the type and severity of the communication impairment, or risks of impaired communication development, and associated conditions (e.g., medical diagnoses).

Documentation includes summaries of previous services in accordance with all relevant legal and agency guidelines.

Speech-language pathologists prepare, sign, and maintain documentation that describes the professional service. Pertinent background information, results and interpretation, prognosis, and recommendations should be included. Recommendations may include the need for further assessment, follow-up, or referral. When intervention is recommended, frequency, estimated duration, and type of service (e.g., individual, group) must be specified. Documentation should include:

- findings of the speech-language evaluation
- objective and subjective measurements of functioning
- short-term and long-term measurable goals, with expectations for progress
- expected frequency of treatment
- reasonable estimate of the time needed to reach the goals
- Expected Rehabilitation Potential.

References:

1. American Speech-Language-Hearing Association. (1990). The roles of speech-language pathologists in service delivery to infants, toddlers, and their families. *Asha*, 32(Suppl. 2), 4.
2. American Speech-Language-Hearing Association. (1991). Guidelines for speech-language pathologists serving persons with language, sociocommunication, and/or cognitive-communication impairments. *Asha*, 33(Suppl. 5), 21–28.
3. American Speech-Language-Hearing Association. (2000). *Guidelines for roles and responsibilities for the school-based speech-language pathologist*. Rockville, MD: Author.
4. American Speech-Language-Hearing Association. (2001). Roles and responsibilities of speech-language pathologists with respect to reading and writing in children and adolescents (position statement, executive summary of guidelines, technical report). In *ASHA Supplement 21* (pp. 17–28). Rockville, MD: Author.
5. American Speech-Language-Hearing Association. (2002). Knowledge and skills needed by speech-language pathologists providing services to individuals with swallowing and/or feeding disorders. *ASHA Supplement 22*, 81–87.
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7. American Speech-Language-Hearing Association. (2002). Roles of speech-language pathologists in swallowing and feeding disorders: Position statement. *ASHA Supplement 22*, 73.
8. American Speech-Language-Hearing Association. (2004). Admission/discharge criteria in speech-language pathology. *ASHA Supplement 24*, 65–70.

9. American Speech-Language-Hearing Association. (2004). Knowledge and skills needed by speech-language pathologists providing services to individuals with cognitive-communication disorders. Available from <http://www.asha.org/policy>.
10. American Speech-Language-Hearing Association. (2004). Roles of speech-language pathologists in the identification, diagnosis, and treatment of individuals with cognitive-communication disorders: Position statement. Available from <http://www.asha.org/policy>.
11. World Health Organization. (2001). *International classification of functioning, disability and health*. Geneva, Switzerland: Author.

Tongue Thrust: Orofacial Myofunctional Disorder

Related Terms

- Abnormal tongue fronting
- Frontal Lisp
- Reverse Swallow
- Immature Swallow

Definition

A pattern involving oral and/orofacial musculature that interferes with normal growth, development, or function of structures through inappropriate or excessive lingual contacts against or between the teeth at rest or during vegetative or communicative functions. It may have a negative effect on the development of the dentition, particularly dental eruption patterns and/or alignment of the teeth and jaws. Speech patterns may become distorted or misarticulated. Parafunctional habit patterns may have a negative influence on the functioning of the temporomandibular joint

Presentation

- A disorder of tongue and lip posture and movement. Speech misarticulations can co-occur with this condition in some patients. Chewing and swallowing skills may also be affected.
- it is often difficult to correct the speech problems through traditional speech therapy.
- Orofacial myofunctional disorders may result from the following:
 - Improper oral habits such as thumb or finger sucking, cheek/nail biting, tooth clenching/grinding.
 - Restricted nasal airway due to enlarged tonsils/adenoids and/or allergies.
 - Structural or physiological abnormalities such as a short lingual frenum (tongue-tie) or abnormally large tongue.
 - Neurological or developmental abnormalities.
 - Hereditary predisposition to some of the above factors.

History

Goals of Complaint History

- Identify possible structural and/or functional co-morbidities which require medical management such as enlarged tonsils and/or adenoids, allergies and craniofacial abnormalities.
- Identify possible functional co-morbidities that can impede progress of intervention such as developmental abnormalities and/or improper oral habits.

- Determine if speech production is impacted.
- Determine if swallowing performance is impacted.

