



CLINICAL GUIDELINES

Speech Therapy

Version 1.0

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ST-1: Utilization Management Policy Speech Language Pathology

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Purpose

This policy outlines the process for determining medically necessary, appropriate and reasonable speech therapy services.

ST-1.1: Section Intentionally Left Blank

ST-1.2: Definitions

Utilization Management

The Institute of Medicine (IOM) Committee on Utilization Management by Third Parties recognizes UM as "a set of techniques used by or on behalf of purchasers of health care benefits to manage health care costs by influencing patient care decision-making through case-by-case assessments of the appropriateness of care prior to its provision."

- There are 3 types of Utilization Management:
 - ◆ *Precertification/prior authorization* is conducted before a service or treatment and is rendered in order to eliminate or reduce unnecessary services.
 - ◆ *Concurrent reviews* performed during the episode of care. Periodic review occurs at varied intervals and may encompass case management activities such as care coordination, discharge planning, and care transitioning.
 - ◆ *Retrospective review* is conducted after the service has been completed and assesses the appropriateness of care provided.

Speech Therapy

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.

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.

ST-1.3: 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.
- 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 (Non-covered 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.

ST-1.4: Criteria/Guidelines for Provision of Speech Therapy (ST)

Indications for Coverage

- Contract limitations for speech therapy (ST) services will determine the available benefit if such therapy is determined to be medically necessary.
- 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 12 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.
- Speech therapy services are reviewed and evaluated by eviCore Healthcare 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 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:
 - ◆ 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.
 - ◆ 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.
- ST services provided to 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.)
- 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.)
- 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.
- 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 is not recommended to exceed four.
- ◆ ASHA's Group Treatment Model medical review guidelines for speech-language pathology services¹) 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:

- 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, care and improvement of the professional voice, personal/professional communication effectiveness) is not a covered benefit.
- Also excluded is therapy for developmental speech or language delays/disorders 1 SD or less below the mean in the areas of receptive, expressive, pragmatic or total language composite.
- In the absence of a documented spoken language disorder, education learning services such as reading, writing, and spelling, studying are not covered.
- 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. However, maintenance therapy is covered for holding at a steady state or preventing deterioration of basic functional activities of daily living, including treatment and periodic monitoring in order to provide adaptive strategies and equipment for communication, swallowing and voice in members with progressive neurological disorders such as but not inclusive to amyotrophic lateral sclerosis, cerebral palsy, myasthenia gravis, multiple dystrophy, multiple sclerosis, Parkinson's disease, etc.
- 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.

- The intensity or frequency of care should not exceed the number of visits necessary for a clinician to provide skilled care.
- 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.
- 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.
- Treatment of psychoneurotic or psychotic conditions
- Treatment of self-correcting conditions such as hoarseness when secondary to Acute Rhinitis, Allergy Rhinitis, Gastro-Esophageal/Gastro-Pharyngeal Reflux, Smoking, etc.; developmental articulation errors
- Language therapy for young children with developmental period of dysfluency
- Treatment of functional dysphonia unless demonstrating traumatic vocal fold thickening that does not resolve following successful treatment for laryngitis, GERD or the consistent abstinence from vocally abusive behaviors for an appropriate length of time.
- Instruction of other professional personnel in the patient's speech therapy program
- 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:
 - ◆ The speech, language, communication, voice or swallowing disorder is now defined within normal limits or is now consistent with the individual's premorbid status
 - ◆ The goals and objectives of treatment have been met.
 - ◆ 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.
 - ◆ The individual, family, and/or guardian requests to be discharged
 - ◆ Treatment no longer results in measurable benefits. There does not appear to be any reasonable prognosis for improvement with continued treatment.

- ◆ The individual is unable to tolerate treatment because of a serious medical, psychological, or other condition.
- ◆ 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.
- ◆ 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. eviCore continually researches new and existing technologies used by speech-language pathologists. eviCore has also developed copyrighted Clinical Practice Guidelines that use evidence-based research to address various conditions.

ST-1.5: Authorization of Services

Management Rules

1. Place of Service requiring authorization
 - ◆ Outpatient therapy as defined by the Health Plan or Centers for Medicare & Medicaid Services (CMS)
 - ◆ Home health care.
2. Time-frame for submission
 - ◆ Initial authorization: a request for prior authorization for the first request is typically submitted within 7 days of the initial evaluation (Time-frames may change based on health plan rules).
 - ◆ Ongoing care: the request may be submitted within 7 days prior to the expiration date of the last authorization (Time-frames may change based on health plan rules). A request submitted greater than 7 days must have clinical information that supports ongoing care.
 - ◆ Some health plans may not require prior-authorization; therefore this suggested time-frame will not apply.
3. Clinical Information
 - ◆ Acute and Subacute Conditions – It is recommended that clinical information may be collected within 14 days of the submission date (unless otherwise dictated by State Medicaid Laws or Health Plan Rules).
 - ◆ Chronic Conditions –It is recommended that clinical information may be collected within 20 days of the date of submission (unless otherwise dictated by State Medicaid Laws or Health Plan Rules).
4. Authorizations
 - ◆ Authorizations of visits and units over a specific period of time are based on a set of clinical data for the condition.
 - Some health plans allow dynamic waivers. A dynamic waiver allows a range of visits from 6-12 visits based on the complexity of the condition.
 - Some health plans allow a set number of visits to be completed before prior authorization are required.
 - Updated clinical information is required for ongoing care.

5. Benefit limit
 - ◆ The member's benefit limit and remaining benefits are checked at the time of case build. Authorizations are based on medical necessity. Every effort is made to authorize within the benefit limit, however, it is the responsibility of the member and provider to monitor the use of the member's benefits.
6. State or Federal Mandates
 - ◆ eviCore makes every effort to authorize care according to state and federal mandates.
7. Duplicate care (the same or similar treatment plan for the same condition)
 - ◆ Request for care for the same condition by more than one provider is considered duplicate care. Duplicate care is not medically necessary, as the member's condition can improve with care provided under one treatment plan and by one provider. eviCore will authorize additional care when specialized care is needed such as swallowing or feeding therapy.
8. Retrospective review
 - ◆ Is conducted after the services are completed
In order to determine if services were medically necessary and required the skills of a therapist, documentation must be reviewed. The provider
 - ◆ must submit all case notes such as: initial evaluation, progress notes, daily treatment notes, modality/exercise logs and discharge summary
9. Reconsideration
 - ◆ The provider may ask for a reconsideration of an authorization decision when the case is denied or when a portion of the visits, units or dates of service is approved (partial approval).
 - ◆ Reconsideration can be requested in writing or by requesting a peer to peer call.
 - ◆ The provider must follow the specific rules as outlined by Centers for Medicare Medicaid or the Health Plan.
10. Appeals
 - ◆ eviCore is delegated for first level appeals for some health plans.
 - ◆ Appeals for Medicare members must be filed through the Health Plan unless delegated to eviCore.
 - ◆ To appeal an authorization decision, the provider can submit new information in writing for review or the provider may request a peer to peer call and provide new information for review on behalf of the member.
 - ◆ Appeal instructions are outlined in the provider/member denial letters

ST-1.6: Applicable Federal and State Mandates

The Federal Government and many state insurance mandates require health insurance companies to pay for medically necessary and evidence-based treatments for certain population groups or conditions. eviCore takes into consideration these applicable federal and state mandates when authorizing care.

Early and Periodic Screening Diagnostic and Treatment (EPSDT) Mandate

In 1967, Congress introduced the Medicaid benefit for children and adolescents, known as Early and Periodic Screening, Diagnostic and Treatment (EPSDT). The goal of this benefit is to ensure that children under the age of 21 who are enrolled in Medicaid receive age-appropriate screening, preventive services, and treatment services that are medically necessary to correct or ameliorate any identified conditions – the right care to the right child at the right time in the right setting. This broad scope supports a comprehensive, high-quality health benefit. States share responsibility for implementing the EPSDT benefit with the Centers for Medicare & Medicaid Services (<https://www.medicaid.gov/medicaid/benefits/epsdt/index.html>). eviCore will adhere to the applicable federal and state guidelines when authorizing therapy for children covered by the EPSDT mandate.

ST-1.7: eviCore's Evidence Based Guidelines

eviCore bases clinical guidelines on published national guidelines and research from evidence-based, peer-reviewed literature. In addition, eviCore's Medical Advisory Committee continually evaluates the clinical guidelines based on new evidence in peer-reviewed literature.

Purpose of the Guideline

- Describe appropriate care based on the best available scientific evidence and broad consensus;
- To reduce inappropriate variation in practice;
- To promote efficient use of resources;
- To act as focus for quality control
- Criteria used by clinical reviewers to make authorization decisions

Process for developing new guidelines and updating current guidelines:

- New Guidelines are created by a Speech-Language Pathologist
- Current guidelines are updated annually
- New guidelines are reviewed by external subject matter experts
- The recommendations from the external subject matter expert may be incorporated into the guideline
- The eviCore Medical Advisory Committee will review the new guidelines and updates to the current guidelines annually

- The guideline is then sent to the Health Plan for review
- Accepted changes will be incorporated into the guideline before publication on the eviCore website.

Intended Audience:

- Utilization Management Clinical Reviewers
- Providers of speech-language therapy services
- Health Plans that contract with eviCore

Medicare Coverage Policies

- The coverage policies of CMS (Centers for Medicare and Medicaid Services) take precedence over eviCore's guidelines for Medicare and Medicare Advantage enrollees.

References

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5. Jimmo vs. Sebelius Settlement <http://www.medicareadvocacy.org/jimmo-v-sebelius/>. Accessed June 14, 2019.
6. Medicare Benefit Policy Manual, Sections 220.2 B, 220.2 D, and Chapter 7, Section 40.2.1

ST-2: Section Intentionally Left Blank

ST-3: Section Intentionally Left Blank

ST-4: Aphasia

ST-4.1: Section Intentionally Left Blank

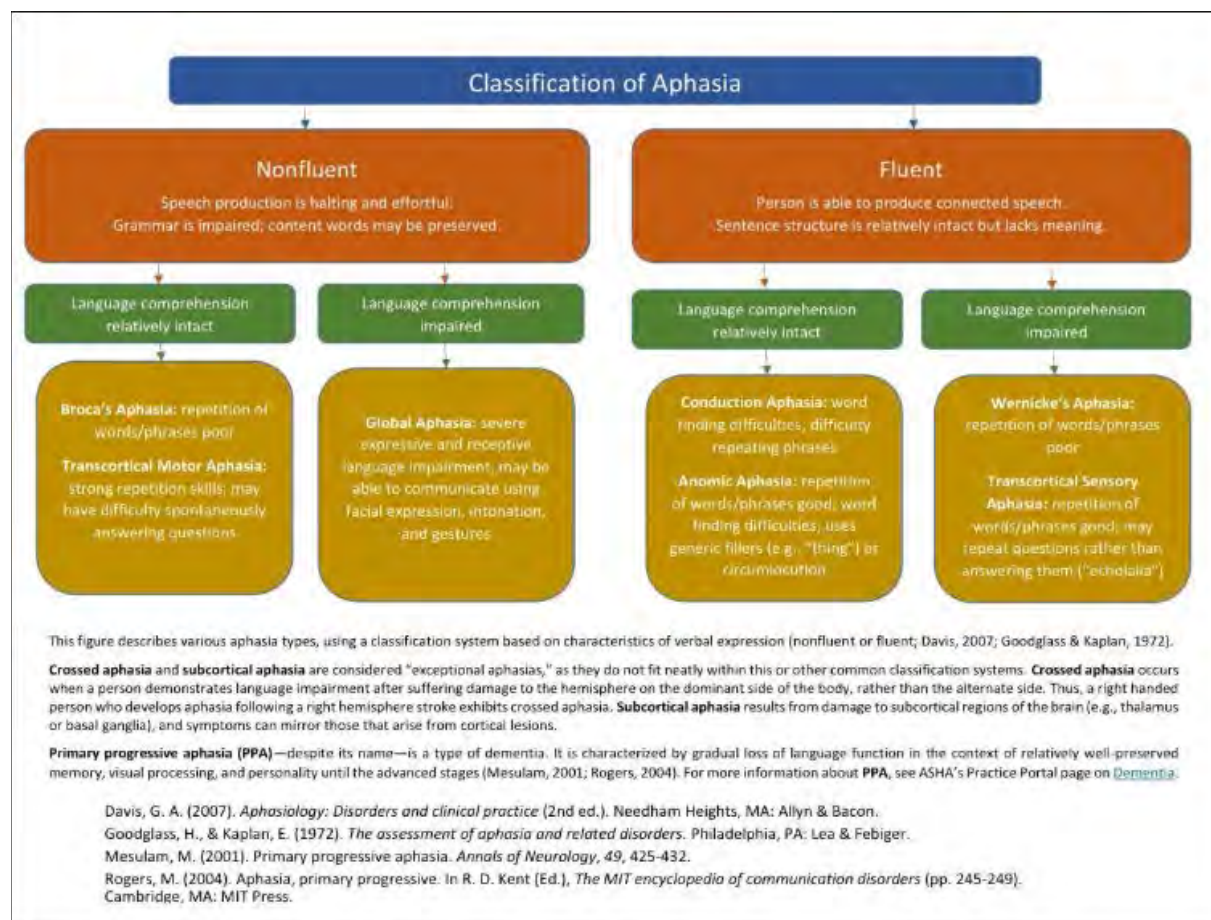
ST-4.2: Definition

ST-4.3: Symptomatology

ST-4.4: Requirements for Speech Therapy Visits

ST-4.5: Presentation

ST-4.6: Speech Therapy Management



https://www.asha.org/uploadedFiles/ASHA/Practice_Portal/Clinical_Topics/Aphasia/Common-Classifications-of-Aphasia.pdf¹

ST-4.1: Section Intentionally Left Blank

ST-4.2: Definition

- Aphasia is defined as an acquired neurogenic language disorder resulting from an injury to the brain, usually, the left hemisphere. Aphasia involves varying degrees of impairment. Depending on an individual's unique set of symptoms, impairments may result in loss of ability to use functional communication skills. A person with aphasia often has relatively intact nonlinguistic cognitive skills.
- Symptoms may not fit neatly into a single aphasia type, and classification may change over time as communication improves with recovery.
- The outcome of aphasia varies significantly from person to person and is determined by the initial severity level, lesion site and size, patient age, gender and education level, patient motivation in treatment, comorbidities, and the amount of spontaneous recovery that occurs over time.

ST-4.3: Symptomatology

Functional effects on an individual's communication will vary in regards to number, intensity and level of severity of symptoms.

Clinical Symptoms	Functional Effects
➤ Impaired language comprehension skills	➤ Difficulty finding words (anomia) ➤ Difficulty understanding what is heard ➤ Needing extra time to process what is heard ➤ Following simple/complex directions ➤ Answering yes/no questions ➤ Single word utterances ➤ Difficulty repeating what is heard ➤ Figurative speech misinterpreted
➤ Impaired verbal language skills	➤ Expressing basic automatic speech or social greetings ➤ Single word utterances ➤ Fragmented, short phrases ➤ Grammatical errors ➤ Words in wrong order phrases/sentences ➤ Sound substitutions ➤ Jargon ➤ Formulating questions, thoughts, responses, and other types of verbal communication ➤ Producing cohesive language in all situations up to previous ability ➤ Halting or effortful speech ➤ Unaware of errors
➤ Impairment in Reading Comprehension (Alexia)	➤ Tracking, recognizing or attaching meaning to printed material ➤ Difficulty understanding words by sight ➤ Difficulty sounding out words ➤ Associated word substitutions (fork for spoon) ➤ Reading and understanding sentences, instructions, and questions from increasingly longer, more complex materials
➤ Impairment in Written Expression (Agraphia)	➤ Difficulty copying or tracing letters, numbers, words, sentences ➤ Spelling ➤ May write single words only ➤ May write nonsense syllables or words ➤ Nonsense run on sentences ➤ Incorrect grammar

ST-4.4: Requirements for Speech Therapy Visits

ST-4.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Member's most recent standardized evaluation scores, percent of functional delay, or standard deviation (SD) score, when appropriate, for the member's diagnosis/disability.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-4.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for aphasia are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected communication impairment.
 - ◆ The individual presents with a functional communication disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a communication disorder.
 - ◆ The individual's communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Objective findings, including standardized tests and observational assessments, support a significant impairment in expressive or receptive language function.
 - ◆ The individual has experienced a significant decline in expressive or receptive language function from prior level of function.
- In order to establish medical necessity for speech therapy services, the following criteria must be met:
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.

- ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-4.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence
- Current research varies in the frequency and duration documented for treatment of aphasia. The transfer of skills into activities of daily living requires retention and generalization into new environments. Extensive practice of a single target can lead to prompt dependency or the inability to self regulate and self-correct. Random practice treatment leads to increased self-regulation independent of the level of treatment intensity¹. Therapy techniques that incorporate skills in naturalistic context provide increased opportunities for functional application in daily living. The overall duration of treatment may be determined by the effectiveness of the type of practice utilized and the complexity of the skills addressed.
- Individual patient characteristics affect optimal treatment intensity such as their level of tolerance of therapy, environmental factors, and caregiver participation. Higher treatment frequency does not necessarily correlate to better outcomes.^{2, 4} There is a concept of diminishing return in that once a certain point of function has been reached, additional change or improvement is unlikely regardless of treatment intensity⁵.
- Baker researched the challenges of treatment intensity and duration in a recent journal commentary. Results revealed four key elements to determining the optimal treatment frequency and duration for therapy. 1) Intensity is undefined and subjective in nature. The concept of frequency, duration and total sessions vary among the studies reviewed. 2) Individual characteristics impact the effectiveness and appropriate treatment intensity. 3) Outcomes are influenced by the type of intervention utilized and targets addressed. 4) Intense and non-intense schedules can result in similar outcomes because of all of the changing variables in treatment (i.e. client, clinician, condition, and other treatment related variables).

- Cherney and colleagues³ reported that the optimal intensity for each individual will be dependent on the type of intervention, the specific skills being targeted, and the expectations of the patient. The characteristics of each individual and environmental factors all play a significant role in determining appropriate treatment frequency. This information is in addition to the type of practice utilized in therapy as described above.
- A Cochrane evidence based review² documents that speech language treatment is supported to increase functional communication skills for aphasia post stroke. Information suggests that high intensity, high dosage treatment over a short period of time or a similar intensity of therapy spread out over a long period of time is effective. High intensity over a short period of time may not correlate to better outcomes.
- Cherney et al⁴ conducted a systematic review regarding high intensity and low intensity services for individuals with aphasia. A series of studies were reviewed to compare the effectiveness of varied treatment intensity. The results demonstrated no significant difference between high intensity and low intensity treatment. The results suggests that the same benefits can be demonstrated with less intensive services.
- Stahl and colleagues⁶ found that services of more than 2 hours per day within 4 weeks were not effective in treating aphasia in post stroke patients. Extending the duration of treatment for 2 weeks was reported to be more effective in recovery for post stroke aphasia. A second study regarding post stroke aphasia patients was conducted by Koyuncu et al.⁷ Research confirmed that twice weekly services for an 8 week duration was effective in treatment of fluency of speech, listening comprehension, reading comprehension, oral motor evaluation, automatic speech, repetition and naming in post stroke patients with aphasia.

ST-4.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Language function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.

- Medical condition dictates discharge from services

ST-4.4.5: Referral Guidelines

- Physician or neurologist for medical 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
- Neuropsychologist for depression and behavior concerns

ST-4.5: Presentation

- Aphasia is caused by damage to the language centers of the brain. Damage may involve both the right and left hemispheres. One of the most common causes of aphasia is stroke/CVA. Other causes include Traumatic Brain Injury (TBI), Brain Tumor, Brain Infection, and Progressive Neurological Diseases.
- Aphasia may be masked by the motor speech disorders of apraxia and/or dysarthria.
- Severity ranges vary. Deficits may affect one, multiple, or all areas of language functioning.
- Dysphagia may be a co-morbidity.
- Cognitive impairments may negatively impact recovery of language skills.

ST-4.5.1: Assessments and Measurement Tools

- Stroke and Aphasia Quality of Life Scale (SAQOL) - Spanish version available as well
- Western Aphasia Battery-Revised (WAB-R)
- Boston Diagnostic Aphasia Examination Third Edition (BDAE-3)
- Communication Abilities in Daily Living-3 (CADL-3)
- American Speech and Hearing Association Functional Assessment of Communication Skills –Revised (ASHA FACS)
- Communication Effectiveness Index (CETI)
- The Stroke Impact Scale (SIS)
- Bedside Evaluation Screening Test-2 (BEST-2)
- Mississippi Aphasia Screening Test (MAST)
- Multilingual Aphasia Examination 3rd Edition (MAE-3)
- The Frenchay Aphasia Screening Test (FAST)
- ASHAs Person-Centered Aphasia Evaluation

ST-4.6: Speech Therapy Management

ST-4.6.1: Clinical Interventions

➤ Community Support	➤ Provide community support to assist patient to function in individual life communicative activities of daily living: ➤ Community Aphasia Groups ➤ Life Participation Approach to Aphasia (LPAA) ➤ Digitally Based Therapy (Computers, Tablets, Smart Phones, etc.)
➤ Multimodal Treatment	➤ Augmentative and Alternative Communication (AAC) ➤ Promoting Aphasics' Communication Effectiveness (PACE) ➤ Visual Action Therapy (VAT)
➤ Melodic Intonation Therapy (MIT)	➤ Intoning single words and short phrases to improve verbal production
➤ Partner Approaches	➤ Conversational coaching ➤ Supported Communication Intervention (SCI) ➤ Constraint Induces Therapy (CILT)
➤ Reading	➤ Multiple Oral Reading (MOR) ➤ Oral Reading for Language in Aphasia (ORLA) ➤ Supported reading comprehension
➤ Reciprocal Scaffolding Treatment	➤ Group treatment in meaningful social setting. Utilizes reciprocal teaching interactions between aphasics in group.
➤ Script Training	➤ Uses script knowledge/training to facilitate dialogue until speech becomes automatic.
➤ Syntax Treatment	➤ Implemented to improve grammatical structure with sentence level deficits. ➤ Sentence Production Program for Aphasia (SPPA) ➤ Treatment of Underlying Forms (TUF)
➤ Word Finding Treatment	➤ Intended to improve word finding in spontaneous speech. ➤ Gestural Facilitation of Naming (GES) ➤ Response Elaboration Training (RET) ➤ Semantic Feature Analysis ➤ Verb Network Strengthening Treatment (VNeST) ➤ Word Retrieval Cueing (semantic and phonological cueing)

ST-4.6.2: Specific Treatment Considerations

- Bilingual individuals may exhibit aphasia in diverse ways for each language spoken, depending on proficiency, when language was learned, and how often each language is used.
- Symptoms vary depending on demands of communicative interactions, location of infarct and degree of brain damage.
- Varying degrees of aphasia may present in receptive and expressive language.

ST-4.6.3: Self Management Technique

- Consistent completion of an individualized home exercise program
- Home devices and organizational tools such as smart phones, alarms, calendars, reminders, and checklists to support daily activities
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

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ST-5: Acquired Apraxia of Speech

ST-5.1: Related Terms**ST-5.2: Definition****ST-5.3: Symptomatology****ST-5.4: Requirements for Speech Therapy Visits****ST-5.5: Presentation****ST-5.6: Speech Therapy Management**

ST-5.1: Related Terms

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

ST-5.2: Definition

- Apraxia of speech (AOS) is defined as “a neurologic speech disorder that reflects an impaired capacity to plan or program sensorimotor commands necessary for directing movements that result in phonetically and prosodically normal speech” by the American Speech Language and Hearing Association¹
- 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

ST-5.3: Symptomatology

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.

ST-5.4: Requirements for Speech Therapy Visits

ST-5.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Member's most recent standardized evaluation scores, percent of functional delay, or standard deviation (SD) score, when appropriate, for the member's diagnosis/disability.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-5.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for acquired apraxia of speech are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in speech intelligibility
 - ◆ The individual presents with a functional speech production disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a speech production disorder.
 - ◆ The individual's communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Objective findings, including standardized tests and observational assessments, support a significant impairment in speech intelligibility.
 - ◆ The individual has experienced a significant decline in speech intelligibility from prior level of function.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must established that the patient's condition is expected to improve from the services provided.

- ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-5.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of Independence

ST-5.4.4: Discharge Criteria

- The individual's speech production is commensurate to those of the same chronological age, gender, ethnicity, or cultural and linguistic background.
- The individual's speech intelligibility does not impair participation in health, safety and independence status
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-5.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiology for suspected hearing loss
- AAC Specialist for assistance with implementation of augmentative or alternative communication
- Occupational therapy for limb apraxia

ST-5.5: Presentation

- A common cause of acquired apraxia is CVA. Other causes include traumatic brain injury, dementia, tumors, and progressive neurological disorders
- Apraxia of Speech rarely occurs in isolation. It is often concurrent with aphasia and/or dysarthria and/or cognitive-communication disorders.
- Nonverbal oral apraxia and limb apraxia frequently occur with AOS.
- 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.
- 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.

ST-5.5.1: Assessments and Measurement Tools

- Apraxia Battery for Adults-2 (ABA-2),
- Quick Assessment for Apraxia of Speech
- Test of Oral and Limb Apraxia (TOLA)

ST-5.6: Speech Therapy Management

ST-5.6.1: Section Intentionally Left Blank

ST-5.6.2: Specific Treatment Considerations

- 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." ¹³

ST-5.6.3: Self Management Technique

- Consistent completion of an individualized home exercise program
- Augmentative and alternative communication devices
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

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ST-6: Apraxia: Pediatrics

ST-6.1: Related Terms**ST-6.2: Definition****ST-6.3: Symptomatology****ST-6.4: Requirements for Speech Therapy Visits****ST-6.5: Presentation****ST-6.6: Speech Therapy Management**

ST-6.1: Related Terms

- 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

ST-6.2: 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.

ST-6.3: 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. ➤ Articulatory Groping ➤ Voicing Errors	➤ 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.

Clinical Symptoms	Functional Effects
◆ 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.

Common Identifying Factors of CAS

➤ Strands 10 point checklist characteristics.	➤ Slow rate
➤ Difficulty achieving initial articulatory configurations and transitions into vowels	
➤ Syllable segregation	➤ Slow DDK rate even with same sequences
➤ Lexical stress errors or equal stress	➤ Increased difficulty with longer or more phonetically complex words
➤ Vowel or consonant distortions including distorted substitutions	➤ ASHA CONSENSUS BASED
➤ Groping (nonspeech)	➤ Inconsistent errors on consonants and vowels in repeated productions of syllables or words
➤ Intrusive schwa	➤ Lengthened and disrupted coarticulatory transitions between sounds and syllables
➤ Voicing errors	➤ Inappropriate prosody, especially in the realization of lexical or phrasal stress

ST-6.4: Requirements for Speech Therapy Visits**ST-6.4.1: Documentation Requirements**

- Standardized assessments administered at least annually that support more than 1 SD below the mean in composite area.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-6.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for childhood apraxia of speech are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in speech sound production
 - ◆ The individual presents with a functional speech production disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a speech production disorder.
 - ◆ The individual's conversational intelligibility is not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.