Symptomatology

Symptoms of tongue thrust in children of 4-7 years may benefit from an evaluation with preventative measures prescribed. Children of 8 years through adults benefit from intervention services when their ability to communicate and swallow effectively is impaired because of an orofacial myofunctional disorder and when there is a reasonable expectation of benefit to the individual in body structure/function and/or activity/participation.

Clinical Symptoms	Functional Effects
Tongue protruding between or against the upper and/or lower incisors.	Results in misalignment of teeth, which may return after orthodontic treatment. Also, may have a negative influence on the functioning of the temporomandibular joint
Frequent open-mouth resting posture with the lips parted.	Tongue does not rest with hard palate often causing maxillary insufficiency.
Imprecise, distorted speech sounds	A frontal lisp during production of speech. The /s/ sound is the most noticed speech error; others are /z/, /sh/, /ch/, /j/, /d/, /t/, /n/, /l/ and /r/.
Chewing of solid food with lips open, taking large bites and swallowing without completely chewing the food.	Loss of food particles from mouth, noisy chewing and swallowing (smacking and gulping) and upset stomach from swallowing too much air.

Scope of Myofacial/Tongue Thrust Evaluation

- Obtain medical history from the child's medical records, interview the child if age-appropriate, and interview the child's family member, caregiver or guardian.
- Obtain the developmental, feeding and eating abilities, management of secretions and speech history.
- Assessment of the oral mechanism
 - Muscle development of the jaw, lips, and tongue and
 - Integrity of the oral structures [hard and soft palate, jaw, lips and tongue].
- Assess oral and nasal airway functions as they pertain to orofacial myofunctional patterns
- Assess the preparatory phase, oral phase and clinical signs of a pharyngeal phase disorder.

- Assess articulation at the word to conversation level.

SLP Management

Goal of the evaluation

- Establish a differential diagnosis based on clinical findings.
- Document changes from premorbid abilities, the extent to which the disorder has impacted daily life, and current level of functioning.
- Determine if treatment is necessary and potential for functional gains.

Evaluation should address:

- Relevant past medical history with cause and onset of disorder
- Past treatment, if any, for dysarthria
- Diagnosis of current condition including impact on daily life
- Description of disorder(s) including extent and severity as determined from objective measures
- Concurrent conditions with complexities and their impact on prognosis
- Recommendations if treatment is warranted or not and why

Plan of Care if treatment is warranted

- Long-term goals and estimated time frame for attaining them
- Frequency and intensity of treatment; justification for intensive or long-term treatment
- Prognosis for improvements and why
- Referrals to other professionals and services as appropriate

Treatment

Treatment for Tongue Thrust with no clinical signs of swallowing or speech sound errors
Depending on assessment results, intervention addresses the following:

- alteration of lingual and labial resting postures
- muscle retraining exercises, which do not require skilled services of a SLP other than 3-4 training and teaching sessions over a 2 month duration. These exercises need to be performed daily through a Home Education Program for 60 days duration period.
- modification of handling and swallowing of solids, liquids, and saliva, if present, may be completed during the 3-4 training sessions over 60 day duration period.
- speech sound production errors, if present, requires 8-10 treatment sessions over 60 day duration period.

Documentation

- Notes for each encounter to include type of treatment and patient's response to it

- Show measurable progress toward goals or reasons not attained such as: fluctuations in abilities and/or alertness, motivation, caregiver or home programming issues
- Show evidence that education was provided and response to it
- Include attainment, updates, or changes in short or long-term goals and/or changes in intensity or type of treatment

Discharge Criteria

- Patient is at functional levels in all aspects of disorder
- No progress is noted after 2-4 typical sessions
- Patient is able to continue with a home management program
- All goals are reached; no further intervention indicated

References:

1. American Speech-Language-Hearing Association. (1989). Report: Ad hoc committee on labial-lingual posturing function. *Asha*, 31(11), 92–94.
2. American Speech-Language-Hearing Association. (1991). The role of the speech-language pathologist in assessment and management of oral myofunctional disorders. *Asha*, 33(Suppl. 5), 7.
3. American Speech-Language-Hearing Association. (1993). Orofacial myofunctional disorders: Knowledge and skills. *Asha*, 35(Suppl. 10), 21–23.
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5. Mason, R. M. "A retrospective and prospective view of orofacial myology." *The International journal of orofacialmyology: official publication of the International Association of Orofacial Myology* 31 (2005): 5.
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Voice Evaluation and Therapy

Related Terms

- Abnormal voice
- Voice Disturbance
- Voice Change

Vocal Parameters

- Vocal Quality
- Vocal Pitch
- Vocal Loudness
- Vocal Resonance
- Breath Support

Possible Vocal fold/laryngeal diagnoses (to name a few) that may cause one or more of the above voice parameters to be abnormal:

- Nodules, Polyps, Cyst, Psuedocyst, Granuloma, Carcinoma, Papilloma, Hemangioma, Karatosis, Reinke's Edema, Polypoid Degeneration (Polyposis), Leukoplakia, Laryngeal web, Vocal fold edema, laryngitis (acute or chronic), Presbylaryngeus, Vocal fold atrophy, Vocal cord dysfunction, Paralyzed or paresed vocal fold, Reflux laryngitis, Functional aphonia, Psychogenic voice disorder.

Definitions

Dysphonia:

Refers to impaired utterance of sounds by the vocal folds

Dysphonia:

Speech disorder attributable to a disorder of phonation that may affect one or more of the subsystems of speech of respiration, vocal fold vibration, and/or resonance.

Evaluation of Voice

History

Goals of Complaint History:

- Identify co-morbidities that affect general management or which require medical management.
- Determine if trauma-related or congenital; determine nature and extent of event.
- Helps to begin to determine primary medical condition.
- Helps to determine any contributing factors affecting the voice.

Case History to include:

Psychosocial, psychological attributes, personality traits, professional voice, non-professional voice, drugs, surgeries, voice use, reflux, symptoms, and familial.

*The following are methods for evaluating voice that may or may not be used for each individual. Whether a method is used or not as part of the voice evaluation is facility dependent, patient dependent, and access to equipment dependent. For example, some facilities may use CPT code to bill for acoustic measures but don't have the equipment to assess aerodynamic measures.

Method	Possible Findings	Possible Equipment used
Functional Measures *CPT code 92506 (May or may not be part of)	Use to find how voice is functionally affecting the individual.	VHI (Voice Handicap Index), VRQOL (Voice Related Quality of Life, VOISS, PHI-10, VAP, dysphonia severity index (DSI), FIMS for voice, VOS (Voice Outcomes Survey), singing related quality of life.
Auditory Perceptual Judgments *CPT code 92506 (Must be part of)	Grade, hard glottal attack, breathiness, strain, hoarseness, rough, loudness, pitch, severity, falsetto, fry, harsh, tremor, spasmodic, voice breaks, pitch breaks, aphonia, dysphonia, diplophonia, monotone, monoloudness, voice quality	Clinical perception (ear), Voice profile, Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V), Grade, Roughness, Breathiness, Asthenia, Strain Scale (GRBAS)
Acoustic Measures *CPT code 92520 (usually part of)	Jitter, shimmer, perturbation, perturbation quotient, relative amplitude perturbation, period perturbation quotient, amplitude perturbation quotient, voice (phonatory) breaks, subharmonic(s), tremor index, voice onset time, harmonic, H1/H2, formant, spectrum, short term spectrum, long term spectrum, fundamental frequency, range, intensity, decibel (dB), Hertz, Multidimensional voice program (MDVP), spectrogram, HNR (harmonic to noise), NHR (noise to harmonic ratio), NNE (normalized noise energy), SNR (signal to noise ratio, flutter, vocal attack time, F2 slope spectral slope glottal vocal efficiency, voice turbulence index, soft phonation index.	Sona Speech, Visi-Pitch, computerized speech lab (CSL), dosimeter, ambulatory phonation monitor, maximum phonation time, MPT, phonetogram, CSpeech, Praat.
Aerodynamic Measures *CPT code 92520 (may or	Airflow (combined with voice, larynx.), open quotient, DC flow, minimum flow, AC flow, peak flow, speech quotient, MFDR (maximum	Circumferential mask, Aerophone, phonation quotient, S/Z ratio, maximum phonation time

may not be part of)	flow declination rate), average flow, airway resistance, glottal resistance, laryngeal airway resistance, subglottal pressure, PTP (phonation threshold pressure).	
Imaging *CPT code 31579 (diagnostic laryngoscopy)	Vocal fold, vocal fold edge, vocal fold abduction, vocal fold adduction, amplitude, vibratory behavior, phase symmetry, periodicity, mucosal wave, glottic closure, vocal fold vertical level of approximation, arytenoid symmetry & movement, ventricular fold symmetry & movement, hyperfunction, anatomy of laryngeal structures.	Videostroboscopy, videoendoscopy (larynx), stroboscopy, videolaryngostroboscopy, laryngoscopy, rigid scope (larynx), oral rigid scope, transnasal flexible, nasoendoscopy, nasopharyngolaryngoscopy, kymography, videokymography, transillumination, ultrasound, laryngeal mirror, indirect laryngoscopy, direct laryngoscopy.
Physical Exams *CPT code 92506 (may be part of)	Oral mechanism function, extrinsic laryngeal musculature/tightness, masses	Palpation, clinician observation, Electroglottography (EGG).