- ◆ The individual's communication skills impair participation in in health, safety and independence status
 - ◆ Standardized tests support a delay of more than 1 standard deviation below the mean in a composite area of motor development and sequencing for speech sound production.
 - ◆ Identifying factors of Childhood Apraxia of Speech have been observed and described by the evaluating therapist. Refer to table “Common Identifying Factors of CAS” included in the symptomatology section of this guideline for additional information.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
- ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
 - ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-6.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
- ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence

ST-6.4.4: Discharge Criteria

- The individual's speech production is commensurate to those of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's speech intelligibility does not impair participation in health, safety and independence status
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-6.4.5: Referral Guidelines

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

ST-6.5: Presentation

- Childhood Apraxia of Speech (CAS) can be caused by three primary etiologies.
 - ◆ CAS can be present in correlation with neurological medical conditions such as childhood stroke, trauma, brain cancer, and infection
 - ◆ CAS can be observed as a complication of a variety of syndromes and neurobehavioral disorders such as autism, fragile X, Prader-Willi and Rhett syndrome.
 - ◆ The origin of CAS may also be of idiopathic origin in otherwise typically developing children
- Speech production is characterized by deficits in motor planning and the execution of phonemes versus immature phonological patterns or delayed speech sound acquisition typically observed in children with an articulation or phonological disorder.
- Error patterns are inconsistent across productions of syllables and words. During a five trial production of a target syllable or word, five different error combinations may occur.
- Vowel distortions are indicative of CAS as these errors are not typically observed in developmental speech sound disorders (articulation and phonological).
- Sequencing between sounds and syllables is lengthened and disorganized.

- Prosody is not appropriate to the context at the syntactic and phrase level.
- Intelligibility decreases as the length of the utterance increases due to the demand for motor planning and execution. Initial consonant deletion can also be observed as a compensatory measure as utterance length increases
- Groping behaviors are observed when attempting to imitate oral motor movements or speech sounds
- Additional characteristics that are associated with CAS include delayed language development, difficulties in literacy skills, and pragmatic delays. Problems not associated with speech and language development include gross and fine motor delays, limb apraxia, feeding delays, and abnormal oral hyper or hypo sensitivity.

ST-6.5.1: Assessments and Measurement Tools

- Kaufman Speech Praxis Test for Children (KSPT)
- Verbal Motor Production Assessment for Children (VMPAC)
- The Apraxia Profile
- Screening Test for Developmental Apraxia of Speech-2 (STDAS-2)

ST-6.6: Speech Therapy Management

ST-6.6.1: Specific Treatment Considerations

(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.

ST-6.6.2: Self-Management Techniques

- Consistent completion of an individualized home exercise program
- Augmentative and alternative communication devices
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

Home Medical Equipment

- Augmentative and assistive communication device.

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ST-7: Augmentative and Alternative Communication (AAC)

ST-7.1: Related Terms**ST-7.2: Definition****ST-7.3: Symptomatology****ST-7.4: Requirements for Speech Therapy Visits****ST-7.5: Presentation****ST-7.6: Speech Therapy Management**

ST-7.1: Related Terms

- Speech Generating Device (SGD)
- Symbols
- Picture Communication Boards
- Sign Language

ST-7.2: Definition

Augmentative communication is used to supplement existing speech, and alternative communication is used in place of speech that is absent or not functional.

Augmentative and alternative communication (AAC) addresses the needs of individuals who present with significant and complex communication disorders characterized by impairments in speech-language production and/or comprehension and include spoken and written modes of communication. AAC may be temporary or permanent. It may be used temporarily by patients following an operation or trauma or permanently by those individuals who will require the use of some form of AAC throughout their lifetime.

ST-7.3: Symptomatology

- Individuals who are candidates for utilization of AAC present with speech, language, or motor impairment(s) that prevent functional independent communication. A speech and language diagnosis will accompany the utilization of AAC. Common disorders associated with limited communication ability include apraxia of speech (pediatric and adult), aphasia, and pediatric spoken language disorders.

➤ Speech intelligibility is impaired to the extent that the patient is not able to communicate functionally with familiar or unfamiliar listeners without assistance	➤ The individual does not have a form of functional, verbal communication
➤ Ability to recognize and select words, phrases, or sentences from a picture board or speech generating device (SGD) that he or she is unable to verbally express	➤ The individual presents with a temporary medical condition (habilitative or rehabilitative) that requires AAC to supplement communication
➤ Progressive neurological disorders such as dementia, ALS, and Parkinson's disease, that may require varying types of AAC as the disease progresses.	➤ Syndromes and neurobehavioral disorders such as autism, fragile X, Prader-Willi and Rhet syndrome that impair functional communication

ST-7.4: Requirements for Speech Therapy Visits

ST-7.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Member's most recent standardized evaluation scores, percent of functional delay, or standard deviation (SD) score, when appropriate, for the member's diagnosis/disability.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the individual's current level of functioning.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-7.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for Augmentative and Alternative Communication (AAC) are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a lack of functional, verbal communication
 - ◆ The individual presents with a language or speech production disorder that prevents functional communication across environments.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a language or speech disorder that requires a form of AAC.
 - ◆ The individual's communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status.
 - ◆ Objective findings, including standardized tests and observational assessments, support a functional impairment in communication.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.

- ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-7.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence

ST-7.4.4: Discharge Criteria

- The individual has acquired a method of functional communication that does not impair participation in health, safety and independence status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-7.4.5: Referral Guidelines

- Physical and Occupational therapy for motor coordination and support for utilization of AAC technology
- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Vision specialist for checking vision or field cuts to ensure visual access to appropriate materials
- Neuropsychologist for depression and behavior concerns
- National and local agencies for trial access to Speech Generating Devices (SGD)
- National and local sources of funding for SGD

ST-7.5: Presentation

- There are two main categories of individual's that will utilize AAC: congenital disabilities and acquired disabilities.
 - ◆ Congenital disabilities include:
 - genetic disorders;
 - motor speech disorders (e.g., developmental apraxia of speech);
 - cerebral palsy;
 - intellectual disabilities; and
 - autism spectrum disorder (ASD);
 - ◆ Acquired disabilities include:
 - traumatic brain injuries;
 - neurodegenerative diseases (e.g., Parkinson's, amyotrophic lateral sclerosis (ALS), multiple sclerosis, supranuclear palsy, muscular dystrophy, primary progressive aphasia and apraxia);
 - cerebrovascular accidents;
 - temporary conditions (e.g., intubation, concussion); and
 - disability following surgeries (e.g., glossectomy, laryngectomy)
- AAC needs for these individuals can vary and change over time depending on the condition. AAC can help aid or build areas of expressive and receptive communication skills.

AAC Systems-Forms

- AAC systems can be divided into two categories: unaided and aided communication systems.
 - ◆ Unaided communication systems rely on the individual's body to convey the message. Examples include body language, sign language and/or gestures.
 - ◆ Aided communication systems require the use of tools or equipment using either electronic or nonelectronic support. Examples range from low/light tech to high tech.

Unaided No-tech	Aided Low/Light tech	Aided High tech
➤ Body language ➤ Facial expressions ➤ Sign language ➤ Gestures ➤ vocalizations	➤ Pictures ➤ Photographs ➤ Objects ➤ Letters ➤ Words/phrases ➤ Writing ➤ Communication books/boards	➤ Speech generating devices (SGD) ➤ Single message devices ➤ AAC apps and/or software for devices

- Speech generating devices can be digitized or synthesized speech.
 - ◆ Digitized speech output is natural speech that an individual can use that has been pre-recorded and stored. Can be restrictive due to using only pre-recorded messages. **Advantage** is that messages with a high level of intonation such as singing songs can be included.
 - ◆ **Synthesized speech output** is computer generated speech that is controlled by the individual to create messages. **Advantage** with the inclusion of the alphabet the patient can self-generate novel messages.
 - **Symbols:** are utilized to represent actions, objects and concepts and can include photographs, letters, spoken words and objects.
 - **Display:** A display has symbol choices for the individual using the AAC system. It can include the type of screen that will be used to communicate and access vocabulary.
 - Fixed: The display is static and does not change. Most commonly used with communication boards or low/light tech devices.
 - Dynamic: The display changes when a selection is made. Can be organized by large categories and then broken down into specific categories. Most commonly associated with high tech communication devices.
 - Hybrid: A display that includes both fixed and dynamic areas. Typically the static area is used to access high frequency vocabulary/choices.
 - Visual scenes: Displays may be fixed or dynamic and organized with photographs and/or virtual environments to show an entire scene. Spoken messages can be embedded in the scenes and are known as "hot spots".

- Vocabulary Selection is divided into two categories: core and fringe vocabulary.
 - ◆ Core vocabulary is associated with words/pictures/concepts that are high frequency items and often communicated on a daily basis. Core vocabulary makes up 80% of words.
 - ◆ Fringe vocabulary are context specific words/pictures that are used at a lower-frequency.
- Selection Techniques is divided into direct selection and indirect selection.
 - ◆ Direct selection- individuals select the desired symbol directly. Examples include: both electronic/non-electronic, direct physical touch, generated activation (eye gaze, joystick, mouse). More effective communicator requiring more accurate motor abilities.
 - ◆ Indirect selection- individuals select the desired symbol using auditory, tactile or visual support (scanning). Scanning can be presented in a row, column or quadrant on a communication device. Less effective communicator and requires less motor control.

ST-7.5.1: Assessments and Measurement Tools

- Augmentative and Alternative Communication Profile: A Continuum of Learning
- Checklist of Communication Competencies, Revised
- Functional Communication Profile, Revised
- Social Networks: A Communication Inventory for Individuals with Complex Communication Needs and their Communication Partners.
- The Test of Aided-Communication Symbol Performance
- Communication Matrix

ST-7.6: Speech Therapy Management

ST-7.6.1: Clinical Interventions:

Treatment Options	Description
➤ Augmented Input (also known as natural aided language or aided language modeling)	➤ Receptive language training approach using a communication partner who uses spoken words in combination of AAC strategies.
➤ Behavioral Interventions	➤ Teach desired behaviors utilizing behavioral/operant concepts of learning. Involve assessing antecedents that elicit a behavior and the consequences that follow.
➤ Discrete Trial Training (DTT)	➤ Approach to teaching in simplified and structured steps. Instead of teaching an entire skill, the skill is broken down to teach each step at a time.
➤ Milieu Training	➤ Training including incidental teaching, time delay and mand-model procedures in a naturalistic environment
➤ Core Vocabulary Approach	➤ Teaches an initial set of core vocabulary that consists of common words used in the individual's environment. Once concepts are learned, more vocabulary (words, pictures, etc.) is added to the AAC overlay.
➤ Language Acquisition Through Motor Planning (LAMP)	➤ An approach based on selecting words and sentences motor learning using a high tech AAC device. Involves a combination of readiness to learn, shared engagement, consistent motor planning, single words, auditory signals and natural consequences
➤ Picture Exchange Communication System (PECS)	➤ Intervention program that promotes the individual's expressive communication abilities using prompting and reinforcement strategies. Instructional phases of the program consist of how to communicate, distance and persistence, picture discrimination, sentence structure, answering questions, responsive and spontaneous commenting
➤ Pragmatic Organization Dynamic Display (PODD) Communication Books	➤ A systems of selecting and organizing symbols/words so that individuals can communicate with partners in all environments.
➤ Total Communication (TC)	➤ The use of all modes of communication, including sign language, spoken language, gestures, facial expressions and cues.
➤ Visual Prompting Strategies	➤ The use of visual cues to help individuals maintain attention, understand spoken language, sequence events, organize environments or increase independence when completing a task
➤ Visual Schedules	➤ Use of objects, photographs, written words or other symbols to cue an individual to sequentially complete an activity. These are used to increase receptive understanding.

ST-7.6.2: Specific Treatment Considerations

- Evidence supports the fact that carefully selected AAC including SGDs are a reasonable, necessary, and effective treatment for individuals with significant communication deficits. AAC/SGDs can support oral language development in young children with developmental delays. AAC can enable people with chronic delays to become more independent in the community, communicate functional needs more specifically, participate more fully in social exchanges, tell stories, and make telephone calls. AAC can enable people to return to work, and can allow for continued quality of life for those with neurodegenerative disease.
- When teaching how to use AAC/SGD devices evidence-based practice suggests the following:
 - ◆ Model use of it. Family, teachers, therapists should model communication on the device. Model at the same level of complexity as the user. If user is at one hit or single icon, then model at that level.
 - ◆ Always respond to all AAC communication immediately, appropriately, and consistently. Provide the requested item, respond verbally to what is communicated.
 - ◆ Prompt patient/client to use the device if using body language or gesture to initiate a request (i.e. if indicating a want for something out of reach, prompt to use the device)
 - ◆ Wait for pause or stop if patient/client is engaging in challenging behavior, and then prompt use of the AAC device. The communication strategy you are asking the patient to use must be quicker and more effective than the behavior. You may need to use additional strategies such as having low tech "break" symbols throughout the environment.
 - ◆ Ensure that the AAC device is available across settings
 - ◆ Encourage use of the device by creating opportunities throughout the day in naturally occurring instances
 - ◆ Teach peers and family members how to use the device
- Treatment for patients who use AAC/SGD should be concentrated on communicative competence, or the ability to communicate functionally in their natural environments in order to meet daily needs. This includes 4 major skills areas:
 - ◆ Linguistic competency which is the ability to learn and apply vocabulary and grammar. This would include core and fringe vocabulary and sentence construction.
 - ◆ Operational competency which is the technical skills required to use the AAC system or the operation and maintenance of communication system.
 - ◆ Social competency or the ability to understand and implement the social rules of interacting with others through use of AAC.
 - ◆ Strategic competency which is the ability to effectively prevent or repair communication breakdowns.

- Consider the following domains when measuring meaningful outcomes following AAC implementation:
 - ◆ Achieving goals supported or requested by the person using the AAC, their family, and people with whom they interact
 - ◆ Positive changes to participation in activities
 - ◆ Increases in communicative competence
 - ◆ Improvements in other areas of communication skills and abilities (like speech, language, literacy, fluency, voice, and pragmatics) which are targeted goals within the AAC intervention.

ST-7.6.3: Self Management Technique

- Consistent completion of an individualized home exercise program
- Caregiver training and education
- Daily utilization of the specific form of AAC implemented
- Self cueing techniques to utilize AAC when appropriate

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ST-8: Autism Spectrum Disorder

ST-8.1: Related Terms**ST-8.2: Definition****ST-8.3: Symptomatology****ST-8.4: Requirements for Speech Therapy Visits****ST-8.5: Presentation****ST-8.6: Speech Therapy Management**

ST-8.1: Related Terms

- Autism
- Autistic disorder
- Asperger's disorder
- Pervasive developmental disorder

ST-8.2: Definition

Autism Spectrum Disorder (ASD) is a set of neurodevelopmental disorders characterized by core deficits in communication and reciprocal social interaction; accompanied by restricted and stereotypic behaviors and interests that impact the child's interaction with his/her environment. The core symptoms are usually accompanied by developmental delay in one or more area. Under the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), previously recognized subtypes of autistic disorder, Asperger's disorder and pervasive developmental disorder not otherwise specified, have been eliminated and integrated under the diagnosis of ASD. For the purposes of this document, autistic disorder and autism spectrum disorder (ASD) will be used interchangeably

ST-8.3: Symptomatology

Symptoms will range both in number, intensity, and level of severity and ultimately to their functional effect on an individual's communication. It should be noted that it is rare for children to have all of the symptoms listed. For instance, not responding to their name by twelve months is a significant symptom by itself but having the ability to handle change is not exclusive of a diagnosis. Additionally, many children with autistic disorder have eye contact, but it may be reduced or unusual in its presentation.

➤ Early Intervention: Red Flags	➤ Does not respond to name ➤ No social smile ➤ Reduced or atypical eye contact ➤ Seems to tune others out or are in their own world ➤ Prefers to play alone or be alone ➤ Demonstrates inability to play with toys in the typical way ➤ Difficulty understanding of people's feeling or their own ➤ Has low to no social skills ➤ No speech or delayed speech ➤ Get upset by minor changes ➤ Has obsessive interests ➤ Has repetitive, odd or stereotypic behaviors ➤ Flaps hands, rocks body or spins in circles ➤ Have unusual reactions (over or under-sensitivity) to the way things sound, smell, taste look or feel ➤ Not engaged in pretend play (if older than 2 years) ➤ Loss of speech, babbling or social skills at any age
➤ Clinical Symptoms: All Ages	➤ Functional Effects

Autism Spectrum Disorder

➤ Impaired social interaction/pragmatic language	➤ Reduced or atypical eye contact ➤ Gets too close or too far away when speaking ➤ Difficulty interpreting non literal language including but not limited to inferences, sarcasm, metaphors, and idioms ➤ Difficulty reading facial expressions and body language ➤ Difficulty understanding the rules of conversation ➤ Reduced or unusual responses to social interactions ➤ Does not generally share observations or experiences with others ➤ Difficulty understanding and participating in group interactions ➤ Difficulty identifying thoughts/feelings of themselves and others ➤ Difficulty maintaining friendships and/or relationships ➤ Difficulty with topic maintenance including conversational turn taking skills
➤ Impaired expressive language	➤ Difficulty or inability to verbally communicate needs/wants expected for age ➤ Echolalia-repeats words or phrases ➤ Idiosyncratic language including “scripted” or repetitious language ➤ May be non-verbal ➤ May require other communication systems such as using pictures, sign language or communication devices ➤ Difficulty integrating gesture with expressive language.
➤ Impaired receptive language	➤ Difficulty or inability to understand information and follow instructions expected for age ➤ Difficulty with reading comprehension abilities ➤ May require visual support for communication systems such as pictures, sign language or communication devices
➤ Impaired Speech	➤ Difficulty producing speech sounds correctly for chronological age ➤ Abnormal use of pitch, intonation, rhythm or stress while speaking ➤ Speech is abnormally loud or quiet ➤ Apraxia ➤ May use no speech
➤ Impaired oral motor/feeding skills	➤ Oral motor difficulties related to neuromusculature or structural anomalies ➤ Food adversities related to texture, taste or temperature ➤ Poor management of secretions
➤ Impaired Cognitive skills	➤ Range from mild to profound deficits in areas of attention, memory, perception, organization, orientation, processing speed, problem solving, reasoning and executive functioning.
➤ Related Behaviors	➤ Resistance to being held or touched or seeks deep touch ➤ Demonstrates little safety or danger awareness ➤ Prefers to be alone, aloof or overly-friendly ➤ Has obsessive interests ➤ Ritualistic or compulsive behavior patterns ➤ Resists changes in the environment (people, objects, places, times) ➤ May have challenging behavior

- Treatment for ASD is child-centered and focuses on the needs and goals of the individual and their family. Individualized assessment and an intervention plan that promotes collaboration between the family and professionals to achieve best results are indicated.
- Care for individuals with ASD may occur throughout the lifespan. Early intervention is considered key to minimizing the impact of ASD on both the child and family.

ST-8.4: Requirements for Speech Therapy Visits

ST-8.4.1: Documentation Requirements

- Standardized assessments administered at least annually that support more than 1 SD below the mean in composite area.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-8.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into speech therapy treatment secondary to a diagnosis of autism are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in communication secondary to a diagnosis of autism spectrum disorder
 - ◆ The individual presents with a functional speech and language disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a speech or language impairment secondary to ASD diagnosis.
 - ◆ The individual's communication skills are not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety, and independence status.
 - ◆ Standardized tests support a delay of more than 1 standard deviation below the mean in a composite area of speech and language functioning.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.

- ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
- Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-8.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
- ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence
- Current research varies in the frequency and duration documented across the autism spectrum. However, research suggests that there is significant difference in performance measured immediately after practice versus long term generalization of a skill. The transfer of skills into activities of daily living requires retention and generalization into new environments. Extensive practice of a single target can lead to prompt dependency or the inability to self regulate and self-correct.¹ Random practice treatment leads to increased self-regulation independent of the level of treatment intensity². Therapy techniques that incorporate skills in naturalistic context provide increased opportunities for functional application in daily living.¹ The overall duration of treatment may be determined by the effectiveness of the type of practice utilized and the complexity of the skills addressed. Higher treatment frequency may not correlate to better outcomes.
- Comprehensive developmental early intervention programs have been shown to improve cognition, adaptive behavior, communication, and symptoms associated with autism. Frequency and intensity for the programs range from 13 to 25 hours per week.^{3,4,5} These studies support early detection and early intervention services for autism diagnosis.

- Flippin and colleagues⁶ reported improvements with the utilization of music, Pivotal Response Training (PRT), DIR floortime, Symbolic play, and Picture Exchange Communication System (PECS) therapy techniques. The study reported that parent and teacher interventions were more effective with specialist support. Therapy intensity ranged from 30 minutes to 120 minutes per week. Higher treatment intensity did not equate to better outcomes.
- Mohammadzaheri et al⁷ reported a treatment frequency duration of 2 times a week for 12 weeks using Pivotal Response Treatment (PRT) and Applied Behavior Analysis (ABA). Treatment in a naturalistic setting (PRT) was reported to show a higher increase in Mean Length of Utterance (MLU) than structured ABA therapy. Significant gains were reported with a treatment frequency of twice a week for 12 weeks for children with ASD.
- The JASPER (Joint Attention Symbolic Play Engagement and Regulation) program was reported to increase social communication skills for minimally verbal children with autism age 3 to 5 years. Treatment duration of this study was 12 weeks with twice weekly 30 minute sessions.⁸
- A pilot study⁹ regarding the TEACCH program supported that significant gains were made in social skills with a treatment frequency of 20 sessions over a six month duration. Children with higher functioning autism were documented to have increased developed social skills by the end of the study.
- Karasi and colleagues¹⁰ reported outcome measures for treatment of minimally verbal children with autism (less than 20 words) who had previously been provided early intervention. Treatment approaches included behavioral intervention, JASPER, Enhanced Milieu Teacher (EMT), and the inclusion of a speech generating device (SGD). Results demonstrated significant gains in spontaneous communication with a moderate frequency of treatment (2 sessions of 1 hour per week for 24 weeks). The inclusion of the SGD in the initial phase of treatment prompted a higher level of spontaneous communication than verbal language alone.
- Lorah et al¹¹ reviewed research regarding speech generating devices and autism. Studies reported demonstrated that utilization of SGD with socially accepted devices (smart phones, tablets, ect.) prompted improvement in communication acquisition. Intensity for services ranged from 3 to 24 sessions. A study by Thiemann-Bourque et al¹² reported SGD use along with peer mediated training was supported in preschoolers with autism. Intensity and duration utilized for the study ranged from 9 to 19 weeks with 17 to 31 therapy sessions. Therapy approaches that include typically developing peers have been shown to increase peer interaction, reciprocity and overall communication skills.
- 20 programs for pragmatic skills were researched by Parsons and colleagues¹³. Duration ranged from 4 to 52 weeks and intensity ranged from 4 to 104 therapy hours. Parent involvement was reported to be essential for the highest effectiveness of treatment. Group sessions were reported to provide increased benefit versus individual treatment sessions, and typically developing peers as models showed promise as a method of increasing effectiveness

- Yoder et al¹⁴ reported a comparison study between PECS was compare to Responsive Education and Prelinguistic Milieu Teaching (RPMT). The intensity reported was 3 20 minute sessions per week for 6 months. Results concluded that PECS training increased picture communication system more than the comparison treatment techniques focusing on generalization.
- Individuals who are functionally stable, and have an adequate means of communication are candidates for periodic or intermittent therapy services. This clinical presentation is often observed in older children who have reached a functional level of communication appropriate for their developmental level.¹⁵

ST-8.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-8.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- Educational and community based programs for support
- Respite Care
- Behavioral intervention
- Vocational services
- Nutritionist and Gastroenterologist for feeding concerns
- Psychologists
- AAC Specialist for assistance with implementation of augmentative or alternative communication

ST-8.5: Presentation

Early Intervention

Early intervention (EI) programs are provided to children between the ages of 0 and 5 years, with or at risk for developmental disabilities. The direct involvement of parents, professionals, and peers is an important element to an effective early intervention program.

Plauché Johnson¹⁶ describe the initial indicators of child at risk for ASD.

"For children who have autism (with or without coexisting global developmental delays), the development of social skills and language is more delayed and characteristically 'out of sync' with motor, adaptive and cognitive functioning. The discrepancy between the development of social skills and general development is one of the most important defining criteria"

Delays in the areas of joint attention is reported to be the most significant indicator of early ASD. Parents often are able to identify that the infant's interpersonal relationship development is not progressing as expected. Other red flags include delays in the areas of social orienting, verbal communication including responding to name, pretend play, prelinguistic skills, absent or delayed speech and language regression.¹⁶

Early identification of these red flags can allow parents and caregivers to access necessary early intervention services at the earliest appropriate time. Early intervention services are correlated with improvement in long term communication function^{17, 18}. Early intervention services are supported as an important component for treatment of children with ASD.

One of the key factors in the successful implementation of an early intervention program is parental support. Parent implemented intervention has been shown to be effective in increasing communication skills in children with developmental delays including ASD^{1, 19, 20, 21, 22}. Parents and caregivers can be successful in implementing intervention in a natural home environment.

Child and Pre-teen

The social challenges presented by the diagnosis of ASD can cause significant difficulties for school age and pre-teen children. Routine daily activities in the areas of academics, extra-curricular activities, and peer relationships can be challenging. Intervention shifts from developmental skills to social communication and compensatory strategies. Participating in activities with typically developing peers such as a birthday party or an amusement park field trip can pose unique challenges for this age group. Speech Language Pathologists can have a significant impact towards assisting the parent and child to make accommodations and preparations to be included in peer activities. The public school system offers support in the areas needed for success in an academic setting.

Teenage and Young Adult

Functional communication skills become even more prominent in treatment as the child enters the teen years. Increased social challenges associated with high school, college, and vocation, further support the need for direct instruction and correlation with functional life skills individualized to the patient. The long term living environment and employment status/expectations play a significant role in the implementation of services at this age. Speech and language intervention can also assist with cognitive and reasoning skills to promote independent living. Adequate communication skills in the workplace are essential to long term vocational success. Focusing on skills necessary for independent living versus developmental language goals is a critical component to successful therapy intervention for this age group.

Adult

The focus of therapy should continue to be communication for daily living and vocational skills. Consultative treatment can be helpful to support the member in adjusting to changing life circumstances (new job, promotion, new living situation, etc.).

ST-8.6: Speech Therapy Management

ST-8.6.1: Clinical Interventions

- A variety of different types of speech, language, and communication interventions have been developed and utilized for treatment of children with autism. Autism is developmental condition that requires consistent modification of the treatment plan and strategies to address concerns. The symptoms of ASD vary widely dependent upon the stage of development. Treatment approach should be individualized for each child relating to their developmental level. The National Professional Development Center of Autism Spectrum Disorder (<http://autismpdc.fpg.unc.edu/evidence-based-practices>) provides a compendium of research recommending evidenced based treatment for autism at various development levels. The section below contains a brief description of treatment models that can be used to treat ASD. The first step in choosing a program model is prioritizing the daily needs of functional communication in combination with the best predictor of positive long term outcomes. The treatment approaches described below are not intended to be an exhaustive list of treatment options, but a reference point for review. The American Speech, Language, and Hearing Association provides an evidence map resource (<http://www.asha.org/EvidenceMapLanding.aspx?id=8589943678&recentarticles=false&year=undefined&tab=allTab>) for additional information regarding evidenced based treatment approaches for ASD.

Augmentative and Alternative Communication

- Augmentative and Alternative communication modes have proven to provide meaningful benefits to individuals with ASD with limited verbal ability^{11, 23}. Methods or devices to supplement (augmentative) or replace (alternative) communication are included in this category.
 - ◆ Speech Generating Devices (SGD) are easily understood by a wide variety of communication partners making this a functional means of communication for individuals with limited functional verbal speech. An extensive variety of devices are available to meet the individualized needs of the patient. An additional evaluation by a specialist is often needed in order to appropriately choose the most appropriate device for an individual.
 - ◆ Picture Exchange Communication System (PECS) is a communication system involving an exchange of pictures as a method of expression. The system progresses through a hierarchy of increased communication demands. PECS is based on behavior shaping principles. The program encourages independent functional communication²⁴.
 - ◆ Sign Language is often used to augment communication especially in early intervention. Sign language can be a functional means of communication. However, the communicator is limited to only those communication partners who understand sign language or very often, the individual's version of the signs acquired.

Behavioral Modifications Treatment Approach

- Behavioral modification treatment approaches utilize methods of shaping behavior/responses by utilizing fundamental operant conditioning principles. They address replacement and alternative responses to challenging behaviors. Common methods of treatment that are included in this category are described below.
 - ◆ Applied Behavior Analysis (ABA) is a method of individualized direct behavioral response training. Specific behaviors and skills are addressed in a formal treatment setting with varying reinforcement methods.
 - ◆ Functional Communication Training addresses the communication intent behind challenging behaviors in order to replace them with appropriate, more effective strategies utilizing the ABA approach.
 - ◆ Pivotal Response Training (PRT) is a play based treatment which takes place in the child's natural environment. Natural reinforcement is emphasized in this approach. For example, during play if a child exhibits communicative intent for a certain object or action during play, the child is rewarded with that item. It differs from ABA in the implementation of a treatment in naturally occurring circumstances.
 - ◆ Millieu Therapy supports a naturalistic design for teaching in daily activities utilizing a variety of strategies.
 - ◆ Positive Behavior Support (PBS) utilizes the principles of ABA to address problem behaviors. The clinician interprets the communicative intent of the behavior in order to replace with an appropriate behavior that fulfills the intended purpose.

Cognitive Behavioral Therapy

- Cognitive Behavioral Therapy utilizes the behavioral approach with cognitive development principles in order to develop communication and eliminate problem behaviors. The foundation of this approach is that changes to the cognitive patterns of thinking can bring about changes in behavior. Programs focus on assisting individual with ASD in their ability to manage emotions and regulate impulsive behaviors.
 - ◆ Exploring Feelings- is a program designed to specifically address negative and positive emotions. Structured sessions to address emotions are designed to assist in learning how to appropriately manage these emotions.
 - ◆ Rational Emotive Behavioral Therapy is individualized to help the individual understand his or her emotions in order to more effectively manage their negative responses and promote a more positive outcome.
 - ◆ Social Stories are a method of preparing individuals for challenging social situations. A story is written in simple terms to describe a specific event (loading the bus for school, participating in extracurricular activities, restaurant outings, etc.). These situations are specific to the needs of the individual. This method can be a very functional method of teaching meaningful social skills to older children and teenagers.
 - ◆ Denver Model is a naturalistic environment based treatment program designed to collaborate with peers in a school setting, parents/caregivers, and individual therapy sessions. The emphasis is on social development in a form that can be utilized in a variety of natural settings.

Parent Implemented Intervention

- Parent Implemented Intervention techniques are designed to empower the child's caregivers to implement instruction in activities of daily living in their natural environment. Engaging the caregivers as a partner in treatment gives the child an individualized trained caregiver to generalize and support goals across all environments. The Hanen Center (<http://www.hanen.org/Programs/For-Parents.aspx>) specializes in development and research of programs developed for parent training.
 - ◆ More than Words- This program focuses parent centered training for increasing language in routine daily activities. The activities support increased communication and social skills in young children with ASD.
 - ◆ Talkability- This program is designed for teaching pragmatic skills for children with ASD. Emphasis is placed on emotional intelligence and nonverbal language. Parents are given meaningful and feasible ways to support their child's social development.
 - ◆ Son-Rise is a child centered program focusing on relationship development. The caregivers play with the child including repetitive behaviors as more appropriate play skills are modeled. The program is used for both children and adults with disabilities.

The Treatment and Education of Autistic and related Communication-handicapped Children (TEACCH) program provides a wide variety of intervention services for children and adults with ASD. Services provided include evaluations, direct intervention, counseling, and vocational assistance.

Social Communication and related programs

- Social communication based programs are developed based on a relationship based interactive approach. Social skills groups with peers as mentors can be utilized as socially appropriate communicative behavior is modeled by same age peers. Programs can also be individualized based on strengthening personal relationships with others. Direct teaching of social situations can also be implemented to specifically address difficult social situations. Multiple approaches and program are available to address the specific needs of patients with ASD.

ST-8.6.2: Specific Treatment Considerations

- Management of this condition will vary depending upon the patient's individual need. The presentation of ASD varies widely between patients.
 - ◆ 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.
 - ◆ 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.
 - ◆ Parent implemented intervention is reported to be effective in increasing communication, reducing problematic behaviors, and supporting generalization of skills. Caregivers should be empowered with appropriate training and an intervention plan developed specifically for each family's lifestyle.
 - ◆ Provide parents with information regarding community support groups and/or programs.
 - ◆ Continue to assess the child because symptoms will change over time. Methods of reinforcement and motivation are often very specific to patients with ASD. Continually assessing what is of communicative value to the patient provides the most opportunity for meaningful progress.
 - ◆ Select and implement appropriate Augmentative or Alternative Communication system for those children with limited functional verbal communication.
 - ◆ Progress expectations should include progression in social communication that support the patient's ability to maintain appropriate social relationships, communicate functionally, and participate in activities of daily living.

Inappropriate exclusion of services

The following were developed by the American Speech, Language, and Hearing Association regarding inappropriate exclusion of coverage of services for members with ASD (American Speech-Language-Hearing Association. Autism Practice Portal, Available at

[https://www.asha.org/PRPSpecificTopic.aspx?folderid=8589935303§ion=Assessment#Inappropriate Exclusion of Services](https://www.asha.org/PRPSpecificTopic.aspx?folderid=8589935303§ion=Assessment#Inappropriate%20Exclusion%20of%20Services).

- Cognitive referencing. This practice of comparing IQ scores and language scores to determine eligibility for speech-language intervention is based on the assumption that language functioning cannot surpass cognitive levels.
- Chronological age. Research has shown that infants, toddlers, and preschoolers with ASD do benefit from communication services and supports. In addition, individuals with autism can continue to develop communication abilities across their lifespan
- Diagnostic label. A diagnostic label on its own typically reveals very little about the individual's communication abilities; however, in the case of the autism spectrum, social communication impairment is encompassed in its very definition. Therefore, the diagnosis of ASD indicates the inclusion of communication services and supports rather than the exclusion of services.
- Absence of cognitive or other prerequisite skills. Research has shown that individuals (including those with ASD) who do not demonstrate supposed prerequisites can benefit from appropriate communication services and supports.
- Failure to benefit from previous communication services. Lack of progress may be tied to issues other than factors associated with the individual, such as inappropriate goals, unsuitable intervention methods, failure to incorporate assistive technology, or insufficient methods in measuring outcomes. Access to communication services and supports should not be denied merely because an individual failed to progress as a function of prior therapy; rather, previous experiences should be examined in order to determine ways in which communication services and supports could be better tailored to meet the individual's unique communication needs.
- Lack of funding or adequately trained personnel. Lack of funding and expertise often fuels exclusionary practices. If trained personnel are not available, there is an obligation either to find trained personnel or to train existing personnel. Similarly, lack of funding does not constitute a reason for exclusion from communication services and supports. IDEA states that identified needs have to be met.

Autism Mandates

- American Speech Language and Hearing Association Autism Mandates
<https://www.asha.org/Advocacy/state/State-Insurance-Mandates-Autism/>

ST-8.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- Augmentative and alternative communication devices
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

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ST-9: Bilingual Service Criteria**ST-9.1: Related Terms****ST-9.2: Definition****ST-9.3: Section Intentionally Left Blank****ST-9.4: Requirements for Speech Therapy Visits****ST-9.5: Presentation****ST-9.6: Speech Therapy Management**

ST-9.1: Related Terms

- L1 and L2 - native or mother tongue vs. second language.
- Home Language – Language spoken in the home
- Academic Language – Language used to communicate in academic contexts, teacher discourse, and textbooks.
- Dual language learners- Children who have systematic exposure to more than one language.
- English Language Learners (ELL) - An individual who is learning English as a second (or third) language.
- Positive transfer- A shared linguistic skill is appropriately generalized across more than one language resulting in correct production.
- Negative transfer- A linguistic skill is generalized inappropriately across languages resulting in an incorrect production.

ST-9.2: Definition

- The ability to communicate in two languages. Proficiency in either language may fluctuate based on need or the purpose of language use.

Types of Bilingualism

- Acquisition of the Languages
 - ◆ **Simultaneous**-Bilingualism is the “first” language developed by exposure to both languages in the home setting.
 - ◆ **Sequential**- L1 is acquired from birth in the home. L2 develops from exposure in a secondary setting (academic, social, or vocational).
- Age of Acquisition
 - ◆ **Early bilinguals** begin learning L2 in childhood.
 - ◆ **Late bilinguals** begin to acquire L2 as adults.
- Context of Language Acquisition
 - ◆ **Subtractive**- The home language is the minority language and is replaced by the L2.
 - ◆ **Additive/Immersion**-L1 is used temporarily until L2 is developed.
- Language Registers
 - ◆ **Basic Interpersonal Communication Skills (BICS)**, also known as conversational language, typically takes two to three years to acquire.
 - ◆ **Cognitive Academic Language Proficiency (CALP)**, also known as academic language, takes five to seven years to develop.

ST-9.3: Section Intentionally Left Blank

ST-9.4: Requirements for Speech Therapy Visits

ST-9.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Standardized assessments administered in the individual's primary language at least annually that support more than 1 SD below the mean in composite area. If a standardized assessment is not available in the patient's primary language, please refer to Best Practice for Assessment section below for required evaluation information.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-9.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for bilingual service delivery are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected speech or language impairment.
 - ◆ The individual presents with a functional communication disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a speech or language disorder in the individual's primary language.
 - ◆ The individual's speech and language skills are not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Standardized tests in the patient's primary language support a delay of more than 1 standard deviation below the mean in a composite area.
 - ◆ The patient presents with identifying characteristics that support a language disorder, and not a language difference.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.

- ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
- ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
- Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-9.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings
 - ◆ Presence of and number of complicating factors and comorbidities
 - ◆ Natural history and chronicity of condition
 - ◆ Expectation for functional improvement with skilled intervention
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence

ST-9.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Language function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-9.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- English as a Second Language (ESL) community and educational resources
- Behavioral intervention
- Vocational services

ST-9.5: Presentation**Typical Second Language Acquisition Processes**

- Silent period
 - ◆ The silent period occurs when a client is first exposed to a new language. This stage typically ends between six months to a year. Minimal expressive language is noted during this time as the client is absorbing the vocabulary and syntax of the new language.
- Code switching
 - ◆ Code switching refers to use of words or phrases from one language in the sentence or discourse of the other language. It is used to fill linguistic gaps by early learners or for a specific communicative purpose by the advance speaker.
- Language Loss/Attrition
 - ◆ A reduction in linguistic skill in one language as a result of a rapid focus shift to a second language
- Cross-linguistic transfer
 - ◆ The generalization of shared language elements between two languages. This process may be bidirectional and involves both positive and negative transfer.
- Translanguaging
 - ◆ Bilingual speakers using their full linguistic repertoires without placing more regard or prestige on either language

Language Difference	Language Disorder
➤ Communication behaviors meet the norms of the primary speech community but do not meet the norms of Standard English.	➤ Communication behaviors do not correlate with accepted norms across languages. Impairment in understanding others, or sharing thoughts, ideas and feelings.
➤ A language difference represents variances in articulation and language resulting from exposure to more than one language.	➤ A language disorder represents delays or errors observed in the acquisition of any language. The disorder must be evident in the patient's native language(s).
➤ Phonology patterns that are the result of the influence of a second language. This may include accent and dialectical variations.	➤ Phonological patterns extending across phonemes present in both languages that exhibit a disorder in the developmental sequence appropriate for the language referenced.
➤ Syntax and Morphological patterns vary across languages. Errors in grammatical structure should be evaluated to determine if the errors result from L1 interference across existing second language grammar rules.	➤ Syntax or Morphology delays or errors present in one or both languages as indicated in the grammatical rules for the languages assessed.
➤ Semantic development may vary across languages. Bilingual children may acquire words in one language in the home environment, and social and academic vocabulary in a second language.	➤ Delayed semantic development when vocabulary of both languages is combined and evaluated for developmental norms.
➤ Pragmatic or social language behavior is culturally appropriate for the primary language, although expectations for the second language (especially in academic settings) may differ.	➤ Social language development is delayed in comparison to the pragmatic language customs of L1.
➤ Must account for the process of language development, language loss, impact of language dominance fluctuation and influence of dual language acquisition.	➤ True communication disorders will be evident in both languages used by an individual.

- Language development characteristics of monolingual children with language impairment can overlap with the typically developing English L2 learner. In addition, those same characteristics will be significant in comparison to typical English L1 development. Listed below are some indicators or “red flags” that are indicative of a delay or disorder in bilingual individuals. The identification of these red flags in case history or referral forms should be noted and carefully considered.
- ◆ Family history of speech-language impairment
 - ◆ Speech and Language development is slower in comparison to siblings
 - ◆ Atypical peer interactions
 - ◆ Intelligibility is below expected norms in both languages
 - ◆ Limited vocabulary acquisition across languages
 - ◆ Delayed developmental pre-linguistic and play skills

Best Practice for Assessment:**Cultural Competence**

- Cultural competence refers to the ability to understand and appropriately address the values and customs of different cultures. As it applies to speech language pathology, expectations exist regarding the consideration of cultural factors. Some important elements to note include:
 - ◆ Consider the client and caregivers cultural customs. This includes lifestyle considerations such as dress, diet, and holiday celebrations.
 - ◆ Identify both explicit cultural variables discernible on the surface—such as external symbols, food, and language—and implicit variables, including religious practices and beliefs, spiritual beliefs, educational values, age and gender roles, child-rearing practices, and fears and perceptions.
 - ◆ Power differentials- Some cultures may feel uncomfortable communicating with the therapist the “expert” in this area. They may be hesitant to voice objections or give feedback due to this.
 - ◆ Incorporating cultural preferences and traditions into treatment demonstrates an important respect for the patient and the caregivers.
 - ◆ Avoid pressuring the patient and family to participate in aspects of treatment that they do not feel are appropriate for their life.
 - ◆ Social language norms are particularly relevant in assessing pragmatic disorders. Social customs vary widely across cultures, and consideration of their impact on pragmatic communication is essential.
- The American Speech Language and Hearing Association has developed a guidelines for culture awareness that can be found at <https://www.asha.org/Practice-Portal/Professional-Issues/Cultural-Competence/>

Assessment Procedures

- Use an interpreter if necessary: a person trained to translate written text from one language to another. Additional information is available under Collaborating with Interpreters: <https://www.asha.org/Practice-Portal/Professional-Issues/Collaborating-With-Interpreters/>.
- Case History: Conduct a thorough family/caregiver interview including the following:
 - ◆ Age, manner and exposure of acquisition of the language(s)
 - ◆ Dialect of the language utilized
 - ◆ Language(s) used at home, school, etc.
 - ◆ language(s) used with the family
 - ◆ Length and exposure to each language
 - ◆ Language of academic instruction
- Questionnaires
- Assessment tools- Select appropriate assessment tools individualized to the patient in order to evaluate the five domains of language: phonology, morphology, syntax, semantics, and discourse (pragmatics).
 - ◆ Criterion-referenced assessment tools can be helpful to identify areas of strengths and weaknesses.

- ◆ Use norm referenced tests appropriate to the population/background of the individual. Standardized test scores are not valid for an individual who is not reflected in the normative sample for a given assessment. These assessments can provide informative descriptive information about abilities/limitations.
- ◆ Use culturally and linguistically adapted test equivalents in both languages to compare areas of deficit.
- ◆ Utilize Dynamic Assessment: involves pretest of a skill, an intervention to address that skill and then a post test to determine if there was progress. Additional information is available at ASHA:
<https://www.asha.org/practice/multicultural/issues/Dynamic-Assessment/>
- Language and speech sampling: collect clinical information in both languages
- Speech Sound Assessment
 - ◆ Shared and unshared sounds/processes including consonant clusters/position of sounds in words/syllables- Additional information can be found at Phonemic Inventories Across Languages <https://www.asha.org/practice/multicultural/Phono/>
 - ◆ Developmental acquisition within each language
- Error Assessment
 - ◆ Developmental errors- Errors that are normal in childhood development
 - ◆ Native language influence errors- Errors that are the result of the influence of L1
 - ◆ Atypical errors- Errors that do not fit in the either of the first two categories and are considered atypical. These are the issues that are cause for concern.
- Accommodations and modifications may be needed to gather information about the individual's abilities/limitations-changes may invalidate the standardized scores. The Speech-Language Pathologist is responsible for documenting any changes made during the assessment process.
 - ◆ Examples include:
 - Rewording and giving additional test instructions
 - Providing cues or repeating items
 - Skipping items that are not appropriate
 - Having the individual explain correct/incorrect responses
 - Translating standardized assessments

ST-9.5.1: Assessments and Measurement Tools

Assessments	Ages	Descriptions
Bilingual Vocabulary Assessment Measure (BVAM)	3:0-up	Basic vocabulary in variety of languages
The Bilingual Verbal Ability Test (BVAT)	5:0-18+	Verbal ability measure in 17 languages
Clinical Evaluation of Language Fundamentals (CELF 5- Spanish)	5:0-21:11	Receptive and expressive language assessment in Spanish and English
Clinical Evaluation of Language Fundamentals Preschool 2 Spanish (CELF-Preschool-2 Spanish)	3:0-6:11	Comprehensive language evaluation for Spanish-speaking preschool children
Contextual Probes of Articulation Competence-Spanish (CPAC-S)	3:0-8:11	Test of phonology and articulation skills in Spanish
Expressive One-Word Picture Vocabulary Test-R Spanish-Bilingual Edition (EOWPVT-R-SBE)	2:0-18+	Expressive vocabulary assessment in Spanish
Differential Ability Scales II Spanish (DAS II)	2:6-6:11	Assess cognitive strengths
Dos Amigos	5:0-13:0	Verbal language and language dominance assessment
Goldman-Fristoe Test of Articulation-3 Spanish (GFTA 3 Spanish)	2:0-21:11	Assessment of articulation in Spanish and English
Preschool Language Scale 5 Spanish (PLS-5 Spanish)	Birth-7:11	Assessment of expressive and receptive language skills
Receptive One-Word Picture Vocabulary Test-R Spanish-Bilingual Edition (ROWPVT-R-SBE)	2:0-18+	Receptive vocabulary assessment in Spanish
Spanish Articulation Measure (SAM)	3:0-up	Assessment of consonant production and phonological processes in Spanish
Spanish Language Assessment Procedures (SLAP)	3:0-9:0	Assessment of vocabulary development, speech sound production and pragmatic communication skills
Test of Auditory Processing 3 (TAPS3)	5:0-18:11	Assessment of auditory processing skills in Spanish and English
Test de Vocabulario en Imagenes Peabody (TVIP)	2:6-17:11 months	A measure of Spanish vocabulary based on the PPVT
Wechsler Intelligence Scale for Children- 4 Spanish (WICS IV-Spanish)	6:0-16:11	Cognitive/intellectual ability assessment
Woodcock-Munoz Language Survey (WMLS-R)	2:0-90	Language proficiency assessment in English, Spanish and other language

ST-9.6: Speech Therapy Management

ST-9.6.1: Clinical Interventions

- Selecting the language of intervention/therapy is determined on an individual basis:
 - ◆ Language history and experience with each language,
 - ◆ Frequency of use for each language,
 - ◆ Proficiency in each language,
 - ◆ Environmental factors,
 - ◆ Family considerations and goals
- Two main approaches for treatment: Bilingual approach and the cross linguistic approach.
 - ◆ Bilingual approach focuses on utilizing both languages to facilitate intervention. Working on a goal that has common traits to both languages and errors. This is a dual language focus. Generalization-the goal is to promote a cross language association or positive transfer to promote development of each language.
 - ◆ Cross linguistic approach focuses on the differences in the linguistic structures of each language. One area may be targeted that is consistent in just one language. Treatment plan may focus on developing L1 to gain skills for learning L2.
 - ◆ Generalization of skills is an important concept of a successful intervention plan. These approaches are complementary and are not mutually exclusive. The goal is to facilitate communication gains, both within and across languages.

ST-9.6.2: Section Intentionally Left Blank

ST-9.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- English as a Second Language (ESL) community and educational resources
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

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ST-10: (Central) Auditory Processing Disorder (C)APD

ST-10.1: Related Terms**ST-10.2: Definition****ST-10.3: Symptomatology****ST-10.4: Requirements for Speech Therapy Visits****ST-10.5: Presentation****ST-10.6: Speech Therapy Management**

ST-10.1: Related Terms

- Auditory Temporal Processing Deficit
- Pansensory Temporal Deficit
- Cognitive/Language Disorder
- Receptive Language Disorder.

ST-10.2: Definition

- (Central) Auditory Processing Disorder refers to difficulties in the perceptual processing of auditory information in the central learning system. It is a result of the inefficient processing of what is heard that may be revealed in communication or academic difficulties. Auditory processing disorder is the inability to attend to, discriminate among or between, recognize, or understand auditory information.¹
- What is included are the auditory mechanisms that underlie the following abilities:
 - ◆ Sound localization and lateralization
 - ◆ Auditory discrimination
 - ◆ Auditory pattern recognition
 - ◆ Temporal aspects of audition, including temporal integration
 - ◆ Temporal discrimination (e.g., temporal gap detection)
 - ◆ Temporal ordering
 - ◆ Temporal masking
 - ◆ Auditory performance in competing acoustic signals (including dichotic listening)
 - ◆ Auditory performance with degraded acoustic signals.
- (Central) Auditory Processing Disorder (C)APD refers to difficulties in the perceptual processing of auditory information in the CNS as demonstrated by poor performance in one or more of the above noted skills. More specifically, Central Auditory Processing Disorder (C)APD refers to limitations in the ongoing transmission, analysis, organization, transformational, elaboration, storage, retrieval, and use of information contained in audible signals.

ST-10.3: Symptomatology

- Individuals suspected of having (C)APD frequently present with one or more of the following behavioral characteristics:
 - ◆ difficulty understanding spoken language in competing messages, noisy backgrounds, or in reverberant environments
 - ◆ misunderstanding messages inconsistent or inappropriate responding
 - ◆ frequent requests for repetitions, saying “what” and “huh” frequently
 - ◆ taking longer to respond in oral communication situations
 - ◆ difficulty paying attention; being easily distracted
 - ◆ difficulty following complex auditory directions or commands
 - ◆ difficulty localizing sound
 - ◆ difficulty learning songs or nursery rhymes
 - ◆ poor musical and singing skills
 - ◆ associated reading, spelling, and language/learning problems

- It is important to note that this list is illustrative, not exhaustive, and that these behavioral characteristics are not exclusive to (C)APD. Other diagnoses often present with some subset of similar characteristics, including learning disorder (LD), language impairment (SLI), Attention Deficit Hyperactivity Disorder (ADHD), and Autism Spectrum Disorder (ASD); therefore, these behavioral characteristics are not exclusively diagnostic of (C)APD.
- Additionally, those who present with symptoms of (C)APD are typically of average intelligence and demonstrate hearing acuity levels within normal limits.

ST-10.4: Requirements for Speech Therapy Visits

ST-10.4.1: Documentation Requirements

- Central Auditory Processing composite battery assessment administered at least annually that support a delay of more than standard deviation or more below the mean.
- Audiological evaluation assessments administered that support a delay of 2 standard deviations or more below the mean for at least one ear on at least two different behavioral auditory subtests.¹
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-10.4.2: Admission Criteria

The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for Central Auditory Processing Disorder are described below.

- Referral from the individual, caregiver, physician, audiologist, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in auditory processing.
- The individual presents with a functional auditory processing disorder that inhibits the ability to understand and interpret language optimally across environments and communication partners.
- An evaluation by an ASHA certified audiologist identifies the presence of an auditory processing disorder. A diagnosis of Central Auditory Processing Disorder must be confirmed by a certified audiologist.
- The individual's ability to process and comprehend language is not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.

- The individual's communication skills impair participation in health, safety and independence status
- Central Auditory Processing composite battery assessment administered at least annually that support a delay of more than standard deviation or more below the mean.
- Audiological evaluation assessments administered that support a delay of 2 standard deviations or more below the mean for at least one ear on at least two different behavioral auditory subtests.¹

In order to establish medical necessity for speech therapy services, the following criteria must be met.

- The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
- Frequency and Duration must be considered acceptable under established standards of practice.
- The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
- Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
- Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - ◆ To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - ◆ For periodic re-evaluations of the maintenance program
 - ◆ Coverage of maintenance service is health plan specific
- Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-10.4.3: Frequency and Duration

Treatment frequency and duration must be based on:

- Severity of objective clinical findings,
- Presence of and number of complicating factors and comorbidities,
- Natural history and chronicity of condition,
- Expectation for functional improvement with skilled intervention,
- Response to treatment provided
- Patient's level of independence

ST-10.4.4: Discharge Criteria

- The individual's auditory processing skills are commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's auditory processing skills do not impair participation in health, safety and independence status
- Language processing function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-10.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Educational and community based programs for academic support
- Vocational services for occupational assistance
- Psychologist for behavioral and mental health support

ST-10.5: Presentation

Auditory behaviors present as if hearing loss is present, despite normal hearing. (C)APD may occur secondary to a lesion or disorder or of idiopathic etiology. The following are risk factors that can be linked to (C)APD.