Results if Voice Disorder

Determine an appropriate plan of care based upon the individual's medical history, cultural differences, professional vocal needs, and functional impact.

Interpret the clinical findings of the voice disorder evaluation that will include:

1. A clinical diagnosis of a voice disorder based upon a combination of characteristics identified during the assessment process.
2. Determine which vocal parameters and subsystems of speech are affected.
3. Provide diagnostic probing to determine which compensatory strategies or changes may be used to improve the voice.
4. A voice disorder is considered abnormal to the extent that it handicaps an individual's ability to functionally communicate effectively and efficiently during all possible speaking environments, and do so in a voice that is not unpleasant to the listener and provoking unwanted attention.
5. Determine the needs and abilities of the individual, family concerns, impact of the voice disorder on emotional health and functional ability to communicate ideas across all environments. Determine potential for attitudinal, compensatory and functional improvement within a reasonable time frame.

ST Management:

CPT code for Voice therapy: 92507 (individual) and 92508 (group of 2 or more)

(The following management will vary depending on the specific needs of the individual)

- Develop an individual program designed to address all of the factors that are negatively impacting the voice.
- Develop a treatment plan that emphasizes implementation of strategies in a variety of communication situations within his/her home, work, and/or community.
- Provide family members, caregivers, guardian, siblings, and/or other communication partners training in communication techniques and strategies to facilitate effective voice use.
- Provide individuals and parents with information regarding community support groups and/or programs if appropriate in terms of the diagnosis.
- Continue to assess the individual because symptoms will change over time.
- Select and implement appropriate therapy techniques to achieve a “better voice” or “good voice”.
- Treatment intensity is variable but typically includes 1-2 x wk x 10-20 sessions.
- Provide suggestions and resources for follow-up
- Provide home program to continue to progress and/or to maintain gains
- Provide summary of course of treatment and progress
- If discharged due to medical issues and/or plateau in progress, indicate under what future conditions a new referral would be warranted

Documentation

- Notes for each encounter to include type of treatment and patient’s response to it.
- Show measurable progress toward goals and reason not attained such as: fluctuations in abilities and/or motivation.
- Show evidence that education was provided and response to it
- Include attainment, updates or changes in short or long-term goals and/or changes in intensity or type of treatment.

Referral Guidelines for Voice Disorder

- If improvement does not meet the above guidelines or improvement has reached a plateau:
- Refer HMO patients to Primary Care Physician to explore other alternatives; PPO patients may be referred to family physician or appropriate specialist.
- Consults with a mental health specialist for treatment of depression or other mental health issues which may reduce or prevent ST management.
- Referral to local support groups both during treatment and after treatment for long term practice and support for those appropriate diagnoses such as spasmodic dysphonia.

Home Medical Equipment**Self-Management Techniques**

- Individual to follow home therapy program.

Alternatives to ST Management

Mental health management to prepare the client for subsequent speech pathology treatment if psychological factors are present and impacting the voice and/or progress in therapy.

Treatment Plan Timeline

Frequency and duration of services is based upon specific needs of the individual at the time of the evaluation. . In addition, the symptoms will change over time. Therefore, discharge planning will involve consideration of maximum potential achieved.

Discharge Criteria

- Medical/psychological or other issues interfering with goals of treatment program
- Able to continue with a home management or other supplemental program
- Goals have been reached, no further intervention indicated
- Insurance benefit has ended
- Non-response to treatment justifies discharge
- Patient is at functional levels in all aspects of disorder

Skilled Maintenance Care

Maintenance care is defined as services required to maintain the member's current condition or to prevent or slow deterioration of the member's condition.

Services are covered for maintenance care if the specialized skill, knowledge and judgment of a qualified therapist are required:

- To establish or design a maintenance program appropriate to the capacity and tolerance of the member
- To educate/instruct the member or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- When skilled services are required in order to provide reasonable and necessary care to prevent or slow further deterioration, coverage will not be denied based on the absence of potential for improvement or restoration as long as skilled care is required.