- Age-related changes in CANS function
- Genetics
- Neurological disorders
- Traumatic Brain Injury (TBI)
- Cerebrovascular disorder (e.g., stroke)
- Toxin Exposure
- Recurrent Otitis Media
- Prematurity

Researchers have identified distinct characteristics that help distinguish between behavioral manifestations of ADHD and symptoms of CAPD. ADHD is considered an output disorder regarding inability to control behavior. (C)APD is an input disorder that impairs the brain's ability to process sound (what it hears). Distinguishing characteristics include the following:

(Central) Auditory Processing Disorder (C)APD	Attention Deficit Hyperactivity Disorder-Inattentive Type ADHD-Inattentive Type
Brain-based, makes it difficult to process information that the ears hear	Brain-based, makes it difficult to pay attention and stay focused.
Often impacts language-related skills including receptive and expressive language	Often impacts executive function and working memory
Struggles to follow conversations and respond to spoken questions	Struggles to focus during conversation and when responding to spoken questions.
Is easily distracted by background noise or loud and sudden noises	Is easily distracted by whatever is going on around him/her—sounds, sights, activity
May appear “tuned out” due to inability to understand what is being said.	May appear “tuned out” due to inattention.
Struggles with listening comprehension	Struggles with staying on task- daydreaming whether auditory or visual presentation
Often asks for repetition, says “huh” or “what”	Often doesn't respond when spoken to, says “I didn't hear you”
Can miss social cues, sarcasm, and nonverbal language because of intense focus on comprehending what is being said	Has difficulty following social rules as a result of inattention/distractibility
Difficulty with sustained selective auditory attention	Difficulty engaging in activities that require sustained mental effort auditory or visual
Difficulty discriminating speech	Loses things needed for tasks and activities
Diagnosed by audiologists	Diagnosed by pediatricians, psychiatrists
Diagnosis not before age 7, should have average cognitive skills	Diagnosis typically school-aged but can be as early as age 4, over ½ diagnosed have at least one co-existing condition
Interventions include modifying environment, use of FM system, teaching compensatory strategies, evaluating for speech and language delays and learning issues (reading/decoding)	Interventions include prescribing medication, working on organization, time management, evaluating for learning issues

- CAPD and ADHD frequently co-occur. Differential diagnosis requires determining whether the disorders are co-morbid or whether ADHD or CAPD is the primary (or sole) disorder.
- Due to neuromaturation of the central auditory pathways, caution must be taken when interpreting assessment results in children under the age of seven due to variability.^{1,2}

ST-10.5.1: Assessments and Measurement Tools

- The Listening Comprehension Test-2
- Preschool Language Scale-5 (PLS-5)
- Oral and Written Language Scales-II (OWLS-II)
- Test of Language Development-Primary-4 (TOLD-P:4)
- Test of Language Development-Intermediate-4 (TOLD-I:4)
- Test of Auditory Processing-4 (TAPS-4 (Spanish-Bilingual versions available)
- Batelle Developmental Inventory-2 (BDI-2)
- SCAN-3:C – Tests of Auditory Processing Disorders in Children (SCAN-3:C)
- SCAN-3:A – Test of Auditory Processing Disorders in Adults and Adolescents (SCAN-3:A)
- Staggered Spondaic Word Test (SWW)
- Gap detection tests (Gap In Noise, Random Gap Detection)
- Degraded signal Tests- assess auditory closure (Low- pass filtered, Time compressed, Speech-in-noise)
- Multiple Auditory Processing Assessment (MAPA–2)
- Test for Auditory Comprehension of Language-4 (TACL-4)
- Oral Passage Understanding Scale (OPUS)
- Comprehensive Assessment of Spoken Language-2 (CASL-2)
- The Listening Inventory (TLI)
- Auditory Processing Abilities Test (APAT)
- Comprehensive Test of Phonological Processing-2 (CTOPP-2)
- Test of Adolescent and Adult Language-4 (TOAL-4)

ST-10.6: Speech Therapy Management

- Intervention for (C)APD typically requires an interdisciplinary approach involving the audiologist, speech-language pathologist, and other professionals, and should be implemented as a collaborative effort by the audiologist and speech-language pathologist (and possibly others) as soon as possible following the diagnosis to exploit the plasticity of the CNS, maximize successful therapeutic outcomes, and minimize residual functional deficits. Treatment and management goals are deficit driven and are determined on the basis of diagnostic test findings, the individual's case history, and related speech-language and psychoeducational assessment data.
- Treatment and management of (C)APD should incorporate both bottom-up (e.g., acoustic signal enhancement, auditory training) and top-down (i.e., cognitive, metacognitive, and language strategies) approaches delivered consistent with neuroscience principles. Bottom-up approaches are designed to enhance the

acoustic signal and to train specific auditory skills. Top-down approaches provide compensatory strategies designed to minimize the impact of (C)APD through the strengthening of higher order central resources (i.e., language, memory, attention) that individuals with (C)APD may draw upon to buttress deficient auditory processing skills not fully remediated through auditory training. In addition, it is important that training principles be extended across all settings, including the clinic, the classroom, the workplace, and the home, to maximize mastery and ensure generalization of learned skills. Some support exists for the claim that auditory and language interventions can improve auditory functioning in children with (C)APD and those with primary spoken language disorder. There is little indication, however, that observed improvements are due to the auditory features of these programs.

ST-10.6.1: Clinical Interventions

- Comprehensive Management of (C)APD should focus on three aspects:
 - ◆ Changing the learning or communication environment
 - ◆ Direct skills remediation
 - ◆ Improving the child's learning and listening skills by teaching compensatory strategies
- The primary purpose of environmental modifications is to improve access to aurally presented information. Suggestions may include use of electronic devices that assist listening, teacher-oriented suggestions to improve delivery of information, and other methods of altering the learning environment so that the child with APD can focus his or her attention on the message.
- Compensatory strategies usually consist of suggestions for assisting listeners in strengthening central resources (language, problem-solving, memory, attention, other cognitive skills), so that they can be used to help overcome the auditory disorder. In addition, many compensatory strategy approaches teach children with APD to take responsibility for their own listening success or failure and to be an active participant in daily listening activities through a variety of active listening and problem-solving techniques.
- Finally, the purpose of direct treatment is to remediate the disorder, itself. There exists a wide variety of treatment activities to address specific auditory deficits. Some are computer-assisted while others include one-on-one training with a therapist. Sometimes home-based programs are appropriate whereas others may require children to attend therapy sessions in school or at a local clinic. Once again, it should be emphasized that there is no one treatment approach that is appropriate for all children with APD.

Examples of Management/Treatment Techniques (not inclusive):

Environmental Adaptations	Compensatory Strategies	Deficit Specific Treatment
➤ Preferential Seating- nearest sound source, farthest from noise source	➤ Role Playing- problematic situations by simulating difficult listening situations	➤ Poor Auditory Memory- Teach strategies for recall including chunking, visual imagery, verbal rehearsal, and location
➤ Sound absorbing material in listening environments to reduce reverberations	➤ Teach child to write down important information- note-taking skills	➤ Poor Phonological Awareness- Teach rhyming and sentence, syllable, and sound segmenting and blending.
➤ Gain child's attention by calling his/her name or tapping shoulder before addressing	➤ Teach child to recognize communication breakdown and to ask for clarification or repetition	➤ Difficulty with temporal aspects of audition- Teach temporal gap detection (detect gaps in white noise, pauses in texts and conversation), discrimination (high v. low tones, sounds in syllables, minimal pairs) sustained attention (respond to targeted words within environmental noise/background words)
➤ Ensure adequate lighting	➤ Teach lip reading	➤ Prosody training- Metalinguistic skills- teach intonation, rhythm, stress, segmenting, and pauses (key words, reading with directed pauses and stress, plays, pragmatics)
➤ Comprehension Monitoring	➤ Use tape recorder/iPad with recorder	➤ Receptive language- teach comprehension of figurative language- matching semantically similar meaning phrases/sentences, exclusion when presented 4-5 words (which one doesn't belong), identify synonyms
➤ Use of FM system	➤ Teach Active Listening Skills: ➤ Repeat directions/important information aloud or in whisper ➤ Eye contact, child should look at speaker ➤ Body posture, sitting upright leaning forward toward speaker ➤ Child should nod and/or smile occasionally ➤ Child should reflect what was said through paraphrasing and summarizing periodically ➤ Refrain from side conversations ➤ Ask relevant questions	➤ Expressive language- teach expression of figurative language- cloze activities, label vocabulary as described

(Central) Auditory Processing Disorder (C)APD

Environmental Adaptations	Compensatory Strategies	Deficit Specific Treatment
➤ Rephrase and repeat important information	➤ Introduce a daily planner and teach its use	Interhemispheric transfer of information- binaural integration- teach naming objects out of sight, through touch with one hand then the other, teach drawing while describing, using left hand then right hand, engage in activities to follow directions related to movement (tap L knee, jump on L foot), listen to a book using only L headphone
Break up multi-step directions into smaller parts	Pre-teach new vocabulary	Activities for auditory closure such as missing word, syllable or phoneme exercises, speech in noise training and vocabulary building
Provide visuals to support aurally presented information	Attribution Training-Teaching children to attribute listening failures to factors under their immediate control.	Activities for Binaural Separation/Integration Deficits such as dichotic listening training, localization training
Consider a study carrel or separate room for test-taking	Whole body listening techniques to enhance effortless listening and learning	Activities for Temporal Patterning Deficits such as prosody training and temporal patterning training
Placement with an animated instructor	Setting steps to music or motion helps with auditory memory	Activities for Auditory discrimination and Temporal Processing Deficits such as non-speech discrimination activities, phoneme discrimination training

ST-10.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques
- Routine Audiology Consultations
- Academic and Occupational Compensatory Support Accommodations

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ST-11: Cognitive Communication Disorders: Adult and Pediatric

ST-11.1: Related Terms**ST-11.2: Definition****ST-11.3: Symptomatology****ST-11.4: Requirements for Speech Therapy Visits****ST-11.5: Presentation****ST-11.6: Speech Therapy Management**

ST-11.1: Related Terms

- Cognitive-communication disorder is an umbrella term for a number of symptoms that are a part of the disorder.
- Alzheimer's Disease
- Dementia
- Huntington's Disease
- Parkinson's Disease
- Traumatic Brain Injury (TBI)
- Cognitive-Linguistic Disorder due to Stroke or Encephalopathy
- Mild to Severe Acquired Cognitive Linguistic Disorders

ST-11.2: Definition

- 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).
- Dementia is a progressive acquired neurological brain disease. Dementia is identified by memory and cognitive decline ranging from mild to severe.
- Although dementias differ by etiology, the decline in communication and vocational skills that occur as dementia progresses consistently represent a change from the individual's level of prior functioning.
- Traumatic brain injury (TBI) is an acquired nondegenerative injury. An external physical force to the head resulting in shifting of the brain within the skull may result in a TBI.
- TBI in children can be different than in adults. The pediatric brain is still developing therefore deficits may not be immediately apparent. TBI in children is not a one-time event. It is a chronic disease process. Symptoms change and evolve over time.

ST-11.3: Symptomatology

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	➤ 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 ➤ Unable to recall the names of family, friends, acquaintances, lack of empathy, negative reactions when questioned, poor understanding or denial of deficits
➤ 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 ➤ immediate processing ➤ short-term recall of information in order to act on or respond to others	➤ Easily distracted, difficulty attending without task simplification or restricted stimuli, 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 ➤ Difficulty completing common daily tasks
➤ 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 ➤ Inability to recognize and name environmental sounds, objects, familiar people ➤ Difficulty navigating in a familiar or new environment; depth perception changes
➤ Individuals with TBI may also experience:	➤ Dysfunction due to injuries to the outer ear (debris, tears, etc.); middle ear (ruptured tympanic membrane); inner ear (cochlear injury); and temporal lobe lesions ➤ Central auditory dysfunction ➤ May have difficulty hearing speech in noise ➤ Transient or permanent loss of hearing ➤ Sensitivity to sounds ➤ Tinnitus ➤ Dizziness, vertigo, balance problems

Clinical Symptoms	Functional Effects
➤ 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 (verbal and non-verbal communication)	➤ Inability to get across needs and ideas; lack of meaning; empty or shortened speech, impaired listening, speaking, gesturing, reading, and writing
➤ 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
➤ Impaired pragmatics and social communication skills	➤ Verbose with difficulty with topic selection and maintenance ➤ Problems with initiating conversation ➤ Struggles with interpreting or generating nonverbal communication (facial expressions and body language) ➤ Turn taking ➤ Tone of voice
➤ Adverse Mood/ Behaviors	➤ Wide fluctuations in mood, erratic behavior, increased agitation, restlessness, aggression, depression, combativeness or hostility, erratic, obsessive-compulsive or unusual behaviors, lack of motivation, paranoia/delusions ➤ Over-emotional or over-reactive affect or flat affect, anxiety disorder, depression, difficulty identifying emotions in others, drowsiness and changes in sleep patterns, including difficulty falling or staying asleep, feeling disoriented , hypersensitive with exaggerated response to perceived threats, impulsivity, reduced frustration tolerance, stress disorders.

ST-11.4: Requirements for Speech Therapy Visits

ST-11.4.1: Documentation Requirements

Pediatrics

- Standardized assessments administered at least annually that support more than 1 SD below the mean in composite area.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

Adult

- A description of the member's current level of functioning or impairment
- Member's most recent standardized evaluation scores, percent of functional delay, or standard deviation (SD) score, when appropriate, for the member's diagnosis/disability.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-11.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for cognitive communication disorders are described below.
- Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in cognitive linguistic skills.
- The individual presents with a functional cognitive communication disorder that inhibits the ability to communicate optimally across environments and communication partners.
- An evaluation by an ASHA certified speech-language pathologist identifies the presence of a cognitive communication disorder.
- The individual's cognitive communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
- The individual's cognitive communication skills impair participation in health, safety and independence status
- Objective findings, including standardized tests and observational assessments, support a significant impairment in cognitive linguistic skills.
- The individual has experienced a significant decline in cognitive ability from prior level of function.

In order to establish medical necessity for speech therapy services, the following criteria must be met.

- The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
- Frequency and Duration must be considered acceptable under established standards of practice.
- The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
- Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
- Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
- To educate/instruct the patient or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- Coverage of maintenance service is health plan specific.
- Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-11.4.3: Frequency and Duration

Treatment frequency and duration must be based on:

- Severity of objective clinical findings,
- Presence of and number of complicating factors and comorbidities,
- Natural history and chronicity of condition,
- Expectation for functional improvement with skilled intervention,
- Response to treatment provided
- Patient's level of Independence
- Current research varies in the frequency and duration documented for treatment of cognitive communication disorders. The transfer of skills into activities of daily living requires retention and generalization into new environments. Extensive practice of a single target can lead to prompt dependency or the inability to self regulate and self-correct. Random practice treatment leads to increased self-regulation independent of the level of treatment intensity.¹ Therapy techniques that incorporate skills in naturalistic context provide increased opportunities for functional application in daily

living. The overall duration of treatment may be determined by the effectiveness of the type of practice utilized and the complexity of the skills addressed.

- Individual patient characteristics affect optimal treatment intensity such as level of tolerance of therapy, cognitive level, environmental factors, and caregiver participation. Higher treatment frequency does not necessarily correlate to better outcomes. There is a concept of diminishing return in that once a certain point of function has been reached, additional change or improvement is unlikely regardless of treatment intensity.^{2, 3}
- Gilmore et al⁴ documented a study focusing on young individuals with TBI. Significant gains were documented on at least one standardized measure with 20 hours of therapy per week for 12 weeks. Participants demonstrated increases in cognitive-linguistic functions, classroom participation and individual therapy goals. This improvement was generalized to daily living activities.
- A systematic review was conducted by Marsh⁵ and colleagues to research treatment intensity in relation to functional outcomes in individuals post TBI. Increased functional progress and recovery was documented with early onset treatment and intensive neurorehabilitation for moderate to severe TBI.

ST-11.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Cognitive-linguistic function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-11.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- Vision specialist for checking vision or field cuts
- Neuropsychologist for dementia, depression and behavior concerns
- Educational and community based programs for support
- Vocational services for occupational assistance

ST-11.5: Presentation

- Two main causes of acquired cognitive communication disorders 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.
- Sources of pediatric TBI are diverse and differ by age. The Centers for Disease Control and Prevention (CDC) identified leading causes of TBI in children ages 0 to 14:
 - ◆ Falls (50.2%)
 - ◆ Struck by/against events (24.8%)
 - ◆ Motor vehicle accidents (6.8%)
 - ◆ Assault (2.9%)
 - ◆ Unknown/other (15.3%)
- TBI is the largest source of acquired disability in children.
- TBI may present as a change in level of consciousness, memory disturbance, confusion, new onset or worsening of a seizure disorder, visual field deficit, hemiparesis, or neurological signs observable on neuroimaging, etc.
- When concomitant speech disorders or aphasia and cognitive-communication disorders occur, the cognitive deficits 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 the cognitive deficits.
- 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 or cognitive deficit is a causal factor.
- Dementia is characterized by progressive deterioration in multiple areas of cognition including memory, language, reasoning and executive functioning.

- Dementia has various etiologies; some forms are reversible and others are irreversible.

After age 65, the risk of developing dementia doubles every 5 years.

ST-11.5.1: Assessments and Measurement Tools

Pediatric Cognitive Communication Assessments

- Pediatric Test of Brain Injury (PTBI)
- Test of Integrated Language and Literacy (TILLS)
- Comprehensive Assessment of Spoken Language (CASL)
- Clinical Evaluation of Language Fundamentals, 5th ed (CELF-5)
- Behavior Rating Inventory of Executive Function (BRIEF)
- Student Functional Assessment of Verbal Reasoning and Executive Strategies (Student FAVRES)
- Comprehensive Test of Nonverbal Intelligence 2nd ed (C-TONI 2)
- Peabody Picture Vocabulary Test, 4th ed (PPVT-4)
- Test of Everyday Attention (Tea-Ch)
- Child and Adolescent Scale of Participation (CASP)
- Pediatric Evaluation of Disability Inventory (PEDI) Social Functional Scales
- Child Health Questionnaire (CHQ)
- Observation
- Discourse
- Monologue
- Conversation

Screening, Staging, Testing and Lifestyle Assessment Tools for Use with Individuals with Dementia and Adult Cognitive Communication Disorders

- Screening Tests:
 - ◆ Montreal Cognitive Assessment (MoCA)
 - ◆ Saint Louis University Mental Status Exam (SLUMS) Quick screening tests typically are not sensitive enough to pick up on subtle linguistic/cognitive deficits in TBI patients.
- Staging Tests:
 - ◆ Brief Cognitive Rating Scale (BCRS)
 - ◆ Global Deterioration Scale (GDS)
- Standardized Assessments:
 - ◆ Arizona Battery of Communication Disorders and Dementia (ABCD)
 - ◆ Cognitive-Linguistic Quick Test (CLQT)
 - ◆ Ross Information Processing Assessment-Geriatric (RIPA-G)

- ◆ Ross Information Progressing Assessment (RIPA)
- ◆ Boston Diagnostic Aphasia Examination (BDAE)
- ◆ Woodcock-Johnson IV Test of Cognitive Abilities
- ◆ Functional Assessment of Verbal Reasoning and Executive Strategies (FAVRES)
- ◆ Behavioral Assessment of the Dysexecutive Syndrome (BADS)
- ◆ Test of Everyday Attention (TEA)
- ◆ Test of Memory and Language (TOMAL)
- ◆ Rivermead Behavioural Memory Test | Third Edition (RBMT-3)

Determining Life Roles, Habits and Interests:

- The Role Checklist Activity Interest Checklist

Caregiver Assessment:

- Zarit Burden Interview

ST-11.6: Speech Therapy Management

Differential Diagnosis Considerations for Individuals diagnosed with Acquired Cognitive Communication Disorders

- 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 cognitive communication deficits.
- Denial and/or lack of awareness of deficits is a common symptom so patient self-observations cannot always be relied upon.
- Extent and nature of injury is used to classify the severity of a TBI as mild, moderate, or severe. The severities are based on duration of the loss of consciousness, post-traumatic amnesia, and the severity of confusion at the acute phase assessment. These classifications describe the extent of neurological injury and are not reflective of the degree of functional deficits or predictive of the recovery from the TBI.
- Mild TBI (mTBI) is typically diagnosed by self-reports of symptoms by the patient and often does not show up on neuroimaging. Loss of consciousness less than 30 minutes, memory loss less than 24 hours, and a Glasgow Coma Scale (GSC) of 13-15, 30 minutes after injury aid in the differential diagnosis of a mild TBI. In children, 85% of reported TBI is diagnosed as mild.
- Concussion is a brain injury typically considered a mild TBI. Typically, the injury is caused by a blow, bump, or jolt to the head, face, neck, or body that may or may not involve loss of consciousness.⁶ In recent years, more attention has been focused on concussion specifically in regards to sports injuries.

Differential Diagnosis Considerations for Individuals diagnosed with Dementia (progressive disorder)

- A team approach is required to diagnose dementia; and a medical workup is necessary to determine the type of dementia, and whether the condition is reversible or irreversible
- The use of multiple medications or “polypharmacy” may contribute to cognitive changes that may present similarly to dementia.
- There are a number of standardized instruments available with demonstrated reliability for dementia screening

ST-11.6.1: Clinical Interventions

Clinical Interventions for Individuals diagnosed with Acquired Cognitive Communication disorders

Interventions and activities for TBI are individualized and focus on adaptations and compensatory strategies to increase independence and self-awareness/monitoring.

Computer Assisted Treatment (CAT)	Use of devices to improve, maximize and maintain communicative or cognitive function. Assistive hearing devices, computers, tablets, fall into this category
Compensatory Strategy Training	Maximizing skills by modifying environment to capitalize on intact skills in order to overcome deficits. External memory aids such as calendars, PDAs, memory aids and internal strategies such as association, mnemonics and imagery).
Errorless Learning	Impede errors during acquisition of new skill. Task is broken down into small steps. Increased modeling before patient performs tasks. Ask patient not to guess answers. Correct errors immediately. Careful fading of cues.
Metacognitive Skills Training	The focus is improved self-awareness of deficits, self-monitoring and self-regulation. The patient thinks through a problem situation step by step before completing the task.
Sensory Stimulation	Aimed to prevent sensory deprivation. Expose patient to a variety of environmental stimuli for all senses.
Social Communication	Functional conversational skills intervention (turn taking, topic maintenance). The treatment focus is on social success.
Augmentative and alternative Communication (AAC)	Aides to supplement or replace speech or writing (speech generating devices, pictures, gestures, sign language, etc.)
Dual Task Training	Focuses on improving task complexity by training the patient to carry out two competing tasks that require the same amount of attention. The tasks can be cognitive, motor or a combination of both.
Drill and Practice	A technique that targets repetitive drills to stimulate damaged neural networks or establish new networks to restore skills.
Dysphagia	Consider compensatory strategies and diet modifications in relation to the cognitive deficits and learning impairments of each individual.

Clinical Interventions for Individuals diagnosed with Dementia (progressive disorder)

Interventions and activities for individuals with dementia are patient specific, and are focused on personally relevant, meaningful tasks specific to their specific routines, values and interests.

Assistive Technology	Use of devices to improve, maximize and maintain communicative or cognitive function. Assistive hearing devices, computers, tablets, fall into this category
Cognitive Stimulation Therapy	Focuses on any activity of interest to the engage and provide stimulation to the individual with dementia, typically these are small group and theme based
Environmental Modifications	Any environmental adaptations used to maximize communication by optimizing auditory, visual and other sensory skills. Some options may include improving lighting while reducing glare, visual clutter and ambient noise
External Memory Aids	Use of calendars, clocks, lists, technology, pictures, etc. to help compensate for memory deficits.
Montessori-Based Treatment	Developed by Maria Montessori (2008), this treatment involves including using materials used in real life and practicing activities that are meaningful to the individual. Activities the person formerly enjoyed are recreated and are designed to engage the individual's senses. It promotes sequential learning to minimize failure and improve success. Tasks are broken down into steps that are repeated one at a time to promote retention.
Memory Retraining	This technique targets memory via interventions and activities such as error free learning, procedurally based memory activities, spaced retrieval, or fading cues based on the stage
Reminiscence Therapy	Focuses on improving the patient's sense of self using customized photos, music, or relevant props to allow the remembrance and discussion of past life history, including events or facts that are meaningful to the patient
Validation Therapy	Developed by Naomi Feil (1982) this approach includes allowing the individual with dementia to verbalize their feelings while the caregiver offers validation or acceptance of their reality, rather than correcting inaccuracies, in order to relieve symptoms of stress and anxiety
Simulated Presence Therapy (SimPres)	This technique uses pre-recorded video or statements from friends or family members, which may be played for the individual with dementia. When used with patients who have retained adequate hearing and functional communication, the recordings promote positive emotional responses and may reduce adverse behaviors.
Sensory Stimulation	Providing sensory stimuli to improve safety, visibility, comfort, alertness or awareness. May include additives to sweeten foods/drinks, striking visual cues to improve ability to attend/locate items, comfortable bedding, applying lotions/massage, playing soft music.

Strategies for each dementia stage
(As defined the GDS developed by Dr. Barry Reisberg)

Stage	Characteristics	Strategies
4-Early Stage of Dementia Moderate Cognitive Decline	Deficits in concentration, difficulty with complex tasks such as finances and traveling to novel locations, forgetfulness, may be in denial of deficits	➤ Use memory aids such as planners, calendars, and smartphones. ➤ Assist with travel to new places or perform novel or complex tasks including medication management and finances. Provide written plans for emergencies and safety hazards. ➤ Art/craft activities (30 min) for cognition
5-Middle Stage of Dementia Moderately – Severe Cognitive Decline	Deficits in memory and orientation, may forget address and phone number. May be unaware of time of day or location	➤ Use simple phrases, avoid pronoun use, and allow extra time to respond ➤ Assist with task completion by using 1-step commands and cueing to start, continue and end tasks of personal relevance. ➤ Eliminate visual and auditory distractions and provide tactile cues as needed for instructions and task maintenance. ➤ Use visual aids at eye level and in front of view with primary colors (blue, green red) that contrast. ➤ Use clear pictures and print with simple wording ➤ Music/entertainment activities (<25 min)
6-Middle Stage of Dementia Severe Cognitive Decline	Forgets names of close friends and family members, forgetful of recent events. May recall some details of lives (long term memories), with decline in ability to talk using clear language and complete tasks. Personality and behavior changes including delusions, anxiety, compulsions and agitation may be noted.	➤ Same as above ➤ Plan short time frames for activities ➤ Note adverse behaviors and antecedent (time or situation), plan calming activities to mitigate stress ➤ Provide repetitive, error free activities such as sorting/manipulating objects, and sensory based activities (<15 min)
7-Late Stage of Dementia Very Severe Cognitive Decline	Loses ability to speak, needs must be anticipated. Require assistance with all activities and are usually bedbound.	➤ Provide comforting sensory stimulation (tastes, smells, lotion rubs, frequent human contact, comfortable bedding, watch nonverbal behaviors and vocalizations to help anticipate needs.

ST-11.6.2: Specific Treatment Considerations

- Cognition and language are equally connected in development and function. A cognitive impairment (attention, perception, memory, executive function) may disrupt language processes or systems. Likewise, a language impairment, verbal or non-verbal (listening, speaking, gesturing, reading, and writing), may disrupt a cognitive process. Deficits in any of these skills will impair effective communication. Understanding the hierarchy of cognitive-linguistic skills is needed in order to assess their impact upon communication.
- Individuals with cognitive-communication disorder as a primary diagnosis may exhibit complex emotional and behavioral responses, making treatment even more challenging.
- The SLP should make appropriate referrals to other clinical professionals as needs arise, and should use comprehensive assessment information to develop useful interventions, strategies and approaches to maintain optimal communicative and cognitive functioning through the assistance of caregivers and family members

Specific Treatment Considerations for Individuals diagnosed with Acquired Cognitive Communication Disorders

- The relationship between cognitive domains (short-term memory impairments, attention deficits, etc. that impact the patient's ability to attend to and encode newly presented information) should be taken into consideration.
- Limited participation in treatment due to fatigue and physical endurance
- Age, level of education, work status (current or premorbid); social history, cultural and linguistic background
- Physical, sensory, and neurobehavioral consequences of the illness or injury
- Poor understanding of deficits
- Executive function impairments that may negatively impact the patient's recognition of breakdowns in performance, recognize potential benefits of treatment, and follow treatment suggestions.
- Continual skilled assessment, monitoring, modeling, evaluating responses, providing meaningful feedback, adjusting treatment and updating plans as needed
- Teach compensatory strategies, self-cueing techniques etc. and provide guidance and suggestions
- Ongoing preparation to patient and caregivers for discharge through education, training, and community resources
- Factors that influence outcomes for childhood TBI:
 - ◆ Age: 0-4 and 15-19 are the critical developmental windows for TBI. Early injury is not indicative of a better outcome
 - ◆ Severity: Rehabilitation and Habilitation
 - ◆ Personal Traits (premorbid risk factors: Academic/ LD, ADHA, Social Emotional/Mood Disorder)

- ◆ Cognition
- ◆ Family: Social Economic, Stresses, Education
- Access to Care: Access to medical and community resources. Students with TBI may require specialized education/support, accommodations and assistive technology in order to access the school curriculum and achieve academic success.

Specific Treatment Considerations for Individuals diagnosed with Dementia (progressive disorder)

Effective treatments are highly individualized, are based on the patient's current abilities, and focus on improving functional communication and quality of life.

Partners and family members play a critical role in assisting the SLP to define the individual's personally relevant needs, beliefs, interests and lifestyle as these variables influence decisions related to treatment plans and interventions.

Caregiver education and training, including restorative or maintenance programming are necessary components to any treatment plan to ensure the post treatment usage of effective strategies and methods to aid the individual impacted by dementia to maintain optimal functioning in their environment.

- For individuals with dementia, lifestyle profiling is crucial to design interventions. Involve family and friends to complete a profile of the patient's personal history, including occupation, educational level, likes and dislikes, routines and habits, personal preferences, culture, communication style, personality traits, hobbies and interests to help establish personally relevant activities and routines for stimulation and comfort as they progress through the stages of illness.
- The role of the SLP involves assessment and management of the symptomatology as the illness progresses through various stages, and to develop or modify useful interventions, strategies and approaches to maintain optimal communicative and cognitive functioning through the assistance of caregivers and family members.
- Establishment of a maintenance program for post treatment usage of effective strategies and methods to aid the individual impacted by dementia to maintain optimal communication skills and functioning within their environment.

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ST-12: Dysarthria

ST-12.1: Related Terms**ST-12.2: Definition****ST-12.3: Symptomatology****ST-12.4: Requirements for Speech Therapy Visits****ST-12.5: Presentation****ST-12.6: Speech Therapy Management**

ST-12.1: Related Terms

- Slurred speech
- Flaccid dysarthria
- Hypokinetic dysarthria
- Mixed dysarthria
- Ataxic dysarthria
- Spastic dysarthria

ST-12.2: Definition

- Dysarthria is a motor speech disorder. It results from impaired movement of the muscles used for speech production, including the lips, tongue, vocal folds, and/or diaphragm. The type and severity of dysarthria depend on which area of the nervous system is affected.

ST-12.3: Symptomatology

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 articulation, respiration, swallowing, and phonation.

Clinical Symptoms	Functional Effects
➤ Imprecise, distorted, slurred, decreased rate of speech ➤ Impaired pitch levels and breaks ➤ Impaired vocal loudness, intensity, quality ➤ Hyper or hypo nasality ➤ Impaired or poorly controlled rate, rhythm, and phrasing ➤ Impaired voice quality and prosody ➤ Distorted sounds and words ➤ Shortened length of utterance ➤ Limited tongue, lip, jaw movements ➤ Impaired control of oral secretions ➤ Limited breath/respiratory support ➤ Mumbled or garbled speech	➤ 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, and drooling affect both speech and daily life.

ST-12.4: Requirements for Speech Therapy Visits

ST-12.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Member's most recent standardized evaluation scores, percent of functional delay, or standard deviation (SD) score, when appropriate, for the member's diagnosis/disability.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-12.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for dysarthria are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in speech intelligibility
 - ◆ The individual presents with a functional speech production disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a speech production disorder.
 - ◆ The individual's communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Objective findings, including standardized tests and observational assessments, support a significant impairment in speech intelligibility.
 - ◆ The individual has experienced a significant decline in speech intelligibility from prior level of function.
- In order to establish medical necessity for speech therapy services, the following criteria must be met:
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.

Dysarthria

- ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific
 - Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-12.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence

ST-12.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same chronological/developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Speech intelligibility is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-12.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- Neuropsychologist for depression and behavior concerns
- Psychologist for behavioral and mental health support
- AAC Specialist for assistance with implementation of augmentative or alternative communication

ST-12.5: Presentation

- Dysarthria is a neurological speech production disorder that presents with abnormalities in strength, speech, range, tone, and articulatory movements affecting the respiratory, phonatory, articulatory, and prosodic elements of speech.
- Common causes of dysarthria include trauma, 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.

ST-12.5.1: Assessment Measurement Tools

- Frenchay Dysarthria Assessment-2 (FDA-2)
- Dysarthria Examination Battery
- Assessment of Intelligibility of Dysarthric Speakers (AIDS)
- Sentence Intelligibility Test- updated computerized version of the sentence portion
- Quick Assessment for Dysarthria,
- Tikofsky's 50-Word Intelligibility Test,
- The Dysarthria Profile, Robertson

ST-12.6: Speech Therapy Management

ST-12.6.1: Clinical Interventions

- Statement of short-term functional measurable goals within each interval as appropriate in each case, home assignments between sessions
- Education and training to caregivers
- counseling, dialogue, and support with patient / caregivers to assist understanding
- Assessment for selection and implementation of an alternative augmentative communication system if appropriate
- 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"

ST-12.6.2: Specific Treatment Considerations

- 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.

ST-12.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- Augmentative and alternative communication devices
- Caregiver training and education
- Daily utilization of compensatory strategies and self-cueing techniques

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ST-13: Dysphagia (Swallowing Disorder) - Adults

ST-13.1: Related Terms**ST-13.2: Definition****ST-13.3: Symptomatology****ST-13.4: Requirements for Speech Therapy Visits****ST-13.5: Presentation****ST-13.6: Speech Therapy Management**

ST-13.1: Related Terms

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

ST-13.2: 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.

ST-13.3: 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

ST-13.4: Requirements for Speech Therapy Visits

ST-13.4.1: Documentation Requirements

- A description of the member’s current level of functioning or impairment
- Member’s most recent instrumental assessment or bedside swallow evaluation
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-13.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for **dysphagia (swallowing) disorder are described below.**
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in swallowing.
 - ◆ The individual is not able to maintain adequate nutrition, hydration, and pulmonary status due to swallowing deficits.
 - ◆ The individual is not able to manage oral and pharyngeal saliva accumulations
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a swallowing disorder.
 - ◆ The individual's swallowing skills impair participation in health, safety and independence status
 - ◆ Objective findings, including instrumental assessments (Modified Barium Swallow Study, Fiberoptic Endoscopic Evaluation of Swallowing, etc.), support a significant impairment in swallowing.
 - ◆ The individual has experienced a significant decline in swallowing from prior level of function.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient’s condition under evidence based practice guidelines.

- ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific
- Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-13.4.3: Frequency and Duration

Treatment frequency and duration must be based on:

- Severity of objective clinical findings,
- Presence of and number of complicating factors and comorbidities,
- Natural history and chronicity of condition,
- Expectation for functional improvement with skilled intervention,
- Response to treatment provided
- Patient's level of independence

Current research varies in the frequency and duration documented for treatment of dysphagia. The transfer of skills into activities of daily living requires retention and generalization into new environments. Extensive practice of a single target can lead to prompt dependency or the inability to self regulate and self-correct. Random practice treatment leads to increased self regulation independent of the level of treatment intensity¹. Therapy techniques that incorporate skills in naturalistic context provide increased opportunities for functional application in daily living. The overall duration of treatment may be determined by the effectiveness of the type of practice utilized and the complexity of the skills addressed.

Individual patient characteristics affect optimal treatment intensity such as their level of tolerance of therapy, environmental factors, and caregiver participation. Higher treatment frequency does not necessarily correlate to better outcomes. There is a concept of diminishing return in that once a certain point of function has been reached, additional change or improvement is unlikely regardless of treatment intensity.²

The following recommendations exist regarding management of dysphagia in post stroke patients. The Clinical Guidelines for Stroke Management³ advises regular therapy that includes direction instruction in skill and strength training relating the swallowing foods and liquids and indirect focus on neural plasticity improves swallowing function. High intensity therapy services is shown to demonstrate increased improvement in swallowing function and ability to manage a normal diet.⁴

Eltringham and colleagues⁵ conducted a systematic review regarding dysphagia treatment and post stroke pneumonia. Findings supported early detection, less than 24 hours after admission, and intervention for post stroke patient's is directly correlated with better outcomes and decreased risk of pulmonary complications.^{6, 7}

The National Clinical Guideline Centre guidelines⁸ reference dysphagia treatment for post stroke patients ages 16 years and older. Review of the literature recommends 3 times a week frequency when documentation supports consistent, functional, measurable progress towards goals.

Studies have been conducted regarding treatment of dysphagia for Parkinson's disease. Systematic reviews conducted by Ciucci et al⁹ and Park and colleagues¹⁰ reported the following information. Therapy services that address the primary physiology of the complaint were indicative of positive outcomes. Both electrical stimulation and traditional behavior swallowing therapy clinical interventions were reported to demonstrate improvements in this population.

ST-13.4.4: Discharge Criteria

- The individual's swallowing skills do not impair participation in health, safety and independence status
- Swallowing function is determined to be within normal limits or has reached the individual's premorbid status.
- Nutrition and hydration needs are optimally met by alternative methods such as a percutaneous endoscopic gastrostomy (PEG tube).
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use compensatory strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-13.4.5: Referral Guidelines

- Registered dietitian to determine nutrition and hydration needs.
- Physician specialty if clinical signs or symptoms of gastro-esophageal reflux or esophageal dysphagia are present
- Instrumental assessment of dysphagia (i.e., MBS, FEES) if clinical signs or symptoms of dysphagia present after performing a bedside/clinical swallowing evaluation.
- Social worker for patient or family concerns
- Psychologist for behavioral and mental health support
- Acupuncturist for adjunct post stroke rehabilitative services

ST-13.5: Presentation

- Dysphagia **can be caused** from a variety of etiologies. **Etiology may be** secondary to **injury** to the central nervous system (CNS) or cranial nerves, and unilateral cortical and subcortical lesions. **In addition, injury to the head and neck may result in significant impairment. Listed below are some examples of common medical conditions that may result in a dysphagia.**
 - ◆ traumatic brain injury (TBI)
 - ◆ dementia
 - ◆ Parkinson's disease
 - ◆ developmental disabilities in an adult population
 - ◆ cancer in the oral cavity, pharynx, nasopharynx, or esophagus
 - ◆ chemoradiation for head and neck cancer treatment
 - ◆ trauma or surgery involving the head and neck
 - ◆ decayed or missing teeth
 - ◆ critical care that may have included oral intubation and/or tracheostomy
 - ◆ Pharmaceutical medications

ST-13.5.1: Assessments and Measurement Tools

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)

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.

ST-13.6: Speech Therapy Management

- The following management will vary depending on the specific needs of the patient.
 - ◆ A clinical dysphagia evaluation will include: assessment of posture, positioning, patient motivation, oral structure and function, efficiency of oral intake and clinical signs of safety. A variety of positions, feeding techniques, compensatory strategies and adaptive utensils may be used during the examination.
 - ◆ If oral feedings are appropriate, determine the least restrictive diet consistency and liquid level.
 - ◆ Regarding management for dysphagia patients with CVA, early screening and assessment is directly correlated with decreased risk of pneumonia and improved swallowing outcomes.^{6, 7}
 - ◆ 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.
 - ◆ Evidence exists that neuromuscular electrical stimulation (NMES) in conjunction with behavioral swallowing treatment can be an effective method of treatment for swallowing function in patients with oropharyngeal dysphagia of different etiologies. There is insufficient evidence in the published, peer-reviewed scientific literature to conclude that NMES/electrical stimulation by itself is effective in the treatment of dysphagia. Well-designed, randomized, controlled clinical trials are needed to demonstrate the effect and the clinical benefit of electrical stimulation for swallowing conditions.^{10,11,12}
 - ◆ 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.

ST-13.6.1: Section Intentionally Left Blank**ST-13.6.2: Section Intentionally Left Blank****ST-13.6.3: 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.

Home Medical Equipment

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

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ST-14: Dysphagia (Swallowing Disorder) - Pediatrics

ST-14.1: Related Terms**ST-14.2: Definition****ST-14.3: Symptomatology****ST-14.4: Requirements for Speech Therapy Visits****ST-14.5: Presentation****ST-14.6: Speech Therapy Management**

ST-14.1: Related Terms

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

ST-14.2: 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.

ST-14.3: 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 ➤ Eosinophilic Esophagitis ➤ Apnea, bradycardia and cyanosis related to feeding	➤ Prematurity
➤ 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

ST-14.4: Requirements for Speech Therapy Visits

ST-14.4.1: Documentation Requirements

- Member's most recent instrumental assessment or bedside swallow evaluation
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-14.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for dysphagia (swallowing) disorder are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in swallowing.
 - ◆ The individual is not able to maintain adequate nutrition, hydration, and pulmonary status due to swallowing deficits.
 - ◆ The individual is not able to manage oral and pharyngeal saliva accumulations
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a swallowing disorder.
 - ◆ The individual's swallowing skills impair participation in health, safety and independence status
 - ◆ Objective findings, including instrumental assessments (Modified Barium Swallow Study, Fiberoptic Endoscopic Evaluation of Swallowing, etc.), support a significant impairment in swallowing.
 - ◆ The individual has experienced a significant decline in swallowing from prior level of function.
- In order to establish medical necessity for speech therapy services, the following criteria must be met:
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
- To educate/instruct the patient or appropriate caregiver regarding the maintenance program
- For periodic re-evaluations of the maintenance program
- Coverage of maintenance service is health plan specific.
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-14.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence

ST-14.4.4: Discharge Criteria

- The individual's swallowing skills do not impair participation in health, safety and independence status
- Swallowing function is determined to be within normal limits or has reached the individual's premorbid status.
- Nutrition and hydration needs are optimally met by alternative methods such as a percutaneous endoscopic gastrostomy (PEG tube).
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use compensatory strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-14.4.5: 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.
- Social worker for patient or family concerns
- Psychologist for behavioral and mental health support

ST-14.5: Presentation

- Dysphagia can be caused from a variety of etiologies. Listed below are some examples of common medical conditions that may result in pediatric dysphagia.
 - ◆ Medical conditions such as heart disease, pulmonary disease, gastroesophageal reflux disease [GERD], and delayed gastric emptying
 - ◆ Developmental delays
 - ◆ Neuromuscular Disorders
 - ◆ Prematurity and low birth weight
 - ◆ Genetic syndromes such as Down syndrome Pierre Robin Sequence, Prader–Willi, Rett syndrome, and Treacher Collins syndrome
 - ◆ Pharmaceutical medications
 - ◆ Neurological disorders such as cerebral palsy, meningitis, traumatic brain injury, and muscle weakness in face and neck
 - ◆ Structural abnormalities such as cleft lip and/or palate and other craniofacial abnormalities

ST-14.5.1: Assessment and Measurement Tools

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)

ST-14.6: Speech Therapy Management

ST-14.6.1: Clinical Interventions

- The following management will vary depending on the specific needs of the child.
 - ◆ A clinical dysphagia evaluation will include: assessment of posture, positioning, patient motivation, oral structure and function, efficiency of oral intake and clinical signs of safety. A variety of positions, feeding techniques, compensatory strategies and adaptive utensils may be used during the examination.
 - ◆ 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.

ST-14.6.2: Section Intentionally Left Blank

ST-14.6.3: 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

Home Medical Equipment

- Suction equipment for saliva management
- Positioning devices

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ST-15: Feeding Aversion

ST-15.1: Related Terms**ST-15.2: Definition****ST-15.3: Symptomatology****ST-15.4: Requirements for Speech Therapy Visits****ST-15.5: Presentation****ST-15.6: Speech Therapy Management**

ST-15.1: Related Terms

- Behavior Feeding Disorder
- Food Refusal
- Autism
- Sensory Feeding Disorder

ST-15.2: Definition

A patient, with adequate feeding/swallowing abilities, chooses to refuse oral consumption of food or liquids. Learned feeding avoidance behaviors that may have been related to a prior organic/ medical issue.¹

ST-15.3: Symptomatology

Symptomatology	Possible consequence or cause
➤ A feeding/swallowing evaluation reports swallowing abilities to be within normal limits, yet the patient is unable to consume appropriate foods/liquids for age and development ➤ Refusal by verbalizing/turning away/closing & covering mouth/refusal to swallow. ➤ Selectivity by food type/ flavor, color or texture ➤ Able to eat in one setting but not another ➤ Extreme gagging or vomiting during or after meals ➤ Spitting out food/ pocketing/ Emesis ➤ Behavior outbursts such as screaming, tantrums, or attempts to escape the feeding environment ➤ Throwing food/shut down	➤ Autism ^{2,3} ➤ Cardiac Disease ➤ Cerebral Palsy ➤ Cleft Palate/Structural abnormalities ➤ Congenital Heart Disease ➤ Constipation ➤ Cystic Fibrosis ➤ Delayed Gastric Emptying ➤ Developmental Delays ➤ Down Syndrome ➤ Gastroesophageal Reflux Disease (GERD) ➤ Genetic Syndromes ➤ Hearing related difficulties ➤ History of Dysphagia resulting in a fear of feeding/swallowing ➤ Premature Birth ➤ Previous placement of a Tracheotomy ➤ Pulmonary Disease ➤ Respiratory Difficulties ➤ Sensory Disorder ⁴ ➤ Surgical procedures affecting swallowing ➤ Oral Motor Dysfunction ➤ Behavioral Disorder (accounts for 43% of feeding disorders)⁵ ➤ Cardiorespiratory (accounts for 34% of feeding disorders)⁵ ➤ Mechanical/ Structural (accounts for 53% of feeding disorders)⁵ ➤ Metabolic Disorders (accounts for 12% of feeding disorders)⁵ ➤ Neurological Disorders (accounts for 62% of feeding disorders)⁵ ➤ Serious feeding difficulties requiring medical intervention occur in 3–10% of children⁵

Symptomatology	Possible consequence or cause
➤ Extreme gagging or vomiting during or after meals	➤ Delayed Gastric Emptying ➤ Food Allergies (including Celiac Disease) ➤ Gastroesophageal Reflux Disease (GERD) ➤ Sensory Disorder
➤ Behavior outbursts such as screaming, tantrums, or attempts to escape the feeding environment	➤ Food Neophobia ➤ Sensory Disorder
➤ Low percentile for weight on the chart for the National Academy of Pediatrics	➤ Nutritional Effects ➤ Ongoing need for enteral or parenteral nutrition ➤ Prolonged status of inadequate caloric intake
➤ Growth Deficiency	➤ Dehydration ➤ Growth Hormone Deficiency ➤ Nutritional effects ➤ Ongoing need for enteral or parenteral nutrition ➤ Prolonged status of inadequate caloric intake
➤ Failure to Thrive	➤ Caregiver abuse or neglect ➤ Primary or secondary caused by limited food exposure in early development
➤ Food Allergies/ Associated Pain with Eating	➤ Celiac Disease ➤ Eosinophilic Esophagitis (EoE) ➤ Food Protein-Induced Enterocolitis Syndrome (FPIES) ➤ GERD ➤ H. Pylori (Bacterial Infection) ➤ Short Gut Syndrome
➤ Sensory	➤ Autism Spectrum Disorder (ASD) ➤ Intellectual Deficits with difficulty with motor planning & flexibility² ➤ Muscle weakness in face and/or neck ➤ Neurological/Sensory Memory with past experiences ➤ Over-respond to presence of foods that trigger avoidance ➤ Sensory processing deficits: Auditory/ visual/ gustatory/ olfactory/tactile/ vestibular/ proprioceptive. Research showed tactile and taste/ smell were main factors.⁵ Sensory deficits affect pre-oral phase/ swallow.⁴ ➤ TBI
➤ Social/ Emotional/ Environmental	➤ Avoidant Restrictive Food Intake Disorder (ARFID) ➤ Child that experiences a trauma such as: infantile anorexia ➤ possibly secondary to force feeding/anxiety ➤ Difficult parent-child interactions at meal times ➤ Food Neophobia³ ➤ Peer/Social Influence³
➤ Medication Side Effects	➤ Lethargy/Decreased Appetite

ST-15.4: Requirements for Speech Therapy Visits

ST-15.4.1: Documentation Requirements

- Feeding and swallowing evaluation including oral motor exam; the intake of liquids and solids; a list of the types, textures, and amounts of foods that are eaten; how the care giver is involved in the program; and feeding history.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-15.4.2: Admission Criteria

The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for feeding aversion are described below.

Birth to 6 years⁶

- If the caloric intake is not sufficient, the following factors should be considered:
 - Oral motor weakness or structural impairment
 - Conditions that may cause consistent loss of calories through vomiting
 - Conditions that may cause muscle weakness
- If the patient's caloric intake is sufficient, but growth deficiency is still evident, the following factors should be considered:
 - Medical conditions that affect caloric absorption
 - Not consuming a balanced diet
- 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:
 - ◆ The patient currently has a G-tube or is participating in a G-tube weaning program
 - ◆ 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
 - ◆ The patient currently consumes supplemental nutrition
 - ◆ Chronic food refusal with limited variety of food group consumption⁷
 - ◆ Failure to advance textures⁷
 - ◆ Inappropriate mealtime behaviors (ex: throwing food, grazing patterns of eating, etc.)⁷
 - ◆ Sensory disorders that affect typical developmental feeding progression or swallowing phases⁴.

7 - 18 years⁶

- Indication for skilled intervention is dependent on multiple documented factors:
- Prior treatment received: Duration, intensity, progress, carry over, number of episodes of treatment, gaps in episodes of treatment, etc.
- Severity of the nutritional deficit, as documented by a physician or dietician
- Current potential for progress: Rationale that indicates client potential for progress that differs from prior status
- Patient commitment/ desire to participate
- Family participation and carryover
- Community support

In order to establish medical necessity for speech therapy services, the following criteria must be met:

- The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
- Frequency and Duration must be considered acceptable under established standards of practice.
- The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
- Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
- Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - ◆ To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - ◆ For periodic re-evaluations of the maintenance program
 - ◆ Coverage of maintenance service is health plan specific.
- Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-15.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence.

ST-15.4.4: Discharge Criteria

- The individual has acquired age appropriate feeding skills.
- Consumption is adequate in amount and variety of food groups accepted to support developmentally appropriate growth.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use compensatory strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-15.4.5: 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 are present.
- Social worker for patient or family concerns
- Psychologist for behavioral and mental health support

ST-15.5: Presentation

Typical vs Atypical Characteristics

Typical (Picky Eater)	Feeding Aversions
➤ Limitations in number of foods; likes specific foods but will eat at least one food from most food texture or nutrition groups	➤ Restricted range or variety of foods ➤ Significantly reduced food repertoire – refuses to eat entire categories of food types or textures (Less than 20)
➤ Slow to try new foods	➤ Avoids one or more food groups ➤ May avoid all vegetables which may be perceived as having a bitter flavor (genetic difference in ability to detect bitter flavor)³
➤ Like some food in particular ways (brand specific/ restaurant specific)	➤ Unusual aversions or fear surrounding foods
➤ Food jag (eats one particular food/ or small group of food preferences at each meal). The food jag will end on its own after a short period of time. Following food jag, will return to previously eaten foods. (ASHA Leader Blog 6/12/14 Melanie Potock- Preventing Food Jags what's a parent to do) http://blog.asha.org/2014/06/12/preventing-food-jags-whats-a-parent-to-do/)	➤ Foods lost to food jags are NOT regained after taking a break
➤ Can tolerate new food on their plate (may be reluctant and/or respond with negative behaviors)	➤ Demonstrates sensory aversion to new/ non-preferred foods on plate or table ➤ (Complete refusal/ “cries & falls apart”)
➤ Can usually touch or taste new foods	➤ Will not tolerate sensory input related to new foods
➤ Will not typically starve themselves or make themselves ill	➤ May starve themselves or make themselves ill, may find comfort in a hungry state¹
➤ May eat different foods than family but will eat with the family	➤ May refuse to eat meals with family and almost always eats different foods than the family. Altered eating schedule or patterns

Normal Development:

Swallowing Phases:⁸

- **Oral Preparation Stage**—preparing the food or liquid in the oral cavity to form a bolus including sucking liquids, manipulating soft boluses, and chewing solid food.
- **Oral Transit Phase**—moving or propelling the bolus posteriorly through the oral cavity.
- **Pharyngeal Phase**—initiating the swallow; moving the bolus through the pharynx.

- **Esophageal Phase**—moving the bolus through the cervical and thoracic esophagus and into the stomach via esophageal peristalsis.
 - ◆ Dysphagia can occur in any phase of the swallow. Although there are differences in the relationships between anatomical structures and in the physiology of the swallowing mechanism across the age range (i.e., infants, young children, adults).
- Three developmental feeding periods:³
 - ◆ Nursing period
 - ◆ Transitional feeding period
 - ◆ Modified adult feeding period

General Feeding Information:

- “Feeding and swallowing disorders (also known as dysphagia) include difficulty with any step of the feeding process—from accepting foods and liquids into the mouth to the entry of food into the stomach and intestines. A feeding or swallowing disorder includes developmentally atypical eating and drinking behaviors, such as not accepting age-appropriate liquids or foods, being unable to use age-appropriate feeding devices and utensils, or being unable to self-feed. A child with dysphagia may refuse food, accept only a restricted variety or quantity of foods and liquids, or display mealtime behaviors that are inappropriate for his or her age.”⁸
- “In the second year, toddlers consume a diet that resembles their families’ preferences. Introduction of a variety of nutritious foods and flavors is important during both the transitional and modified adult periods as younger toddlers are initially more accepting of novel foods compared to preschool children, who may be reluctant to try new foods. The reluctance to try new foods is low at weaning and rapidly rises to a peak between 2 and 6 years, with considerable variability.”³
- “The most important phase for learning food preferences and appetite control may be the beginning of complementary feeding (CF). Infants discover the sensory (texture, taste and flavor) and nutritional properties (energy density) of foods that will ultimately compose their adult diet.”⁹
- “Learning to eat has to occur quickly, in particular because the mode of feeding evolves dramatically during the first thousand days (3 years) of life, from “tube” feeding through the cord in utero, through oral feeding with milk after birth, complementary feeding (CF) around mid-course of the first year, until eating family foods by the end of the first year. After this period, Neophobia/ fussiness starts peaking and introduction of new foods becomes more difficult.”⁹
- “About a quarter of infants experience difficulties with pieces in foods, but such difficulties should not drive parents to delay introduction of more solid textures, since delaying introduction to lumpy foods beyond 10 months is associated with texture acceptance problems at later ages.”⁹
- “Mild feeding difficulties occur in up to 25–45% of healthy children and 80% of children with developmental delays or chronic disease. Serious feeding difficulties requiring medical intervention occur in 3–10% of children.”⁵

ST-15.5.1: Assessment and Measurement Tools

Objective Measures	➤ Mealtime Behavior Questionnaire* ➤ About Your Child's Eating -R* ➤ Child Development Inventory ➤ Pediatric Symptom Checklist ➤ The Behavioral Pediatrics Feeding Assessment Scale (BPFAS) ➤ The Child Eating Behavior Inventory (CEBI) ➤ The Children's Feeding Assessment Questionnaire (CFAQ) ➤ The Feeding Scale ➤ Mealtime Observation Schedule (MOS) ➤ Brief Autism Mealtime Behaviour Inventory (<i>BAMBI</i>) ➤ Examples of parent-friendly feeding checklists can be found in Bahr's (2010) parent book, <i>Nobody Ever Told Me (or My Mother) That!: Everything from Bottles and Breathing to Healthy Speech Development</i>. ➤ The Developmental Pre-Feeding Checklist (Morris & Klein, 2000, pp. 697–711) is widely used by feeding specialists. It is research-based and reflects typical feeding development from birth to 2-years of age ➤ Sensory Profile ➤ PEDI ➤ REAL
Feeding Observation	➤ Type of food presented ➤ Quantity of solids & liquids consumed daily ➤ Method of presentation ➤ Meal process/structure ➤ Child reaction to food presentation ➤ Parent response to feeding behaviors ➤ Outcome of feeding behaviors
Team Collaboration	➤ Pediatrician, Developmental Pediatrician ➤ Occupational Therapist ➤ Gastroenterologist, Otolaryngologist, ENT/Allergist/Pulmonologist ➤ Behavioral Therapist, Psychologist ➤ Nutritionist, Dietician ➤ Nursing, Social Workers ➤ Teachers, Paraprofessionals ➤ Parent Participation- Key factor for progress & carryover⁶

ST-15.6: Speech Therapy Management

ST-15.6.1: Clinical Interventions

- Management of this condition will vary depending upon the patient's individual need.
 - ◆ Development of a treatment plan to increase the types, textures, and amounts of food and liquids accepted by the patient.
 - ◆ Development of age appropriate feeding skills/ mealtime routines in the least restrictive environment possible.
 - ◆ Behavior and sensory modification techniques to extinguish unwanted behavioral responses toward feeding.
 - ◆ Team collaboration between a variety of disciplines including Occupational Therapist, Behavioral Therapist, Nutritionist/Dietician, primary care physician, Gastroenterologist, and other treating providers.
 - ◆ The provider MUST clearly document extensive caregiver training, participation, and carryover into the patient's daily living activities. (Food intake journal, environmental adaptations, behavioral response chart, etc.).