Medicare References:

1. Centers for Medicare & Medicaid Services (CMS), CMS Manual System-Pub 100-02 Medicare Benefit Policy, Transmittal 179, Manual Updates to Clarify Skilled Nursing Facility (SNF), Inpatient Rehabilitation Facility (IRF), Home Health (HH), and Outpatient (OPT) Coverage Pursuant to Jimmo vs. Sebelius.
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<http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/bp102c15.pdf>
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Diagnosis Codes

Aphasia Diagnoses		ICD-10 Code
Cerebral artery occlusion unspecified with cerebral infarction		I63.50
Aphasia		R47.01
Acute, but ill-defined cerebrovascular disease		I69.00
		I69.01
Aphasia – cerebrovascular disease		I69.920
▪ Cerebral infarction		I69.320
▪ Intracerebral hemorrhage		I69.120
▪ Nontraumatic intracranial hemorrhage NEC		I69.220
▪ Specified disease NEC		I69.820
▪ Subarachnoid hemorrhage		I69.928, I69.928
▪ Aphasia following nontraumatic subarachnoid		I69.020
▪ Hemorrhage		I69.020
Cerebral thrombosis with cerebral infarction		I63.30
Subarachnoid hemorrhage		I60.9
Dysphasia		R47.02
Dysphagia following cerebrovascular disease		I69.921
Intracerebral hemorrhage		I61.9
Unspecified transient cerebral ischemia		G45.9
Other cerebrovascular vasospasm and vasoconstriction		I67.848
Late effects of cerebrovascular disease		none
Unspecified late affects of cerebrovascular disease		I69.90
Acute, but ill-defined cerebrovascular disease		none
Other and ill-defined cerebrovascular disease - unspecified cerebrovascular disease or lesion NOS		I67.9
Parkinson's disease		G20
Parkinson's disease		none
Huntington's choreas		G10
Apraxia Diagnoses		ICD-10 Code
Apraxia cerebrovascular disease		I69.90
		I69.990
Other symbolic dysfunction (acalculia, agnosis, agraphia, apraxia)		R48.8
Apraxia		R48.2
Other symbolic dysfunctions (acalculia, agraphia)		R48.2
Symbolic		R48.8
Agnosia		R48.9

Aural Rehabilitation Diagnoses	ICD-10 Code
Sensorineural hearing loss	H90.3
Sensorineural hearing loss, bilateral	H83.93
Unspecified ear	H83.90
Unspecified disease of R inner ear	H83.91
Unspecified disease of L inner ear	H83.92
Mixed conductive and sensorineural hearing loss, bilateral	H90.6
Mixed conductive and sensorineural hearing loss, unspecified	H90.8
Mixed conductive and sensorineural hearing loss, R	H90.71
Mixed conductive and sensorineural hearing loss, L	H90.72
Conductive hearing loss	H90.0
Sensorineural hearing loss unspecified	H90.5
Sensory hearing loss, bilateral	H90.3
Conductive hearing loss, middle ear	None
Conductive hearing loss, unspecified	H90.2
Conductive hearing loss of combined types	none
Conductive hearing loss, bilateral	H90.0
Conductive hearing loss, unilateral R	H90.11
Conductive hearing loss, unilateral L	H90.12
Central hearing loss (Unspecified sensorineural hearing loss)	H90.5
Mixed hearing loss, unilateral	
▪ Right	H90.71
▪ Left	H90.72
Cognitive-Communication Disorders Diagnoses	ICD-10 Code
Intracranial injury of other and unspecified nature	S06.890A
Head injury, unspecified	S09.90XA
Subsequent	S09.90XD
Sequela	S09.90XS
Post-concussion syndrome	F07.81
Cognitive deficits	I69.1
Multiple sclerosis	G35
Anoxic brain damage	G93.1
Malignant neoplasm brain, unspecified	C71.9
Memory loss	
▪ Retrograde amnesia	R41.2
▪ Other amnesia	R41.3
Intracranial injury of other an unspecified nature	
▪ Without loss of consciousness	S06.890A
▪ With loss of consciousness, 30 min or less	S06.891A