Treatment Options	Approaches to Treatment
Evidence Based Techniques	➤ Pre-Chaining and Food Chaining® Therapy Programs ➤ Pre-chaining focuses on a treatment program to keep the child as close to the developmental progression of oral skills as possible during the first year of life ➤ Food chaining® is a systematic method for the treatment of children with food selectivity and aversive eating behaviors ➤ Sequential Oral Sensory Approach to Feeding (The S.O.S. Approach): Children proceed hierarchically, tolerating, interacting with, smelling, touching, tasting, and eventually eating novel foods ➤ Talk Tools Oral Placement Therapy®: focuses on techniques to add a tactile component to feeding and therapy, enabling clients to “feel” the movements necessary for the development of feeding and speech clarity ¹⁰ ➤ The Transdisciplinary Effect Assessment and Treatment (TR-eat™) model: a collaborative treatment model for children with complex feeding problems that blend behavioral principles with oral motor therapeutic skills to address difficult feeding problems ¹¹
Intervention Strategies	➤ Provide visuals ➤ Reduce linguistic load ➤ Offer choices ➤ Address sensory processing concerns ➤ Offer reinforcers to increase motivation ◆ Behavior Strategies: Differential attention, Positive reinforcement, Escape extinction/ escape prevention, Stimulus fading, Simultaneous presentation, Differential reinforcement of alternative behavior (DRA), Use of a flipped spoon as a presentation method,⁷ shaping, modeling, first/ then token system. Research shows that escape extinction and differential reinforcement significantly increase acceptance of non-preferred food⁶ ➤ Oral motor and oral placement strategies⁷ ➤ Repeated exposure to novel/non-preferred food.⁷ Being exposed repeatedly to a food is the primary factor that determines its acceptance.⁹ It is recommended that a child be exposed 10 to 15 times to a previously unfamiliar or non-preferred food to increase intake for children with feeding difficulties.⁷

ST-15.6.2: Specific Treatment Considerations:

- A proactive, family-centered approach (particularly in the first three years¹² could prevent many feeding disorders because parents, caregivers, and professionals will know what skills to encourage, when to encourage them, when a child is going “off track,” and when to refer a child to a feeding specialist.⁹
- Research indicates that the optimal time for feeding aversion intervention is by age 6.⁶
- Treatment should be:
 - ◆ Multi-disciplinary approach. The Speech and OT treatment plans must focus on different aspects of care.
 - ◆ Episodic & periodic in nature
 - ◆ Progress should be reported at least every 3 months
 - ◆ Typical duration of up to 1 year. (If has G-tube status with no prior oral intake may take up to 2 years).
 - ◆ Ongoing parent involvement is required
 - ◆ Frequency and intensity of skilled services should vary along with care moving from direct to indirect services over the continuum of care

ST-15.6.3: Self-Management Technique

- Consistent completion of an individualized home program
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

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ST-16: Fluency Disorder

ST-16.1: Related Terms**ST-16.2: Definition****ST-16.3: Symptomatology****ST-16.4: Requirements for Speech Therapy Visits****ST-16.5: Presentation****ST-16.6: Speech Therapy Management**

ST-16.1: Related Terms

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

ST-16.2: Definition

- 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.”¹
- “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.”²
- Stuttering is likely the result of disturbances in the neural timing required for speech “Cluttering is a fluency disorder with underlying language and thought-organization disabilities.”³

ST-16.3: 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) ➤ Short attention span and poor concentration ➤ Lack of complete awareness of the problem	➤ 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

ST-16.4: Requirements for Speech Therapy Visits

ST-16.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Member's most recent standardized evaluation scores, percent of functional delay, or standard deviation (SD) score, when appropriate, for the member's diagnosis/disability.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-16.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for fluency disorder are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in fluency.
 - ◆ The individual presents with a fluency disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a fluency (stuttering or cluttering) disorder.
 - ◆ The individual's communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Objective findings, including standardized tests and observational assessments, support a significant impairment in speech fluency.
 - ◆ The individual has experienced a significant decline in speech fluency from prior level of function.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.

- ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-16.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence
- Individuals who are functionally stable, and have an adequate means of communication are candidates for periodic or intermittent therapy services.

ST-16.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Speech fluency is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-16.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss.
- Educational and community based programs for support
- Vocational services for occupational assistance
- Psychologist for behavioral and mental health support

ST-16.5: Presentation

- Causes of fluency disorders are believed to have both genetic and neurogenic components. **Environmental** factors such as family dynamics, stress, **anxiety**, and other **emotional** factors also play a **significant** role in the management and development of stuttering.

ST-16.5.1: Assessment and Measurement Tools

- Stuttering Severity Instrument-4 (SSI-4)
- Fluency Rating Severity Scale
- Test of Childhood Stuttering (TOCS)

ST-16.6: Speech Therapy Management

ST-16.6.1: Clinical Interventions

(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. With early childhood stuttering, the most effective interventions are delivered by parents/caregivers with SLP support.
- 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.
- Some current evidenced-based programs for management of stuttering include:
 - ◆ The Lidcombe Program- most extensively researched treatment program
 - ◆ The Westmead Program- clinical studies have reported successful outcomes
 - ◆ Multifactorial programs- address environmental factors (DCM Model)
 - ◆ The Camperdown Program- a speech restructuring/prolonged speech technique for adolescents and adults

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ST-16.6.3: Self-Management Technique

- Individual and/or parents to follow home therapy program

Role of Caregiver	Home Practice
➤ To understand the nature of stuttering ➤ To understand the goals of treatment ➤ To serve as the child's speech partner ➤ To consult with SLP regularly ➤ To learn and model all speech targets ➤ To carry out home practice with child ➤ To create a home conducive to fluency ➤ To educate family members ➤ To liaise with teachers	➤ Instructions for practice should be clear and written down ➤ Practice sheets should be provided ➤ Recording devices should be used ➤ Data taken in order to allow SLP to determine accuracy and completeness of home practice ➤ Practice should occur daily ➤ Practice sessions should be from 20-30 minutes in duration

Home Medical Equipment

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

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ST-17: Hearing Loss and Aural Rehabilitation**ST-17.1: Related Terms****ST-17.2: Definition****ST-17.3: Symptomatology****ST-17.4: Requirements for Speech Therapy Visits****ST-17.5: Presentation****ST-17.6: Speech Therapy Management**

ST-17.1: Related Terms

- Aural Rehabilitation
- Aural Habilitation
- Hard of hearing
- Deaf(ness)
- Hearing Impaired
- Sensorineural Hearing Loss
- Conductive Hearing Loss

ST-17.2: Definition

Hearing loss is a congenital or acquired condition with the result of impaired auditory sensitivity and/or diminished speech intelligibility of the physiological auditory system. Individuals with hearing loss are sometimes described as deaf or hard of hearing based on the type, degree, and configuration of hearing impairment.

Aural Rehabilitation

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”

Aural Habilitation

Often with children, aural rehabilitation services would more appropriately be called "habilitative" rather than "rehabilitative." "Rehabilitation" focuses on restoring a skill that is lost. In children, a skill may not be there in the first place, so it has to be taught -- hence, the services would be "habilitative," not "rehabilitative."

Synonyms (Hearing Loss)

Sensorineural hearing loss (SNHL) is hearing loss due to cochlear (sensory) or VIIIth nerve (neural) auditory dysfunction. Most of the time, SNHL cannot be medically or surgically corrected. Presbycusis is a sensorineural hearing loss that occurs gradually, later in life, affecting hearing in both ears over time. The loss associated with presbycusis is usually greater for high-pitched sounds.

Conductive hearing loss occurs when there is a problem conducting sound waves easily through the outer ear canal, tympanic membrane, or middle ear (ossicles). Conductive hearing loss makes sounds softer and more difficult to hear. This type of hearing loss may be responsive to medical or surgical treatment. Fluctuating conductive hearing loss due to otitis media can have negative effects on academic performance and auditory processing skills.

Mixed hearing loss is the result of damage to conductive pathways of the outer and/or middle ear and to the nerves or sensory hair cells of the inner ear. ASHA PP

- The most common cause of intermittent, mild-to-moderate acquired hearing loss in infants and young children is conductive hearing loss associated with otitis media.
- Noise-induced hearing loss is an increasing concern for children and adolescents.
- In adults, noise and aging are the primary causes of hearing loss.
- Approximately one-third of Americans between ages 65 and 74 and nearly half over the age of 75 have hearing loss PP

Configuration of Hearing Loss

The configuration, or shape, of the hearing loss refers to the degree and pattern of hearing loss across frequencies (tones), as illustrated in a graph called an audiogram.

Type of Hearing Loss	Possible Causes
Conductive Hearing Loss (temporary)	➤ fluid in the middle ear (e.g., from upper respiratory infections, otitis media, or serous otitis media); ➤ poor eustachian tube function; ➤ perforated tympanic membrane; ➤ benign tumors; ➤ head trauma-physical head injury can lead to skull fractures, a hole in the tympanic membrane, and damage to middle ear structures; ➤ otosclerosis; ➤ impacted cerumen; ➤ infection in the ear canal (external otitis); ➤ swimmer's ear (otitis externa); ➤ presence of a foreign body; ➤ absence or malformation of the outer ear, ear canal, or middle ear.
Mixed Hearing Loss	➤ Mixed hearing loss is caused by a combination of one or more causes of conductive hearing loss and one or more causes of sensorineural hearing loss.
Sensorineural Hearing Loss (Permanent)	➤ Noise Induced Hearing loss (NIHL) ➤ Genetics and Genetic Disorders ➤ Ototoxicity with medications or chemicals ➤ Head Trauma or TBI & damage to inner ear ➤ Autoimmune Inner Ear Disease (AIED) ➤ Bacterial, viral, or parasitic infections ➤ Acoustic Neuroma ➤ Large Vestibular Aqueduct ➤ Meniere's disease ➤ Vascular deficits
Stable or Progressive	➤ Stays the same or Better/worse over time
Unilateral or Bilateral	➤ Left Ear/Right Ear/Both Ears
Varying Severities	➤ Mild/Moderate/Severe/Profound

ST-17.3: Symptomatology

Symptoms will range both in number, intensity, and level of severity and ultimately to their functional effect on an individual's communication. Even if a child has passed a hearing screening before, it is important to look out for the following signs.

Babies & Infants

- Does not startle at loud noises.
- Does not turn to the source of a sound.
- Does not say single words, such as “dada” or “mama” by 1 year of age.
- Turns head when he or she sees you but not if you only call out his or her name. This sometimes is mistaken for not paying attention or just ignoring, but could be the result of a partial or complete hearing loss.
- Seems to hear some sounds and not others

Toddlers & Children

- Speech production development and language are delayed.
- Speech is not clear.
- Does not follow directions. This is sometimes mistaken for not paying attention or just ignoring, but could be the result of a partial of complete hearing loss.
- Often says, “Huh?”
- Turns the TV volume up too high.

Adolescents

- Asking for repetition
- Behavioral concerns
- Difficulty attending
- Difficulty understanding speech in noise
- Turning the volume up on the TV/Music
- Poor academic performance
- Auditory processing problem
- Impaired social and emotional development

Adults

- Thinking other people are mumbling or not speaking clearly
- Difficulty understanding speech in noise or on the telephone
- Difficulty understanding speech of women & children or high pitched sounds (i.e /s/ and /f/).
- Speaking too loudly or too softly
- Not participating in activities/isolating one's self
- Difficulty understanding conversation in a variety of settings
- Employment performance, personal relationships and interaction with people in the community may be negatively affected.

ST-17.4: Requirements for Speech Therapy Visits**ST-17.4.1: Documentation Requirements****Pediatric**

- Formal diagnosis of hearing loss confirmed by an audiologist
- Standardized assessments administered at least annually that support more than 1 SD below the mean in composite area.
- Refer to early intervention section of this guideline for information regarding early intervention services for infants and toddlers.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

Adult

- Formal diagnosis of hearing loss confirmed by an audiologist
- A description of the member's current level of functioning or impairment
- Member's most recent standardized evaluation scores, percent of functional delay, or standard deviation (SD) score, when appropriate, for the member's diagnosis/disability.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-17.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for aural rehabilitation are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in communication secondary to hearing loss.
 - ◆ The individual presents with a functional communication disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a speech or language disorder.
 - ◆ The individual's communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Objective findings, including standardized tests and observational assessments, support a significant impairment in communication.
 - ◆ The individual has experienced a significant decline in communication function from prior level of function.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
- The treatment must be considered specific and effective for the patient's condition and consider the patient's specific range of audibility with their specific aided technology (hearing aids, cochlear implants, etc.)
- Frequency and Duration must be considered acceptable under established standards of practice.
- The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
- Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
- Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - ◆ To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - ◆ For periodic re-evaluations of the maintenance program
- Coverage of maintenance service is health plan specific.

- Refer the individual or the individual's family to an audiologist on a routine basis for current maintenance of hearing amplification needs.
- Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-17.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence

Individuals who are functionally stable, and have an adequate means of communication are candidates for periodic or intermittent therapy services. This clinical presentation is often observed in older children who have reached a functional level of communication appropriate for their developmental level.

ST-17.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same chronological/developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Language function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-17.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Audiologist to monitor and evaluate changes in hearing acuity, modifications to hearing aids, other assistive listening devices, or cochlear implant.
- Educational and community based programs for support
- Psychologist for behavioral and mental health support
- Vocational services for occupational assistance
- AAC Specialist for assistance with implementation of augmentative or alternative communication and assistive technology such as FM systems.

ST-17.5: Presentation

Major Stages of Auditory Development

- Detection- The ability to indicate the presence of sound in the environment
- Discrimination- The ability to differentiate between two sounds (same/different)
- Identification/Recognition- The ability to attach meaning to a sound. Ex: Identify the correct picture when a word is spoken
- Comprehension- The ability to understand conversational speech with only auditory input.

Early Intervention

The American Academy of Pediatrics recommends beginning the process for early intervention at birth for children diagnosed with hearing loss. The following goals were developed by the American Academy of Pediatrics to support access to early intervention for this population.¹

American Academy of Pediatrics (AAP) Early Hearing Detection and Intervention (EHDI) Goals

- Ensure every child with hearing loss is diagnosed and receives appropriate, timely intervention.
- Enhance pediatricians', other physicians', and non-physician clinicians' knowledge about the EHDI 1-3-6 guidelines—screening by 1 month of age, diagnosis of hearing loss by 3 months of age, and entry into early intervention (EI) services by 6 months of age.
- Ensure newborn hearing screening results are communicated to all parents and reported in a timely fashion according to state laws, regulations, and guidelines. Incorporate EHDI into an integrated, medical home approach to child health. Cited from: <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/PEHDIC/Pages/Early-Hearing-Detection-and-Intervention.aspx>.

- Children with hearing loss have the potential to maintain development with same age peers if appropriate amplification and intervention services are pursued. A selection of devices such as Bone anchored hearing aids (BAHA), Cochlear Implants (CI), and hearing aids are utilized for amplification. The earlier appropriate amplification is fit and monitored, the better the prognosis for speech and language development in infants and toddlers. Children with hearing loss may not reach full maturity in speech sound development without early intervention with appropriate amplification. Infants and young children with a pre-linguistic onset of hearing loss can exhibit noticeable delays in their entire speech production system.
- Speech and language intervention along with appropriate amplification is critical to communication development. Actively involving a child's caregivers in early intervention can lead to better outcomes for treatment. An interdisciplinary approach ensures that both components for successful outcomes are present. Amplification must be monitored at intervals to verify that the patient is receiving adequate input from his or her device. Speech and language intervention is needed to focus on auditory skills to support the patient's ability to understand and interpret the sound being received. The elimination of either of these factors can lead to significant delays in development and the lack of appropriate use of the technology available.
- The auditory stages of development include a hierarchy of four levels of auditory skill. Some auditory development will develop naturally, particularly with early, high quality, monitored amplification. However, skilled therapy is critical to address those skills that need direct instruction in both early invention and school age children.

School Age

As children progress into school age years, the expectations for language utilization in both academic and social settings increases. Children who have not received the benefits of both early intervention and appropriate amplification often need speech and language services at an increased intensity as they attempt to play "catch up" with their peers. Children who have received these services however, can be on level with peers and need less frequent or possibly maintenance level support. Ongoing collaboration with teachers, caregivers, and community members (coaches, counselors, and organization leaders) to support effective communication is needed consistently throughout the school years. Services to support success in social and academic settings is often needed throughout the school age years.

Adolescent/Young Adult

An increase in the incidence of acquired hearing loss versus congenital hearing loss occurs in this age group. Speech therapy services include support and maintenance care for patients who were born hearing impaired, and then those who have experienced acquired hearing loss due to a medical issues, trauma, or abusive behaviors such as drugs or excessive loud noise. Noise Induced Hearing Loss is the leading cause of acquired hearing loss in the adolescent/young adult population. Personal listening devices used without monitoring decibel levels have resulted in an increase in hearing loss.

Adult

Hearing loss in the adult population is primarily due to aging, but trauma and other medical conditions are factors as well. A skilled audiologist is able to provide appropriate amplification to support activities of daily living. Speech therapy for this population is primarily maintenance to support the utilization of new amplification. Aural rehabilitation is typically not a primary cause of concern, as a consistent foundation of auditory skill has already been established.

Providing family members, caregivers, employers, co-workers, and other communication partners training in communication techniques and strategies to facilitate effective communication with the hearing impaired individual is critical part of the speech therapist role. Counseling and support may be needed as patients adjust to the knowledge of their hearing loss and the impact on activities of daily living. Services should focus on a 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 or her community or employment.

ST-17.5.1: Assessment and Measurement Tools

- Audiological evaluation for hearing impairment assessment
- Refer to Speech Sound Disorders and Spoken Language Disorders: Pediatrics guidelines for condition specific communication evaluation assessments.

ST-17.6: Speech Therapy Management

ST-17.6.1: Clinical Intervention

- Management will vary depending on the specific needs of the individual. It may include treatment approaches to include:
 - ◆ **Listening and Spoken Language** - The Listening and Spoken Language approach to language development teaches infants and young children with hearing loss to listen and talk with the support of hearing technology such as hearing aids, assistive listening devices (such as an FM system) or cochlear implants.
 - ◆ **Cued speech or Cued Language** – The approach combines the natural mouth movements of speech and eight hand movements near your mouth as you speak. These movements show sounds and words. They help with understanding what others say.
 - ◆ **American Sign Language, or ASL** uses hand and body movements in place of speaking. The rules for how to put words together in ASL are different than spoken English. For example, you say, "Do you want a drink?" In ASL, it is, "Drink you want?"
 - ◆ **Total communication** – Uses a combination of methods to teach adults and children to communicate including a form of sign language, finger spelling, speech reading speaking and amplification

- ◆ **Auditory-Verbal Therapy:** Auditory-Verbal Therapy is an evidence based treatment program that facilitates optimal acquisition of spoken language through listening by newborns, infants, toddlers, and young children who are deaf or hard of hearing. Auditory-Verbal Therapy promotes early diagnosis, one-on-one therapy, and state-of-the-art audiologic management and technology. Parents and caregivers actively participate in therapy. Through guidance, coaching, and demonstration, parents become the primary facilitators of their child's spoken language development. Ultimately, parents and caregivers gain confidence that their child can have access to a full range of academic, social, and occupational choices. Auditory-Verbal Therapy must be conducted in adherence to the Principles LSLS of Auditory-Verbal Therapy" (AG Bell Academy, 2012).

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ST-17.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- Augmentative and alternative communication devices
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques
- Academic and Occupational Compensatory Support Accommodations

Home Medical Equipment

- Hearing Aid
- Cochlear Implant
- FM system
- Programming modifications to home equipment such as televisions, cell phones, alarm systems, etc. for access.

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ST-18: Hearing Screening

ST-18.0: Clinical Process

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.

The Newborn Hearing Screening program has been cited as successfully screening the hearing of 97.9% babies born in the United States each year. However, these screenings may not adequately detect a variety of diagnoses for hearing thresholds are outside the typical range. ASHA states by the time children reach school age that approximately 15% of children in the United States display some type of hearing thresholds outside the typical range of 16dB or greater.

The optimum means of identification and management of children found to have hearing thresholds outside the typical range through Hearing Screenings. Reduced hearing thresholds may result in difficulties in learning speech and language, poor school performance, development of social skills and emotional problems. Speech Language Pathologists are mandated by ASHA to practice their role in the identification of hearing thresholds outside the typical range and ensure the appropriate referrals and management for their patients as stated in ASHA's Scope of Practice in Speech-Language Pathology (ASHA, 2016b).¹

ST-18.0: 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. Results of this testing must be included in any speech-language comprehensive evaluation report

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.
- Children ages 6 months to 3 years must have screening completed through OAEs and AABRs. These require referral to and testing by an accredited Audiologist. Results of this testing must be included in any comprehensive speech language evaluation report.
- When screening the hearing of children with a diagnosis of Autism Spectrum Disorder, ASHA recommends the following suggestions and compensations screening their hearing.²
 - ◆ “minimizing distractions in the test suite;
 - ◆ using visual schedules to support audiological testing sequence;

- ◆ partnering with parents and the managing SLP, who are more familiar with the individual's behaviors, interests, and needs;
- ◆ using the individual's primary/preferred language form (e.g., spoken language, sign, AAC devices, or picture symbols);
- ◆ increasing the individual's familiarity with assessment procedures prior to testing, such as through the use of social stories a visual schedule, and/or practicing with a favorite doll or stuffed animal;
- ◆ allowing the individual to touch and explore earphones that will be used during testing to help him or her overcome tactile sensitivity and related anxiety;
- ◆ incorporating flexibility in the assessment situation (e.g., testing order or earphone type);
- ◆ practicing appropriate motor movements in response to test stimuli;
- ◆ knowing what is reinforcing to the individual (e.g., food, clips from favorite videos, playing with a favorite toy) and using these reinforcers to reward appropriate behavioral responses to test stimuli;
- ◆ considering the use of multiple sessions to obtain complete results;
- ◆ being aware of the individual's signs of distress and terminating testing before the situation escalates³
- ◆ considering the need for auditory brainstem response (ABR) testing when behavioral audiometry is not possible

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.

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.
 - ◆ Caregiver concern* regarding hearing, speech, language, or developmental delay.
 - ◆ Family history* of permanent childhood hearing loss.
 - ◆ New hospital protocol for newborn Hearing Screening. Too many babies are lost to follow up for abnormal hearing screening in hospital. These babies must be tracked to ensure follow up. The follow up hearing tests for these babies MUST BE OAE or AABR, NOT behavioral. Audiologic diagnosis is to be completed by 3 months of age with enrollment in Early Intervention by 6 months if hearing thresholds are outside the typical range.

- ◆ 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.
- ◆ In utero infections, such as Cytomegalovirus (CMV*), Zika Virus, herpes, rubella, syphilis, and toxoplasmosis. CMV requires testing every 6 months to age 3 and annually to age 6 MONITOR hearing
- ◆ Craniofacial anomalies, including those that involve the pinna, ear canal, ear tags, ear pits, and temporal bone anomalies.
- ◆ Physical findings, such as white forelock, associated with a syndrome known to include a sensorineural or permanent conductive hearing loss.
- ◆ 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.
- ◆ Neurodegenerative disorders,* such as Hunter syndrome, or sensory motor neuropathies, such as Friedreich ataxia and Charcot-Marie-Tooth syndrome.
- ◆ Culture-positive postnatal infections associated with sensorineural hearing loss,* including confirmed bacterial and viral (especially herpes viruses and varicella) meningitis. Any infection of brain or ears, must have hearing follow up within 3 months of occurrence
- ◆ Asphyxia or Head trauma, especially basal skull/temporal bone fracture* that requires hospitalization.
- ◆ 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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ST-19: Section Intentionally Left Blank

ST-20: Orofacial Myofunctional Disorders**ST-20.1: Related Terms****ST-20.2: Definition****ST-20.3: Symptomatology****ST-20.4: Requirements for Speech Therapy Visits****ST-20.5: Presentation****ST-20.6: Speech Therapy Management**

ST-20.1: Related Terms

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

ST-20.2: 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
- International Association of Orofacial Myology defines OMDs as “behaviors and patterns created by inappropriate muscle function and incorrect habits involving the tongue, lips, jaw, and face.”⁷
- Orofacial myofunctional disorders (OMDs) include:
 - ◆ Tongue Thrust- an anterior protrusion of the tongue during swallow
 - ◆ Ankyloglossia- an abnormally short lingual frenulum which reduces lingual movement during speech, mastication, and deglutition

ST-20.3: 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. ➤ Frequent open-mouth resting posture with the lips parted. ➤ Imprecise, distorted speech sounds ➤ Chewing of solid food with lips open, taking large bites and swallowing without completely chewing the food.	➤ Results in misalignment of teeth, which may return after orthodontic treatment. Also, may have a negative influence on the functioning of the temporomandibular joint ➤ Tongue does not rest with hard palate often causing maxillary insufficiency. ➤ 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/. ➤ Loss of food particles from mouth, noisy chewing and swallowing (smacking and gulping) and upset stomach from swallowing too much air.

ST-20.4: Requirements for Speech Therapy Visits

ST-20.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Member's most recent instrumental assessment or bedside swallow evaluation
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-20.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for orofacial myofunctional (tongue thrust) disorder are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected orofacial myofunctional impairment.
 - ◆ The individual is not able to maintain adequate nutrition, hydration, and pulmonary status due to orofacial myofunctional deficits.
 - ◆ The individual is not able to manage oral and pharyngeal saliva accumulations
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of an orofacial myofunctional disorder.
 - ◆ Objective findings, including oral motor evaluation, support a significant impairment in orofacial myofunctional functioning.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program

- Coverage of maintenance service is health plan specific
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-20.4.3: Frequency and Duration

Treatment frequency and duration must be based on:

- Severity of objective clinical findings,
- Presence of and number of complicating factors and comorbidities,
- Natural history and chronicity of condition,
- Expectation for functional improvement with skilled intervention,
- Response to treatment provided
- Patient's level of independence.

ST-20.4.4: Discharge Criteria

- The individual's orofacial myofunctional (tongue thrust) function does not impair participation in health, safety and independence status
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use compensatory strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-20.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Physical or occupational therapy for gross and fine motor skills
- Dentist for dental needs and orthodontic appliances

ST-20.5: 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

ST-20.5.1: Assessments and Measurement Tools

- Tongue Thrust Checklist-Holloway, 2013
- Lingual Frenulum Protocol-Marchesan, 2012
- Lingual Frenulum Protocol with Scores for Infants-Martinelli, 2012
- Orofacial Myofunctional Evaluation Protocol with Scores (OMES)-Felício, C.M. & Ferreira, CL.
- Tongue Thrust Rating Scale-Arslan, Serel, Demir, N. & Karaduman, A., 2017

ST-20.6: Speech Therapy Management

ST-20.6.1: Clinical Interventions

- 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.

ST-20.6.2: Section Intentionally Left Blank**ST-20.6.3: Self Management Techniques**

- Consistent completion of an individualized home exercise program
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

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ST-21: Selective Mutism

ST-21.1: Related Terms**ST-21.2: Definition****ST-21.3: Symptomatology****ST-21.4: Requirements for Speech Therapy Visits****ST-21.5: Presentation****ST-21.6: Speech Therapy Management**

ST-21.1: Related Terms

- Mutism
- Anxiety Disorder
- Social Phobia
- Muteness
- Panic Disorder
- Generalized Anxiety Disorder

ST-21.2: Definition

- Selective mutism is the inability to speak and communicate effectively in specific social settings.