▪ With loss of consciousness, 31-59 min	S06.892A
Concussion unspecified	
▪ Without loss of consciousness	S06.0X0A
▪ With loss of consciousness, 30 min or less	S06.0X01A
▪ With loss of consciousness, 31-59 min	S06.0X02A
Malignant neoplasm brain, temporal lobe	C71.2
Neoplasm of the brain	C71.0
Malignant neoplasm brain, frontal lobe	C71.1
Mild cognitive impairment	G31.84
Subdural hemorrhage	I62.00
Concussion with loss of consciousness of unspecified duration	S06.0X9A
Subdural hemorrhage following injury without open intracranial wound with state of consciousness unspecified	None
Without loss of consciousness	S06.5X0A
Intracranial injury of other and unspecified nature without open intracranial wound with brief (less than one hour) loss of consciousness	S06.5X2A
Intracranial injury of other and unspecified nature without open intracranial wound with moderate (1-24 hours) loss of consciousness	S06.1X4A
Intracranial injury of other and unspecified nature without open intracranial wound with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	S06.1X5A
Intracranial injury of other and unspecified nature with open intracranial wound	S01.90XA
With prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	
Parkinson's disease	G20
Parkinson's disease	none
Huntington's choreas	G10
Developmental Speech & Language Disorders Diagnoses	ICD-10 Code
Other developmental articulation	none
Other developmental disorders of speech and language	F80.89
Phonological disorder	F80.0
Developmental disorder of speech and language, unspecified	F80.9
Mixed receptive-expressive language disorder	F80.2
▪ Other speech disturbances	R47.89
▪ speech disturbance, unspecified	R47.9

▪ Dysarthria	R47.1
▪ Slurred speech	R47.81
Expressive Language disorder	F80.1
Speech and Language developmental delay due to hearing loss	F80.4
Down's syndrome, unspecified	Q90.9
Cleft palate, unspecified	Q35.9
Unspecified otitis media	H66.90
Infantile cerebral palsy, unspecified	G80.9
Delayed milestones	R62.0
Autistic disorder	F84.0
Symbolic dysfunction, unspecified	R48.9
Unspecified delay in development - learning disorder	F81.9
Care involving speech-language therapy	none
(Encounter for other specified aftercare) Not billable as a primary code, only secondary	Z51.89
Other and unspecified chronic non suppurative otitis media	H65.499
Cleft palate with cleft lip	
▪ Unspecified cleft palate with unilateral cleft lip	Q37.9
▪ Cleft hard palate with bilateral cleft lip	Q37.0
▪ Cleft hard palate with unilateral cleft lip	Q37.1
▪ Cleft soft palate with bilateral cleft lip	Q37.2
▪ Cleft soft palate with unilateral cleft lip	Q37.3
▪ Cleft hard and soft palate with bilateral cleft lip	Q37.4
▪ Cleft hard and soft palate with unilateral cleft lip	Q37.5
▪ Unspecified cleft palate with bilateral cleft lip	Q37.6
Chronic serous otitis media, unspecified ear	H65.20
Speech and language deficits, following unspecified cerebrovascular disease	I69.928
Dysfunction of Eustachian tube, unspecified ear	H69.80
Reverse articulation of teeth (crossbite)	M26.24
Developmental speech or language disorder	F80.89
Specific developmental disorder of motor function	F82
Encephalopathy unspecified	G93.40
Congenital hydrocephalus	Q03.8
Congenital hydrocephalus, unspecified	Q03.9
Autistic disorder	F84.0
Attention deficit disorder of childhood without hyperactivity	None
Attention deficit hyperactive disorder, Attention-deficit hyperactivity disorder, Attention-deficit hyperactivity disorder, Attention-deficit hyperactivity disorder, predominantly inattentive type	F90

Cleft palate, unspecified	Q35.9
Fragile x syndrome	Q99.2
Other symbolic dysfunction	R48.8
Encephalopathy unspecified	G93.40
Cleft palate, bilateral complete	Q35.9
Other specified pervasive developmental disorders, current or active state (Asperger's disorder)	none
Asperger's syndrome	F84.5
Cleft palate with cleft lip- unilateral, incomplete	none
Unspecified cleft palate with unilateral cleft lip	Q37.9
Other Pervasive developmental disorders	F84.8
pervasive developmental disorder, unspecified	F84.9
Unspecified pervasive developmental disorder, current or active state	F84.9
Attention deficit disorder	None
▪ Attention-deficit hyperactivity disorder, predominantly inattentive type	F90.0
▪ Attention-deficit hyperactivity disorder, unspecified type	F90.9
Attention deficit disorder of childhood with hyperactivity	None
▪ Attention-deficit hyperactivity disorder, predominantly hyperactive type	F90.1
▪ Attention-deficit hyperactivity disorder, combined type	F90.2
▪ Attention-deficit hyperactivity disorder, other type	F90.8
Infantile cerebral palsy	G80
▪ Spastic quadriplegic cerebral palsy	G80.0
▪ Spastic diplegic cerebral palsy	G80.1
▪ Spastic hemiplegic cerebral palsy	G80.2
▪ Athetoid cerebral palsy	G80.3
▪ Ataxic cerebral palsy	G80.4
▪ Other cerebral palsy	G80.8
Dysarthria	ICD-10 Code
Bell's palsy	G51.0
Parkinson's disease	G20
Parkinson's disease	G20
Other speech disturbance	R47.89
▪ Dysarthria	R47.1
▪ Slurred speech,	R47.81
▪ Unspecified speech disturbances	R47.9
Dysarthria	R47.1
Malignant neoplasm, tongue unspecified	C02.9
Other specified conditions of the tongue	K14.8

Myasthenia gravis	None
Myasthenia gravis, without acute exacerbation	G70.00
Myasthenia gravis, with acute exacerbation	G70.01
Other congenital malformations of tongue	G38.3
Malignant neoplasm, base of tongue	C01
Dysarthria following unspecified cerebrovascular disease	I69.922
Huntington's Disease	G10
Dysphagia - Swallowing Disorder in Adults	ICD-10 Code
Dysphagia, unspecified	R13.10
Dysphagia	
▪ Oropharangeal phase	R13.12
▪ Pharyngeal phase	R13.13
▪ Pharyngeoesophageal phase	R13.14
Dysphagia	R13.10
Dysphasia, oral phase	R13.11
Dysphagia following unspecified cerebrovascular disease	I69.991
Esophageal Reflux	none
▪ Without esophagitis	K21.9
▪ With esophagitis	K21.0
Other dysphagia	R13.19
Parkinson's disease	G20
Huntington's choreas	G10
Dysphagia - Swallowing Disorder in Children	ICD-10 Code
Dysphagia, unspecified	R13.10
Dysphagia, oropharangeal phase	
▪ Oropharangeal phase	R13.12
▪ Pharyngeal phase	R13.13
▪ Pharyngeoesophageal phase	R13.14
Dysphagia, unspecified	R13.10
Dysphasia, oral phase	R13.11
Dysphagia following unspecified cerebrovascular disease	I69.991
Esophageal Reflux	none
▪ Without esophagitis	K21.9
▪ With esophagitis	K21.0
Other dysphagia	R13.19
Feeding difficulties	R63.3
Failure to thrive	R62.51
Fluency Disorder	ICD-10 Code
Fluency disorder in conditions classified elsewhere. Stuttering in conditions classified elsewhere	R47.82
Fluency disorder, stuttering, following unspecified cerebrovascular disease	I69.923

Childhood onset fluency disorder, cluttering NOS; stuttering NOS	F80.81
Adult onset fluency disorder	F98.5
Voice Disorder Diagnoses	ICD-10 Code
Other voice and resonance disorders	R49.8
Dysphonia (hoarseness)	R49.0
Other diseases of vocal cords	J48.3
Laryngeal spasm	J38.5
Hypernasality	R49.21
Unspecified paralysis of vocal cords	J38.00
Voice and resonance disorder, unspecified	R49.9
Paralysis of vocal cords	
▪ Unilateral	J38.01
▪ Bilateral	J38.02
Aphonia	R49.1
Dysphagia, pharyngeal phase	R13.13
Polyp of vocal cord and larynx	J38.1
Nodules of vocal cord	J38.2
Malignant neoplasm of the glottis	C32.0
Other Voice and resonance disorder	R49.8
Unspecified Voice and resonance disorder	R49.9
Malignant neoplasm of the larynx, unspecified	C32.9
Other diseases of the larynx	J38.7
Other and unspecified diseases of the oral soft tissues – velopharyngeal insufficiency	K13.70
Paralysis of vocal cords and larynx, bilateral	J38.02
Malignant neoplasm of the supraglottis	C32.1
Paralysis of vocal cords and larynx, unilateral	J38.01
Benign neoplasm of the larynx	D14.1
Paralysis of vocal cords and larynx, bilateral	J38.02
Edema of larynx	J38.4
Other diseases of larynx	J38.7