ST-21.3: Symptomatology

- The symptoms associated with selective mutism are often attributed to the presence of psychological disorders including social anxiety and social phobia.

Clinical Symptoms	Functional Effects
➤ Eye contact is poor or nonexistent ➤ Avoidance or running away from others in social settings ➤ Appear “frozen” in certain social situations ➤ Crying or throwing a tantrum if pressured to speak socially ➤ Avoiding public areas ➤ Will not initiate or maintain conversation ➤ May use nonverbal gestures or whispering to communicate	➤ The individual is unable to functionally communicate needs, wants, ideas in social situations due to promote anxiety/phobia ➤ Impacts the individual’s confidence and ability to develop and maintain relationships with peers and others ➤ The behavior is reinforcing by allowing the individual to reduce their anxiety, however results in social withdrawal over time ➤ The disorder may result in loss of personal achievement socially, academically, and vocationally

ST-21.4: Requirements for Speech Therapy Visits

ST-21.4.1: Documentation Requirements

- Standardized assessments administered at least annually that support more than 1 SD below the mean in composite area.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child’s developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-21.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for selective mutism are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in communication.
 - ◆ The individual presents with a functional language disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of selective mutism.
 - ◆ The individual's communication skills are not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Standardized tests support a delay of more than 1 standard deviation below the mean in a composite area of language.
- In order to establish medical necessity for speech therapy services, the following criteria must be met:
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
 - ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-21.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings,
 - ◆ Presence of and number of complicating factors and comorbidities,
 - ◆ Natural history and chronicity of condition,
 - ◆ Expectation for functional improvement with skilled intervention,
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence
 - ◆ Effective management of selective mutism requires collaboration between the SLP, the child's family, teachers and behavioral health specialists (psychiatrist, school or clinical psychologist).
 - ◆ Individuals who are functionally stable, and have an adequate means of communication are candidates for periodic or intermittent therapy services. This clinical presentation is often observed in older children who have reached a functional level of communication appropriate for their developmental level.¹

ST-21.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Language function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-21.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- Educational and community based programs for support
- Behavioral intervention
- Psychologist for behavioral and mental health support

ST-21.5: Presentation

- The individual will not speak in specific social situations such as school, but speaks without difficulty in other situations.
- The disorder may impact achievement in educational, occupational, social areas.
- Symptoms have persisted for at least 1 month
- The failure to speak is not related to an inability to use or understand the spoken language in the social context.
- The disturbance does not occur exclusively during the course of ASD, or another psychotic disorder, and is not a result of a communication disorder (i.e. fluency).
- Prevalence- <1%.

Differential Diagnosis Considerations

- In certain new or stressful situations, shyness or unwillingness to speak may be temporary and resolve spontaneously without intervention
- Other disorders to rule out include developmental speech and language delays, fluency disorders, ASD, PDD, mood disorders
- Testing should be done to rule out hearing impairment
- Other neurogenic disorders or neurological diseases.

ST-21.5.1: Assessments and Measurement Tools

- Social Language Development Test, Elementary and Adolescent
- Test of Pragmatic Language-2 (TOPL-2)
- Pragmatic Language Observation Scale (PLOS)
- Children's Communication Checklist-2
- Pragmatic Language Skills Inventory (PLSI)

ST-21.6: Speech Therapy Management

ST-21.6.1: Clinical Interventions

Intervention/ Technique	Description
➤ AAC	➤ Using photos, objects, pictures, symbols, writing to supplement speech. This may be used short term to facilitate social communication interaction.
➤ Stimulus Fading	➤ Individual is engaged in a comfortable social situation with one or more people they speak to without difficulty. A new person is brought into the room and slowly introduced into the social group.
➤ Shaping	➤ All communicative attempts are reinforced positively (e.g.: nonverbal gestures, whispering) until the individual is able to speak normally.
➤ Self-Modeling	➤ The individual views video tape of himself/herself speaking without difficulty in a relaxed environment; goal is to encourage confidence to speak in other less comfortable settings.
➤ Augmented Self-Modeling	➤ The individual views a video of himself/herself speaking in familiar environment; and the video is edited to show the individual speaking in a setting in which he/she will not speak. The video is viewed with others present. The goals is to reinforce positive thoughts about speaking in public situations (Viana et al, 2009).

Intervention/ Technique	Description
➤ Social-Pragmatic Approach	➤ The individual begins involvement in joint activities that involve a social component, such as play that does not require verbalization. Next, nonverbal communication such as pointing, gesturing, facial gesturing is added during the activity. Finally, the individual begins producing non-speech sounds and moves toward speech sound production, then words. ➤ Once at word level or beyond-ask the individual non-invasive questions (such as, "What color is your watch?") ➤ Gradually move on to more personal such as habits/preferences. Progress to having the individual ask noninvasive questions, then work up to multiple conversational turns. ➤ When new partners/situations are introduced- the tasks should be more concrete because the anxiety may be increased with less comfortable places or less familiar people. ➤ (Hungerford et al., 2003).
➤ Vocal Control Approach	➤ This technique uses nonverbal approaches such as humming and pitch variation to allow the individual to practice voicing. Gradually, the individual is asked to produce animal or environmental sounds animal sounds to practice voice initiation. Then, he/she will start with a hum and convert it to the /m/ sound. Next, a vowel is added to the /m/ sound for a syllable, progressing to /m/ initial at word, then phrase, then sentence level. Later, progress to speech sounds, syllables, words that do not begin with the /m/ phoneme.
➤ (RSA) Ritual Sound Approach	➤ Social Communication Anxiety Treatment® (S-CAT®) is the evidenced-based philosophy of treatment developed by Dr. Elisa Shipon-Blum. This treatment technique is part of Social Communication Anxiety Treatment (S-CAT). The mechanics of sound production is learned, then oral-motor movements are progressed to the phoneme, syllables, and words levels. The SLP will describe non-speech sounds such as blowing or coughing and explains how voiceless phonemes are produced. The child then begins to produce voiceless phonemes (e.g., /h/, /k/, /t/, and /p/). The child will mark any sounds that he/she can produce using an alphabet board. Searching the alphabet board may allow the child to focus on something else rather than feeling the stress associated with making eye contact with the SLP. This approach may encourage the child to make non-speech sounds and progress to production of speech sounds and words while reducing anxiety. (Klein, Armstrong, Skira, and Gordon (2016)

ST-21.6.2: Specific Treatment Considerations

- Individuals will often benefit initially from individualized treatment sessions in order to become more familiar with the therapists, techniques and strategies to increase speaking confidence in familiar settings
- Group treatment with individuals identified with selective mutism may offer another treatment alternative. The group members should be chosen by including those with skills and grade level. The tasks may start with nonverbal gesturing and advance to whispering or more verbal behaviors. Treatment can be structured to include scripts or role-playing among peers.
- Small group interventions involving peers may assist with carryover and generalization of skills and learned strategies.

- Because selective mutism is categorized as an anxiety disorder, outside referral to a psychiatrist is appropriate and collaboration for intervention should also include parents, teachers and school psychologist/counselor.
- Articulation, spoken language, auditory comprehension and cognition may be normal, however, reliable information may be difficult to obtain due to anxiety resulting in lack of responsiveness. In most cases, underlying unidentified speech and/or language delays are present. Over time, further assessment may be able to uncover these hidden deficits that can contribute to ongoing mutism.
- Typically, social/pragmatic skills appear impaired even in familiar environments.
- A child with selective mutism may not fully participate and may use gestures or pointing instead of verbalizations. This diagnostic information supports social communication disturbance, in the event the parent/teacher descriptions or even home audio/video recordings indicate communication in nonpublic situations is consistently different.
- Children with this disorder may report their speech sounds funny; this may be related to difficulty with tightness or control of the vocal mechanism due to anxiety.

ST-21.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques
- Counseling for anxiety and improved mental health

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ST-22: Speech Sound Disorders: Articulation and Phonology

ST-22.1: Related Terms**ST-22.2: Definition(s)****ST-22.3: Symptomatology****ST-22.4: Requirements for Speech Therapy Visits****ST-22.5: Presentation****ST-22.6: Speech Therapy Management**

ST-22.1: Related Terms

- Speech sound disorders
- Articulation disorders
- Phonological processing disorders
- Intelligibility

ST-22.2: Definition(s)

- Speech sound disorders is the preferred term for describing difficulties that young children have with speech intelligibility.
- Speech sound disorders include sound substitutions, omissions, distortions and additions. In addition, there can be errors that affect the word level and/or the rhythm and intonation characteristics of running speech.
- Speech sound omissions impact intelligibility the most and speech sound substitutions also frequently occur.
- Speech sound disorders result from difficulties with speech, motor production and coordination of speech movements, as well as the lack of phonological knowledge or misapplication of the phonological rules associated with the child's native language. All languages are governed by phonological rules which determine the appropriate speech sounds (or phonemes) and phoneme sequences that characterize a particular language.
- Bilingualism has not been shown to be a cause for speech sound disorders. Young children are able to learn the phonemic differences across languages.
- Dialectal differences result in phoneme substitutions (like *dose* for *those*) and can be mistaken for speech sound errors.
- Perceptual difficulties and motor incoordination may contribute to the development of speech sound disorders.
- Cognitive impairments will influence the child's ability to learn the phonological rules of a language. While neurological impairments and structural differences can impair speech production.

ST-22.3: Symptomatology

- Speech sound disorders are identified on a continuum from mild or very severe. The symptoms will also range in number, intensity and level of severity. More severe disorders will have a greater functional effect on the individual's speech intelligibility.

Clinical Symptoms	Description
Omissions/deletions	Specific sounds are omitted or deleted (e.g., <i>boo</i> for <i>book</i> and <i>geen</i> for <i>green</i>)
Substitutions	One or more sounds are substituted (e.g., <i>wed</i> for <i>red</i> and <i>dut</i> for <i>duck</i> , <i>widuh</i> for <i>rider</i>)
Additions	One or more extra sounds are added into a word (e.g., <i>bulack</i> for <i>black</i>)
Distortions	Sounds are modified or altered (e.g., a slushy /s/)
Whole-word/syllable-level errors	Weak syllables are deleted (e.g., <i>boon</i> for <i>balloon</i>); a syllable is repeated or deleted (e.g., <i>nana</i> for <i>candy</i>)
Prosody errors	Errors that occur in stress, rhythm and intonation

ST-22.4: Requirements for Speech Therapy Visits

ST-22.4.1: Documentation Requirements

- Standardized assessments administered at least annually that support more than 1 SD below the mean in composite area.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-22.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for speech sound disorders are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in speech sound production.
 - ◆ The individual presents with a functional speech production disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a speech sound disorder.
 - ◆ The individual's conversational intelligibility is not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.

- ◆ The individual's communication skills impair participation in health, safety and independence status
- ◆ Standardized tests support a delay of more than 1 standard deviation below the mean in a composite area of speech sound production.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
 - ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-22.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings
 - ◆ Presence of and number of complicating factors and comorbidities
 - ◆ Natural history and chronicity of condition
 - ◆ Expectation for functional improvement with skilled intervention
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence
- Current research varies in the frequency and duration across the spectrum of speech sound disorders. However, research suggests that there is significant difference in performance measured immediately after practice versus long term generalization of a skill. The transfer of motor learning skills into activities of daily living requires retention and generalization into new environments. Extensive practice of a single target can lead to prompt dependency or the inability to self regulate and self-correct. Random practice treatment leads to increased self-regulation independent of the level of treatment intensity.¹ The overall duration of treatment may be determined by the effectiveness of the type of practice utilized and

the complexity of the skills addressed. Higher frequency may not correlate to better outcomes.

- Individual patient characteristics affect optimal treatment intensity such as level of tolerance of therapy, cognitive level, environmental factors, and caregiver participation. Higher treatment frequency does not necessarily correlate to better outcomes. There is a concept of diminishing return in that once a certain point of function has been reached, additional change or improvement is unlikely regardless of treatment intensity.^{2, 3}
- Wren et al⁴ conducted a systematic review in order to classify speech sound intervention types. The number of sessions reported ranged from 3 to 67. The study addressed speech sound disorders for preschool age children across a variety of treatment approaches.
- Sugden and colleagues⁵ researched parent implemented interventions and reported an average of 4 to 15.8 hours of training for parents and caregivers. Studies were shown to demonstrate positive outcomes in treatment for speech sound disorders with this level of caregiver intervention
- Phonological intervention was reported to be effective with a minimum of 50 trials in at least 30 sessions by Williams et al⁶. Severe phonological delays required a dosage of 70 trials to support meaningful progress. The greater intensity of trials was reported to occur early in the course of intervention with less trials in a more naturalistic setting (generalization) occurring over time.
- Jacoby and colleagues⁷ discussed frequency and duration intensity for improvement in speech and language functioning. The results indicated that more severe deficits required a higher intensity of therapy in order to demonstrate improvement. Over 75% of subjects showed an increase in at least one FCM level after 20 hours of therapy services. The younger children received more benefit per unit of therapy than older subjects.
- Parent implemented interventions are found to be as effective as direct intervention when the frequency and duration are similar in intensity, and caregivers receive direct instruction. Current research supports the effectiveness of caregiver implemented intervention delivered in a naturalistic setting.⁸ In addition, parent implemented interventions are directly correlated with increased parent satisfaction and potentially increased treatment outcomes. The specific protocol for the most effective treatment has yet to be established. However, evidence shows that parent implemented intervention can be effective in treatment of speech sound disorders.^{5, 8} In both habilitative and rehabilitative therapy, functional use of a skill requires extensive practice and integration into the individual's home routine. Parents and caregivers should be educated and supported to incorporate skills outside of the therapeutic setting.⁹
- Individuals who are functionally stable, and have an adequate means of communication are candidates for periodic or intermittent therapy services. This clinical presentation is often observed in older children who have reached a functional level of communication appropriate for their developmental level.⁹

ST-22.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Language function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-22.5: Presentation

- The cause of speech sound disorders in most children is unknown. The cause of some speech sound problems is known and can be the result of motor speech disorders (e.g., Apraxia and Dysarthria), structural differences (e.g., cleft-palate), syndromes (e.g., Down Syndrome) or sensory deficiencies (e.g., hearing loss).
- Risk factors include:
 - ◆ Gender-males being higher risk
 - ◆ Ear, nose and throat problems
 - ◆ Family history of speech and language problems
 - ◆ Limited parental education/learning support at home.

ST-22.5.1: Assessments and Measurement Tools

- Kaufman Speech Praxis Test for Children (KSPT)
- Moving Across Syllables
- Goldman-Fristoe Test of Articulation-3 (GFTA-3)
- Fisher-Logemann Test of Articulation Competence
- Clinical Assessment of Articulation and Phonology-2 (CAAP-2)
- Spanish Preschool Articulation Test
- Arizona Articulation and Phonology Scale-4 (Arizona-4)
- Hodson Assessment of Phonological Patterns-3 (HAPP-3)
- Bilingual Articulation and Phonological Assessment (BAPA)

- Photo Articulation Test-3 (PAT-3)
- LinguiSystems Articulation Test (LAT)

ST-22.6: Speech Therapy Management

ST-22.6.1: Clinical Interventions:

➤ Contextual Utilization	➤ Treatment starts with practicing syllable based contexts in which the sound is produced correctly. That syllable is used to train more difficult productions. For example, a /s/ may be more easily produced in the syllable with a high front vowel.
➤ Contrast Therapy	➤ Targets focus on a specific phoneme feature using contrasting word pairs. Minimal pairs are different by one feature or phoneme that changes the word meaning (<i>tip</i> vs. <i>ship</i>). Maximal pairs use a sound target differing by several distinctive features which affect phoneme placement and manner to introduce sounds that the child cannot produce (<i>beat</i> vs. <i>cheat</i>).
➤ Core Vocabulary Approach	➤ Used with children who are highly unintelligible due to inconsistent misarticulations and may not respond well to traditional therapy. This is a word-based approach as opposed to a phoneme-based technique. Words the child commonly uses are selected for practice and feedback is provided to reinforce the most accurate production of each word.
➤ Cycles Approach	➤ Focuses on improving phonological patterns with a strategy similar to normal sound acquisition. It is used with children who have poor intelligibility, characterized by numerous omissions and limited phonemic inventories. Each cycle targets all phonological patterns in error until they emerge in spontaneous speech.
➤ Distinctive Features Therapy	➤ Focuses on sound features the child cannot produce (nasals, fricative, voicing, placement) and is usually used with children who substitute sounds. Error patterns are targeted using tasks such as minimal pair contrasts; usually once a contrast pattern emerges, it can be generalized to other sounds that share the same feature.
➤ Metaphon Therapy	➤ Used with children who appear to have not mastered phonological system rules. Examples are descriptive and provide information about how a sound is produced, e.g., voiced (noisy) vs. voiceless (quiet). Sounds most impacting intelligibility are selected first.
➤ Naturalistic Speech Intelligibility Intervention	➤ Uses everyday activities to elicit the target sound frequently during the session. For example, the child is asked about a toy that involves responses using the targeted sound. (i.e., "What color is the car?" "Red.") Appropriate productions are recast (i.e., casually modeled by the clinician or parent).
➤ Speech Sound Perception Training	➤ Speech perception tasks are used to help the child gain a consistent perception of the target sound. Tasks may include auditory bombardment and sound identification tasks. Usually used prior to or at the same time as speech production intervention.

ST-22.6.2: Specific Treatment Considerations

- Target Selection: Approaches used for selecting therapy targets for children with speech sound disorders include:
 - ◆ Developmental approaches-sounds are targeted based on typical age of acquisition.
 - ◆ Non-developmental approaches include:
 - Complexity approach-target later developing sounds, those not in the child's speech sound system to expose the child to unfamiliar distinctive features with the intent of generalizing these features to other sounds that the child does not produce (i.e., feature generalization then leading to the production of new sounds).
 - Dynamic systems approach-target specific features of sounds to stabilize their production. The intent is to transfer this knowledge to improve production of sounds that share the same features.
 - Systemic approach-target selection focuses on the function of the sound with the intent of reorganizing the sound system. Multiple sounds are selected that are maximally distinct (in terms of place, voice, manner) based on the child's phonemic collapse (i.e., the error sound substitutes for several phonemes). The goal is to expand the child's phonetic inventory by presenting a variety of phonemic features.
 - ◆ Other approaches include: selecting targets based on stimulability, personal relevance (e.g., child's name) and/or impact on intelligibility.
- Intelligibility: refers to the listener's ability to understand the child's speech.
 - ◆ A guideline for expected conversational intelligibility levels of typically developing children talking to unfamiliar listeners is summarized below:
 - 1 year- 25% intelligible
 - 2 year- 50% intelligible
 - 3 year- 75% intelligible
 - 4 year- 100% intelligible
 - ◆ Intelligibility can be impacted by several factors including:
 - Length of utterance
 - Familiarity with child's speech
 - Child's speech rate, intonation, loudness level, vocal quality and fluency
 - Contextual cues
 - Presence of ambient noise during conversation

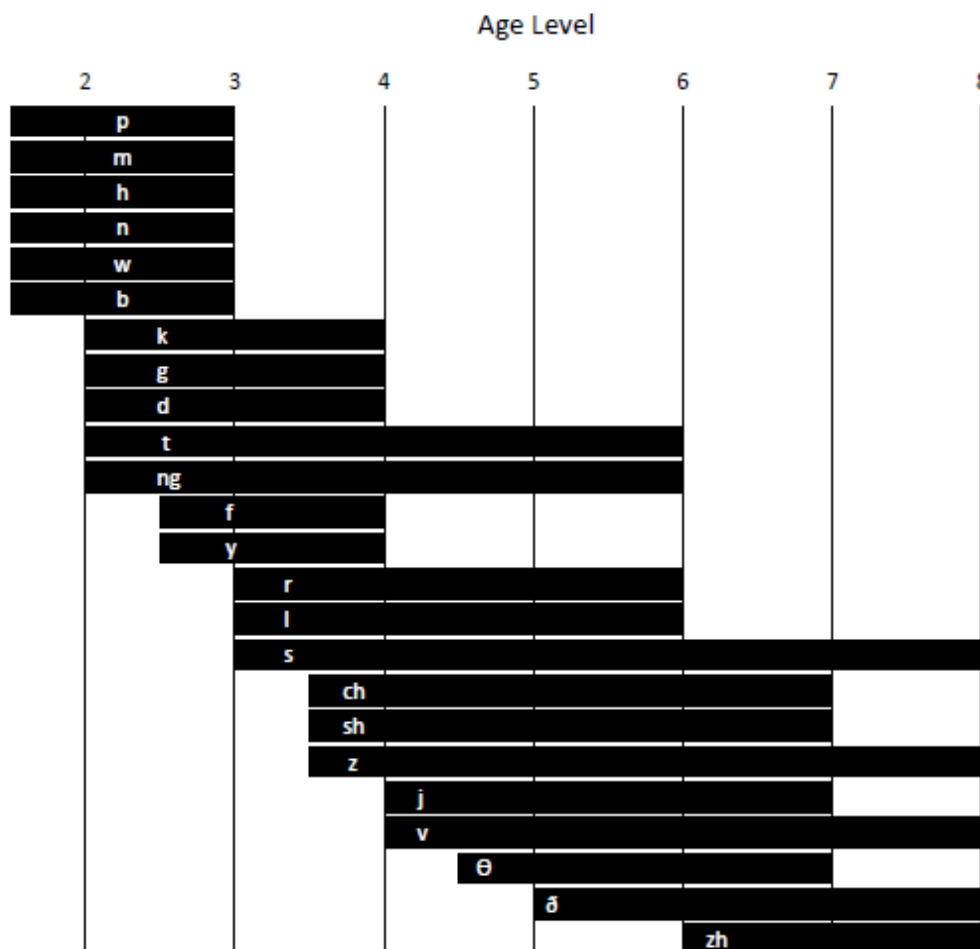
Speech Sound Developmental Norms

GFTA-2 (2000)

AGE	Initial Position of Word	Medial Position of Word	Final Position of Word
2 years	/b/ /d/ /h/ /m/ /n/ /p/	/b/ /m/ /n/	/m/ /p/
3 Years	/f/ /g/ /k/ /t/ /w/	/f/ /g/ /k/ ng /p/ /t/	/b/ /d/ /g/ /k/ /n/ /t/ /r/ /v/ /z/
4 Years	/kw/	/d/	/f/
5 Years	ch j /l/ /s/ sh y /bl/	ch j /l/ /s/ sh /z/	/l/ ng ch j /s/ sh /r/ /v/ /z/
6 Years	/r/ /v/ /br/ /dr/ /fl/ /fr/ /gl/ /gr/ /kl/ /kr/ /pl/ /st/ /tr/	/r/ /v/	
7 Years	/z/ /sl/ /sp/ /sw/ th (voiced) th (voiceless)	th (voiced)	th (voiceless)
8 Years		th (voiceless)	

The information used to create this chart was obtained from the Goldman Fristoe Test of Articulation-2 (GFTA-2) 2000. The table represents when 85% of the GFTA-2 study sample correctly produced the speech sounds and blends above. Please remember that this is just a general guide and that all children may develop sounds at different ages.

Age of Customary Consonant Production



Average age estimates and upper age limits of customary consonant production. The solid bar corresponding to each sound starts at the median age of customary articulation; it stops at an age level at which 90% of all children are customarily producing the sound (from Templin, 1957; Wellman et al., 1931). Source: Sander © 1972 American Speech-Language-Hearing Association.

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Selected Phonological Processes (Patterns)

Assimilation (Consonant Harmony) One sound becomes the same or similar to another sound in the word		
Process	Description	Example
Velar Assimilation	non-velar sound changes to a velar sound due to the presence of a neighboring velar sound	<i>kack</i> for <i>tack</i>
Nasal Assimilation	non-nasal sound changes to a nasal sound due to the presence of a neighboring nasal sound	<i>money</i> for <i>funny</i>
Substitution One sound is substituted for another sound in a systematic way		
Process	Description	Example
Fronting	sound made in the back of the mouth (velar) is replaced with a sound made in the front of the mouth (e.g., alveolar)	<i>tar</i> for <i>car</i> ; <i>date</i> for <i>gate</i>
Stopping	fricative and/or affricate is replaced with a stop sound	<i>tee</i> for <i>see</i> ; <i>chop</i> for <i>shop</i>
Gliding	liquid (/r/, /l/) is replaced with a glide (/w/, /j/)	<i>wabbit</i> for <i>rabbit</i>
Deaffrication	affricate is replaced with a fricative	<i>shop</i> for <i>chop</i>
Syllable Structure Sound changes that affect the syllable structure of a word		
Process	Description	Example
Cluster Reduction	consonant cluster is simplified into a single consonant	<i>top</i> for <i>stop</i>
Weak Syllable Deletion	unstressed or weak syllable in a word is deleted	<i>nana</i> for <i>banana</i>
Final Consonant Deletion	deletion of the final consonant of a word	<i>bu</i> for <i>bus</i>

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ST-22.6.3: Self-Management Techniques

- Consistent completion of an individualized home exercise program
- Augmentative and alternative communication devices
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques
- Academic Compensatory Support Accommodations

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ST-23: Spoken Language Disorders: Pediatrics**ST-23.1: Related Terms****ST-23.2: Definition****ST-23.3: Symptomatology****ST-23.4: Requirements for Speech Therapy Visits****ST-23.5: Presentation****ST-23.6: Speech Therapy Management**

ST-23.1: Related Terms

- Developmental language disorder
- Receptive language disorder
- Expressive language disorder
- Mixed expressive receptive language disorder
- Oral language disorder
- Specific Language Impairment.
- Spoken language disorder.

ST-23.2: Definition

- Spoken language disorders in children are characterized as deficiencies in the understanding and/or use of spoken language. The impairment may 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 present with other conditions such as Fragile X Syndrome, Down's syndrome, Autism Spectrum Disorder (ASD), intellectual disabilities, Attention Deficit Hyperactivity Disorder (ADHD), developmental delays, , toxins, hearing loss or Traumatic Brain Injury (TBI), and psychological/emotional disorders.¹ Learning disabilities in academic settings are correlated with language disorders particularly reading and writing skills.¹

ST-23.3: Symptomatology

Because speech and language delays can be mild or very severe, the symptoms will range both in number and intensity.	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 ➤ Delays in development of first words and phrases ➤ Difficulty expressing simple needs, wants or thoughts with single, 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 ➤ Reduced MLU for age	➤ Early interventions for infants and toddlers with expressive language delays-birth to 48 months

Because speech and language delays can be mild or very severe, the symptoms will range both in number and intensity.	Possible Consequence or Cause
➤ 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 ➤ Delayed vocabulary acquisition in comparison to same age peers¹ ➤ Additional support needed to understand new words	➤ 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 to poor communication skills ➤ Increased frustration and behavioral outbursts when unable to effectively express needs, wants, thoughts, and ideas ➤ Reduced MLU for age	➤ Language Expression Delay in children older than 4 years
➤ Suspect hearing loss ➤ Difficulty understanding and following instructions expected for age ➤ Difficulty pointing to body parts or common objects following a verbal command ➤ Difficulty comprehending age appropriate questions ➤ 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 ➤ Delayed vocabulary acquisition compared to same age peers¹	➤ Receptive Language Delay in children older than 4 years

Because speech and language delays can be mild or very severe, the symptoms will range both in number and intensity.	Possible Consequence or Cause
➤ Suspect hearing loss ➤ Difficulty producing speech sounds correctly for expected age ➤ Delayed phonological development including errors of younger, typically developing children¹ ➤ Incorrect use of consonant sounds ➤ Speech is difficult to understand and conversational intelligibility is affected. ➤ Delayed acquisition of phonological awareness skills (rhyming, sound/syllable deletion, segmentation, and blending)¹	➤ Phonological Delays and Disorders

ST-23.4: Requirements for Speech Therapy Visits

ST-23.4.1: Documentation Requirements

- Standardized assessments administered at least annually that support more than 1 SD below the mean in composite area.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-23.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for spoken language disorder are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in communication.
 - ◆ The individual presents with a functional expressive or receptive language disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of an expressive or receptive language disorder
 - ◆ The individual's communication skills are not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Standardized tests support a delay of more than 1 standard deviation below the mean in a composite area of language.

- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
 - ◆ Maintenance- Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific.
 - ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-23.4.3: Frequency and Duration

- Treatment frequency and duration must be based on:
 - ◆ Severity of objective clinical findings
 - ◆ Presence of and number of complicating factors and comorbidities
 - ◆ Natural history and chronicity of condition
 - ◆ Expectation for functional improvement with skilled intervention
 - ◆ Response to treatment provided
 - ◆ Patient's level of independence
- Individuals who are functionally stable, and have an adequate means of communication are candidates for periodic or intermittent therapy services. This clinical presentation is often observed in older children who have reached a functional level of communication appropriate for their developmental level.²
- Higher frequency accompanied by high dose treatment does not necessarily equate to better outcomes. Opportunities for learning should be distributed over time to allow for generalization. High dosage, low frequency therapy services were documented to provide better outcomes than high frequency, high dosage or low dosage, low frequency intensity. Extensive practice of a single target can lead to prompt dependency or the inability to self regulate and self-correct. Random practice treatment leads to increased self regulation.^{3,4}
- Jacoby and colleagues⁵ discussed frequency and duration intensity for improvement in speech and language functioning. The results indicated that more severe deficits required a higher intensity of therapy in order to demonstrate improvement. Over

75% of subjects showed an increase in at least one FCM level after 20 hours of therapy services. The younger children received more benefit per unit of therapy than older subjects.

- Bellon and colleagues⁶ conducted a study regarding treatment intensity. Results showed improvement in groups that received treatment 4 times a week for 6 weeks and 2 times a week for 12 weeks. No significant differences in progress were found between the two groups. Results indicated that language intervention can occur and provide benefit in a variety of service delivery schedules.
- Individual patient characteristics affect optimal treatment intensity such as level of tolerance of therapy, cognitive level, environmental factors, and caregiver participation. Higher treatment frequency does not necessarily correlate to better outcomes. There is a concept of diminishing return in that once a certain point of function has been reached, additional change or improvement is unlikely regardless of treatment intensity.^{7, 8}

ST-23.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Language function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-23.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- Educational and community based programs for support
- Behavioral intervention

- Vocational services for occupational assistance
- Psychologist for behavioral and mental health support
- AAC Specialist for assistance with implementation of augmentative or alternative communication

ST-23.5: Presentation

- Spoken Language Disorder is often identified in the presence of another developmental syndrome or medical condition. The etiology of spoken language disorder in otherwise typically developing children is idiopathic (unknown) at this time.

ST-23.5.1: Assessments and Measurement Tools

- Clinical Evaluation of Language Fundamentals-5 (CELF-5),
- Clinical Evaluation of Language Fundamentals-Preschool-2 (CELF-Preschool-2)
- Preschool Language Scale-5 (PLS-5),
- Comprehensive Assessment of Spoken Language-2 (CASL-2),
- Oral and Written Language Scales-II (OWLS-II)
- Rossetti- Infant and Toddler Scale
- Developmental Assessment of Young Children-2 (DAYC-2)
- Test of Auditory Comprehension of Language-4 (TACL-4)
- Receptive-Expressive Emergent Language-3 (REEL-3)
- Test of Early Language Development-4 (TELD-4)
- Test of Language Development-Primary-4 (TOLD-P:4)
- Test of Language Development-Intermediate-4 (TOLD-I:4)
- Test of Language Competence-E (TLC-E)
- Test of Early Communication and Emergent Language (TECEL)
- Peabody Picture Vocabulary Test-4 (PPVT-4)
- Expressive Vocabulary Test-2 (EVT-2)
- Receptive One Word Picture Vocabulary Test-4 (ROWPVT-4)
- Expressive One Word Picture Vocabulary Test-4 (EOWPVT-4)
- Batelle Developmental Inventory-2 (BDI-2)
- Bayley Scales of Infant and Toddler Development-3 (Bayley-111)
- Functional Communication Profile-R (FCP-R)
- Social Language Development Test
- Test of Pragmatic Language-2 (TOPL-2)

- Pragmatic Language Observation Scale (PLOS)
- Children's Communication Checklist-2
- Pragmatic Language Skills Inventory (PLSI)

ST-23.6: Speech Therapy Management

ST-23.6.1: Section Intentionally Left Blank

ST-23.6.2: Specific Treatment Considerations

- The following management will vary depending on the specific needs of the child.
 - ◆ 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. Constantino and Bonati⁹ report that "Communication is one of the fundamental human rights, and its impairment results in significant consequences in various areas of child development. Lack of functional communication is generally a life-long condition that severely impacts quality of life of subjects and their families, and is highly correlated with subsequent behavioral problems and high social and economic costs."
 - ◆ 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 language skills which can be enhanced with tactile, kinesthetic, auditory and visual prompts.
 - ◆ 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.
 - ◆ Children with significant language impairments have an opportunity to reach their full communication potential with access to appropriate AAC technology.

ST-23.6.3: Self-Management Techniques

- Consistent completion of an individualized home exercise program
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques
- Academic and Occupational Compensatory Support Accommodations

Home Medical Equipment

- Augmentative and assistive communication device.

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ST-24: Voice Disorders

ST-24.1: Related Terms**ST-24.2: Definition****ST-24.3: Symptomatology****ST-24.4: Requirements for Speech Therapy Visits****ST-24.5: Presentation****ST-24.6: Speech Therapy Management**

ST-24.1: Related Terms

Classification of Voice Disorders

- **Organic** — voice disorders that are physiological in nature and result from alterations in respiratory, laryngeal, or vocal tract mechanisms
- **Structural**: Vocal pathology that involves structural change of the vocal folds. Examples include vocal fold nodules, polyps, cysts, reflux laryngitis, sulcus vocalis, muscle atrophy of the larynx due to aging, recurrent respiratory papillomatosis, and laryngeal web.
- **Neurogenic**: voice disorders that result from problems of central and peripheral nervous system innervation to the larynx. Examples include unilateral or bilateral vocal cord paralysis, spasmodic dysphonia, vocal tremor, and essential tremor.
- **Functional**: Voice disorders that result from improper or inefficient use or function of the vocal mechanism in the presence of normal laryngeal anatomy. Examples include muscle tension dysphonia/aphonia (excessive tension during voice production), puberphonia, and vocal fatigue.
- **Psychogenic**: Psychological stress may contribute to onset of dysphonia/aphonia due to improper vocal habits.
- **Paradoxical Vocal Fold Movement (PVFM)**: An involuntary or abnormal closure or adduction of the vocal folds, usually during inhalation. This upper airway obstruction causes breathing difficulty. It can sometimes be misdiagnosed as exercise-induced asthma.¹

ST-24.2: Definition

- A voice disorder is characterized by a difference in vocal quality, pitch, or loudness as compared to others the same age and gender.

ST-24.3: Symptomatology

Dysphonia

- Impairment of the voice caused by a disorder of phonation. Dysphonia is often referred to as hoarseness. The disorder may affect one or more of the subsystems of speech including respiration, vocal fold vibration, and/or resonance.
- Symptoms of a voice disorder include:
 - ◆ Roughness
 - ◆ Breathiness (audible air escape while talking)
 - ◆ Strained vocal quality (increased effort while talking)
 - ◆ Strangled vocal quality (as if talking with breath held)
 - ◆ Voice pitch that is too high or too low
 - ◆ Voice pitch that is too soft or too loud
 - ◆ Aphonia (loss of voice)
 - ◆ Pitch breaks
 - ◆ Asthenia (weak voice)

- ◆ Gurgly/wet sounding voice
 - ◆ Vocal tremor- rhythmic wavering of vocal pitch/volume
 - ◆ Persistent voice change after prolonged voice use
 - ◆ Variable vocal quality throughout the day or after voice use
 - ◆ Breathing difficulties
 - ◆ Frequent coughing or throat clearing
 - ◆ Throat tightness, pain, or tenderness
- Signs and symptoms can occur in isolation or in combination. As treatment progresses, some symptoms may dissipate, and others emerge, as compensatory strategies are eliminated.
- Severity of the voice disorder cannot always be determined by auditory-perceptual voice quality alone.

Voice diagnoses involving airway dysfunction or vocal cord movement

- Vocal fold paralysis
- Vocal fold paresis
- Chronic Cough
- Laryngospasm
- Spasmodic dysphonia
- Bronchitis
- Autosomal diseases
- Periodic Occurrences of Laryngeal Obstruction - POLO
- Intermittent Arytenoid Region Prolapse – IARP
- Exercise-Induced Laryngeal Obstruction – EILO
- Exercise-Induced Laryngomalacia – EIL
- Aerodynamic Supraglottic Collapse – ASC
- Supraglottic Tissue Collapse – STC
- Paradoxical Arytenoid Movement – PAM
- Paradoxical Vocal Fold Motion (aka Vocal cord dysfunction) - PVFM
- Irritable larynx syndrome - ILS
- Pertussis
- Exercise-induced asthma
- Gastroesophageal reflux - GERD
- Laryngoesophageal reflux - LPR
- Idiopathic cough

ST-24.4: Requirements for Speech Therapy Visits

ST-24.4.1: Documentation Requirements

- A description of the member's current level of functioning or impairment
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level.
- Caregiver program or home maintenance program plan, as applicable for long term needs
- Member's most recent ENT physician diagnostic findings or laryngeal instrumental assessment.

ST-24.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for voice disorder are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in voice function.
 - ◆ The individual presents with a functional voice disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a voice disorder.
 - ◆ The individual's communication skills are not commensurate to those of others of the same chronological age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Objective findings, including standardized tests and observational assessments, support a significant impairment in voice function.
 - ◆ The individual has experienced a significant decline in voice function from prior level of function.
 - ◆ In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.
 - ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.

- ◆ Maintenance- Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-24.4.3: Frequency and Duration

Treatment frequency and duration must be based on:

- Severity of objective clinical findings,
- Presence of and number of complicating factors and comorbidities,
- Natural history and chronicity of condition,
- Expectation for functional improvement with skilled intervention,
- Response to treatment provided
- Patient's level of independence

ST-24.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same chronological/developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Voice function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-24.4.5: Referral Guidelines

- ENT Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- Vocational services for occupational assistance
- Psychologist for behavioral and mental health support

ST-24.5: Presentation**ST-24.5.1: Assessment and Measurement Tools**

- Instrumental assessments such as a laryngoscopy
- Voice Handicap Index (VHI)
- Pediatric Voice Handicap Index (pVHI)
- Voice-Related Quality of Life (V-RQOL)
- Pediatric Voice-Related Quality of Life (pV-RQOL)
- Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V)
- Clinical Voice Evaluation-2 (CVE-2)
- GRBAS (grade, roughness, breathiness, asthenia, strain) scale

ST-24.6: Speech Therapy Management

A patient with a voice disorder should be evaluated by a physician (typically an otolaryngologist/ENT) prior to beginning voice therapy.²

ST-24.6.1: Clinical Interventions

- Norms within different settings are considered when determining vocal needs and establishing goals. For example, vocal norms and needs within the workplace may be different from those within the community (e.g., home and social settings).
- SLPs often incorporate aspects of more than one therapeutic approach when developing a treatment plan.
- Approaches can be direct or indirect.
 - ◆ Direct approaches focus on manipulating the voice-producing mechanisms (e.g., phonation, respiration, and musculoskeletal function) in order to modify vocal behaviors and establishing healthy voice production. A therapeutic plan typically involves the use of at least one direct approach and one or more of the indirect approaches, based on the patient's condition and goals. Some clinicians concentrate on directly modifying the specific symptoms of the inappropriate voice. Others take a more holistic approach, with the goal of balancing the physiologic subsystems of voice production, respiration, phonation, and resonance.
 - ◆ Indirect approaches modify the cognitive, behavioral, psychological, and physical environments of voicing
- Indirect approaches include the following two components:
 - ◆ Patient education—discussing normal physiology of voice production and the impact of voice disorders on function; providing information about the impact of vocal misuse and strategies for maintaining vocal health (vocal hygiene)
 - ◆ Counseling—identifying and implementing strategies such as stress management to modify psychosocial factors that negatively affect vocal health

Voice Disorders Treatment Methods

- Develop an individual program designed to address all of the factors that are negatively impacting the voice.
- Identify behaviors that are contributing to the voice problems, including unhealthy vocal hygiene practices (e.g., shouting, talking loudly over noise, coughing, throat clearing, and poor hydration) and
- Implement healthy vocal hygiene practices (e.g., drinking plenty of water and talking at a moderate volume) and practices to reduce vocally traumatic behaviors (e.g., voice conservation).
- Develop a treatment plan that emphasizes implementation of strategies in a variety of communication situations within his/her home, work, school, 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 caregivers with information regarding community support groups and/or programs if appropriate in terms of the diagnosis.
- Continue to assess the individual because symptoms may change over time.
- Select and implement appropriate therapy techniques to achieve improved perceptual voice quality.
- Treatment intensity is variable but typically includes 1-2 x week 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

Physiologic Treatment Options

- Lee Silverman Voice Treatment (LSVT)^R
- Expiratory Muscle Strength Training (EMST)
- Vocal Function Exercises (VFEs)
- Semi-Occluded Vocal Tract (SOVT) Exercises
- Phonation Resistance Training Exercise (PhoRTE)
- Resonant Voice Therapy
- Manual Circumlaryngeal Techniques
- Yawn-Sigh
- Accent Method
- Cup Bubble/Lax Vox
- Straw Phonation
- Stretch and Flow Phonation
- Relaxation
- Lip Trill
- Posture
- Symptomatic Voice Therapy
- Amplification
- Auditory Masking
- Biofeedback

- Chant Speech
- Confidential Voice
- Inhalation Phonation
- Twang Therapy

Symptomatic Treatment Options

- Treatments aimed at modifying deviant vocal symptoms or perceptual voice components using a variety of facilitating techniques. Symptoms could include breathy phonation, glottal attacks or glottal fry, deviant pitch, or voice that is too soft or loud.

Voice Prosthesis

- A voice prosthesis may be needed in the instance that results in the loss of functional voice. Types of speaking devices may include the following:
 - ◆ Tracheoesophageal Puncture and Prosthesis
 - ◆ Electrolarynx
 - ◆ Speaking Valve

ST-24.6.2: Section intentionally left blank

ST-24.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- Caregiver training and education
- Daily utilization of compensatory strategies and self cueing techniques

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ST-25: Written Language - Disorders: Pediatrics

ST-25.1: Related Terms**ST-25.2: Definition****ST-25.3: Symptomatology****ST-25.4: Requirements for Speech Therapy Visits****ST-25.5: Presentation****ST-25.6: Speech Therapy Management**

ST-25.1: Related Terms

- Developmental written language disorder
- Reading and writing disorder
- Reading disorder
- Writing disorder
- Language learning disability
- Mixed Receptive and Expressive Language Disorder – Reading
- Mixed Receptive and Expressive Language Disorder – Writing.

ST-25.2: Definition

- Developmental written language disorders are characterized as delays or deficiencies in the reading comprehension and written expression of language. The impairment may involve difficulty understanding and expressing written information because of their pre-existing problems in knowledge and use of spoken language (vocabulary, grammar, syntax and non- literal language concepts). The correlation between spoken and written language is well established. Reading and writing require the foundational spoken language skills of phonological processing, vocabulary knowledge, spoken language comprehension and executive functioning. These disorders may manifest symptoms of dyslexia and/or dysgraphia, but diagnosis of dyslexia and/or dysgraphia alone do not qualify as a Developmental Written Language Disorder. Please note that the information contained in this guideline may be best understood in concurrence with the guideline for Spoken Language Disorders in Pediatrics.

ST-25.3: Symptomatology

Symptomatology	Possible Consequence or Cause
➤ Difficulty with phonological structure of words ➤ Difficulty with morphological structure of words ➤ Difficulty forming stable associations with orthographic representations of words in print ➤ Difficulty with word fluency and reading comprehension ➤ Impaired written spelling ➤ Impaired recognition of discourse planning, function, organization and effectiveness ➤ Problems with using syntax and cohesive devices to represent relationships among ideas ➤ Impaired formulation of written discourse (narrative and expository) ➤ Difficulty with social communication	➤ Spoken language disorder ➤ Attention-deficit hyperactivity disorder (ADHD) ➤ Emotional disability ➤ Intellectual disability (ID) ➤ Deaf or hard-of-hearing (DHH) ➤ Autism Spectrum disorder (ASD) ➤ Insufficient early oral language experience ➤ Limited early literacy experience ➤ Insufficient reading and writing instruction ➤ Negative consequences of low performance in reading and writing

ST-25.4: Requirements for Speech Therapy Visits

ST-25.4.1: Documentation Requirements

- Standardized assessments administered at least annually that support a delay of more than 1 SD below the mean in composite area of both written and spoken language. In the absence of a documented spoken language disorder, education learning services such as reading, writing, and spelling, studying are not covered.
- Treatment plan with functional and measurable goals including objective measures for baseline and current progress/level. Goals must be appropriate and attainable based on the child's developmental level.
- Caregiver program or home maintenance program plan, as applicable for long term needs

ST-25.4.2: Admission Criteria

- The admission of an individual into speech-language pathology services must be in collaboration with the individual, family, or designated guardian. The elements to support medical necessity for initiation into treatment for **written language disorders** are described below.
 - ◆ Referral from the individual, caregiver, physician, other speech-language pathologist, or team (e.g., interdisciplinary, management) due to a suspected impairment in written language.
 - ◆ The individual presents with a functional written language disorder that inhibits the ability to communicate optimally across environments and communication partners.
 - ◆ An evaluation by an ASHA certified speech-language pathologist identifies the presence of a written language disorder.
 - ◆ The individual's written language skills are not commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
 - ◆ The individual's communication skills impair participation in health, safety and independence status
 - ◆ Standardized tests support a delay of more than 1 standard deviation below the mean in a composite score of both written and spoken language.
- In order to establish medical necessity for speech therapy services, the following criteria must be met.
 - ◆ The treatment must be considered specific and effective for the patient's condition under evidence based practice guidelines.
 - ◆ Frequency and Duration must be considered acceptable under established standards of practice.
 - ◆ The complexity of the condition must be such that the skills of a speech therapist are required for the frequency requested.

- ◆ Habilitative and Rehabilitative services- A positive prognosis must be established that the patient's condition is expected to improve from the services provided.
- ◆ Maintenance-Services are required to maintain the member's current condition or to prevent or slow deterioration of the member's condition. Services are considered medically necessary 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 patient
 - To educate/instruct the patient or appropriate caregiver regarding the maintenance program
 - For periodic re-evaluations of the maintenance program
 - Coverage of maintenance service is health plan specific
- ◆ Continuation of care is supported by functional progress resulting from a positive response to skilled treatment.

ST-25.4.3: Frequency and Duration

Treatment frequency and duration must be based on:

- Severity of objective clinical findings,
- Presence of and number of complicating factors and comorbidities,
- Natural history and chronicity of condition,
- Expectation for functional improvement with skilled intervention,
- Response to treatment provided
- Patient's level of independence

Individuals who are functionally stable, and have an adequate means of communication are candidates for periodic or intermittent therapy services. This clinical presentation is often observed in older children who have reached a functional level of communication appropriate for their developmental level.¹

ST-25.4.4: Discharge Criteria

- The individual's communication skills are commensurate to those of others of the same developmental age, gender, ethnicity, or cultural and linguistic background.
- The individual's communication skills do not impair participation in health, safety and independence status
- Written language function is determined to be within normal limits or has reached the individual's premorbid status.
- Goals and objectives in the treatment plan have been achieved
- Patient has reached highest functional level of ability
- The tasks are repetitive in nature and no longer skilled, or the patient requires ongoing cueing to complete tasks
- Caregivers, family members, and support personnel have been trained to use communicative strategies and other approaches to improve or maintain skills, decrease the risk for decline, and/or decrease adverse behaviors while enhancing the person's quality of life.
- Medical condition dictates discharge from services

ST-25.4.5: Referral Guidelines

- Physician or neurologist for medical concerns
- Social worker for patient or family concerns
- Audiologist for suspected hearing loss
- Physical or occupational therapy for gross and fine motor skills
- Educational and community based programs for support
- Behavioral intervention
- Psychologist for behavioral and mental health support

ST-25.5: Presentation

A written language disorder presents as difficulty in understanding and expressing written information because pre-existing problems in knowledge and use of spoken language (vocabulary, grammar, syntax and non-literal language concepts). A prior or current diagnosis of spoken language disorder typically precedes the diagnosis of a written language disorder.

Differentiating Dyslexia Only from Written Language Disorder (Reading)

Reading Disorder Requires Skilled SLP Services	Dyslexia Only Not Requiring Skilled SLP Services
➤ Difficulty understanding and expressing written information because of their pre-existing problems in knowledge and use of oral language (vocabulary, grammar, syntax and non-literal language concepts). ➤ May demonstrate dyslexia and/ or dysgraphia as well.	➤ Trouble matching visually represented symbol (Letter) with the orally spoken phoneme (sound). ➤ May demonstrate dysgraphia as well.
➤ Typically evident in preschool.	➤ Typically evident in Kindergarten/1st grade
➤ Demonstrates an oral language impairment or a history of a spoken language impairment. Particularly evident in narrative retelling tasks.	➤ No preschool history of delayed oral language milestones or primary oral language disability. Oral language test scores are within normal limits.
➤ Scores on reading tests below normal limits with difficulty noted in the following areas: ◆ Impaired reading comprehension of oral or silent reading for: ■ Words (vocabulary) ■ Sentences ■ Text (factual & inferential questions) ◆ Impaired written composition: ■ Word retrieval (finding right word) ■ Morphology (grammar, (i.e., verb tense, word prefix or suffix) ■ Syntax (i.e., word order in sentences) ■ Narrative retelling	➤ Scores on Reading Tests below normal limits with difficulty noted in some or all of the following areas: ◆ Difficulty with: ■ Naming letters ■ Associating sounds with letters ■ Storing written words in memory ◆ Impaired: ■ Accuracy and/or rate for sounding out and blending sounds in real words, pseudo words (i.e., fake words), and/or word spelling

Differentiating Dysgraphia Only from Written Language Disorder (Writing)

Writing Disorder Requires Skilled SLP Services	Dysgraphia Only Not Requiring Skilled SLP Services
➤ Difficulty understanding and expressing written information because of their pre-existing problems in knowledge and use of oral language (vocabulary, grammar, syntax and non-literal language concepts). May demonstrate dyslexia and/ or dysgraphia as well.	➤ Trouble matching fine motor patterns for writing visually represented symbol (letter) with the orally spoken phoneme (sound), impaired memory for storing words to analyze their sounds, poor sequencing of finger movements in order to write letters with or without a model.
➤ Typically evident in preschool.	➤ Typically evident in Kindergarten/1st grade
➤ Demonstrates an oral language impairment or a history of an oral language impairment in comprehension and/ or production of language.	➤ Demonstrates impaired handwriting for legibility and/or automatic retrieval of ordered letters from memory. Also, difficulty with letter production from memory or copying letters and words from a model.
➤ Scores on writing tests below normal limits with difficulty noted in the following areas: ◆ Difficulty with: ■ Age appropriate vocabulary ■ Knowledge of complex sentence types ◆ Impaired written composition: ■ Word retrieval (finding right word) ■ Morphology (grammar, (i.e., verb tense, word prefix or suffix) ■ Syntax (i.e., word order in sentences) ■ Spelling ◆ Impaired listening comprehension: ■ Difficulty gaining meaning from orally presented language especially for questions that require the person to infer information ■ Difficulty remembering orally spoken sentence and written sentences	➤ Scores on writing tests below normal limits with difficulty noted in some or all of the following areas: ◆ Difficulty with: ■ Sequential finger movements ■ Spelling and ■ Timeliness of work completion or reduced complexity of composition due to spelling and/or handwriting difficulties. ■ Working memory tasks ◆ Impaired orthographic coding: ■ Storing written words in working memory ■ Processing written words in working memory ■ Analyzing letters in words stored in working memory ◆ Impaired orthographic loop: ■ Formulating internal codes for letters and written words ■ Finger sequencing plans ■ Integrating the internal codes with finger movements for letter and written word production

ST-25.5.1: Assessments and Measurement Tools

Spoken Language and Literacy Test Instruments

- Emerging Literacy Language Assessment (ELLA)
- Oral and Written Language Scales II (OWLS II)
- Test of Narrative Language
- Test of Integrated Language and Literacy Skills (TILLS)

Reading/ Literacy Test Instruments

- *Comprehensive Test of Phonological Processing-2* (CTOPP-2)
- Dynamic Indicators of Basic Early Literacy Skills (DIBELS)
- *GORT-5: Gray Oral Reading Tests*–Fifth Edition
- *The Test of Reading Comprehension* – Fourth Edition (TORC-4)

Writing Test Instruments

- Test of Written Language-4 (TOWL-4)

ST-25.6: Speech Therapy Management

- The following management will vary depending on the specific needs of the child.
- Develop an individual program designed to address the child's immediate written communication needs with a balanced focus on all areas of difficulty. Using a balanced focus allows the child to learn and participate within the context of authentic language uses while they participate in a variety of written communication situations within his/her home, school and/or community.
- Develop an individual program utilizing the spoken and written communication strengths of the child and the expectations of the family.
- Provide family members, caregivers, guardian, siblings, educators and/or other communication partners training in written 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
- School based programs.
- Continue to assess the child because symptoms will change over time.

ST-25.6.1: Clinical Interventions

- Reading
 - ◆ Word structure approaches focus on reading decoding — systematic and explicit approaches that are designed to teach such elements as grapheme-phoneme correspondences (for reading and spelling regular words), irregular orthographic patterns, and associations of morphemic components of words and orthographic patterns.
 - ◆ Language comprehension approaches focus on identifying and closing gaps in comprehension that may be due to problems with discourse organization, understanding of cohesive devices, unpacking of syntactic complexity, recognition of unknown vocabulary, and the ability to make sense of words in context.
- Writing
 - ◆ Process-oriented approaches focus on the processes involved in writing, including developing ideas, planning (pre-writing), organizing, drafting, reflecting, revising, and editing.
 - ◆ Product-oriented approaches focus on the written form, including vocabulary, spelling, and grammar; use of cohesive devices; use of writing conventions; and effectiveness of intended communication.
 - ◆ Address both process and product simultaneously, when possible
- Spelling
 - ◆ Auditory (e.g., phonemic awareness)
 - ◆ Visual (e.g., attending to words in print—orthographic pattern awareness)
 - ◆ Kinesthetic (e.g., tracing letters of a new word)
 - ◆ Multisensory approaches that integrate auditory, visual, and kinesthetic approaches
 - ◆ Developmental sequence of spelling to facilitate acquisition of conventional spelling skills
 - ◆ Memorization and testing of selected words in list format and in composition
- Intervention with Deaf or Hard of Hearing
 - ◆ Visual phonics —a system that uses distinct hand shapes for each English phoneme to clarify sound–symbol relationships; hand shapes represent movements of the mouth, tongue, and throat during oral production that can be associated with the printed letter or letters
 - ◆ Fingerspelling —a system that uses hand shapes, each of which corresponds to a letter in the English alphabet.

ST-25.6.2: Section Intentionally left blank

ST-25.6.3: Self-Management Technique

- Consistent completion of an individualized home exercise program
- Augmentative and alternative communication devices
- Caregiver training and education
- Academic and Occupational Compensatory Support Accommodations
- Daily utilization of compensatory strategies and self cueing techniques.

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