recognizing value

National Outcomes Measurement System

Count Me In

Pre-Kindergarten

National Data Report
2012 – 2016

ASHA
American Speech-Language-Hearing Association

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INTRODUCTION

The information contained in this report is based on the data collected from the American Speech-Language-Hearing Association's National Outcomes Measurement System (NOMS). The NOMS Pre-Kindergarten component utilizes the Functional Communication Measures (FCMs), a series of seven-point scales, to assess functional change in communication and swallowing abilities over time (see the appendix for a full list of FCMs and a sample seven-point scale).

This report summarizes findings from national data collected in both health care and school settings between 2012 and 2016. The data enclosed give a detailed look at child characteristics and service delivery patterns of 7,794 preschoolers receiving speech-language pathology services.

NOMS data provide crucial information about speech-language pathology intervention. Health care, education, and insurance policy changes can be informed by these data. In addition, NOMS data justify the need for speech-language pathology services to be included in managed care systems and employee benefits packages. NOMS data also elucidate the impact of those services, including how certain service characteristics maximize results for consumers, other clinicians, administrators, and policymakers.

Health care and school settings participating in NOMS have access to reports that summarize and compare their data to national trends in similar settings. If you are not currently participating in NOMS and would like to find out more information, please visit our Web site at http://www.asha.org/NOMS.

Suggested Citation

American Speech-Language-Hearing Association. (2019). *National Outcomes Measurement System: Pre-Kindergarten National Data Report 2019.* Rockville, MD: National Center for Evidence-Based Practice in Communication Disorders.

REPORT HIGHLIGHTS

- Spoken language production was the most frequently treated disorder (59.3%), while cognitive orientation was the least treated (2.9%) (p. 9).
- The majority of SLP intervention was done on a one-on-one basis regardless of the functional disorder being treated (pp. 11-13).
- On average, children received SLP services one time per week for 46-60 minutes (p. 14).
- For each FCM, more than half of the children made demonstrable progress following SLP intervention, including those who were admitted with lower functional communication and/or swallowing abilities (pp. 18-23).
- Increases in number of treatment sessions and hours of treatment for the top FCMs addressed resulted in more children making progress (pp. 18-23).

SECTION I

NATIONAL PROFILE

- Child Race/Ethnicity
- Child Gender
- Treatment Setting
- Structured Home Program Established as Part of Treatment Plan
- Primary Funding Source
- Associated Medical Factors
- Functional Communication Measures (FCMs) Treated

NATIONAL PROFILE

Table 1: Race/Ethnicity

Race/Ethnicity	Percent
White	53.3%
Black or African American	19.9%
Hispanic or Latino	17.3%
Asian	4.0%
American Indian or Alaska Native	1.0%
Native Hawaiian or Other Pacific Islander	0.4%
Unknown	6.6%

Percentages may total more than 100% because a patient may have selected multiple race/ethnicity categories.

Figure 1: Gender

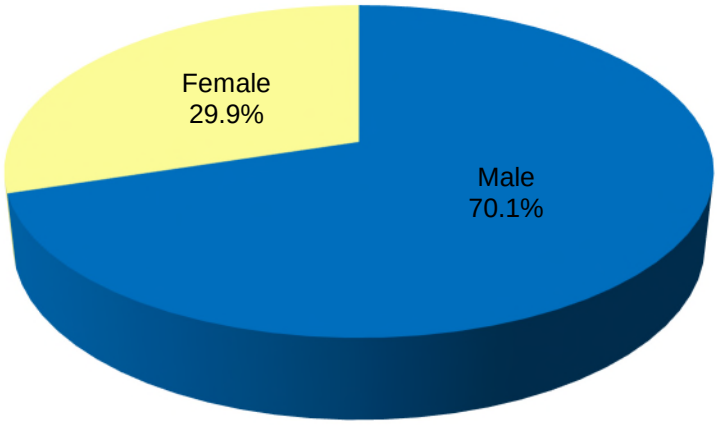


Figure 2: Treatment Setting

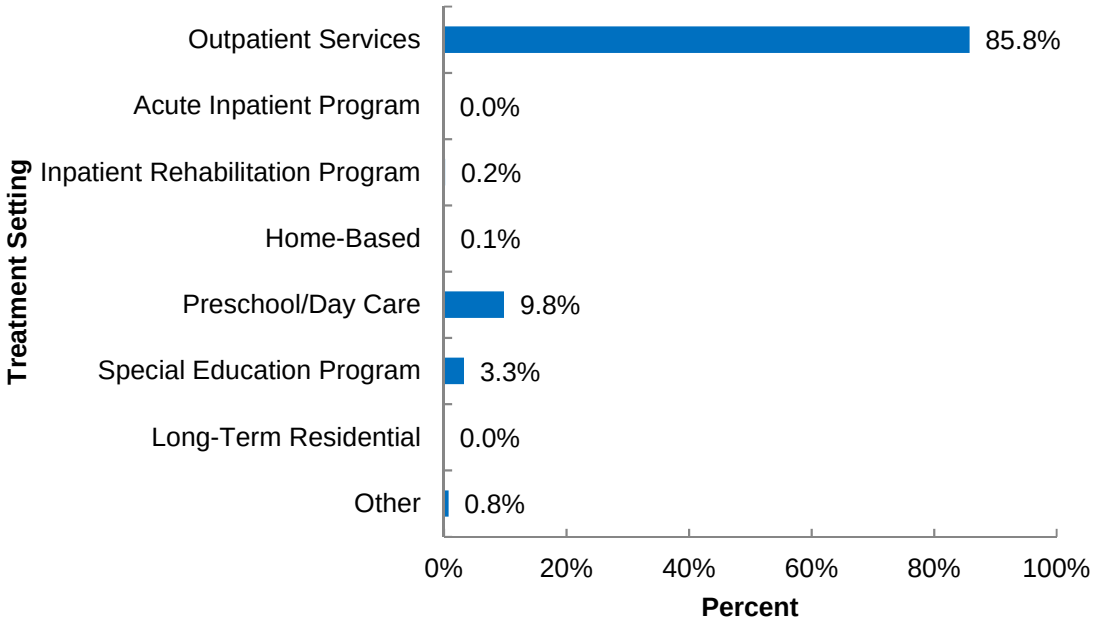


Figure 3: Structured Home Program Established as Part of Treatment Plan?

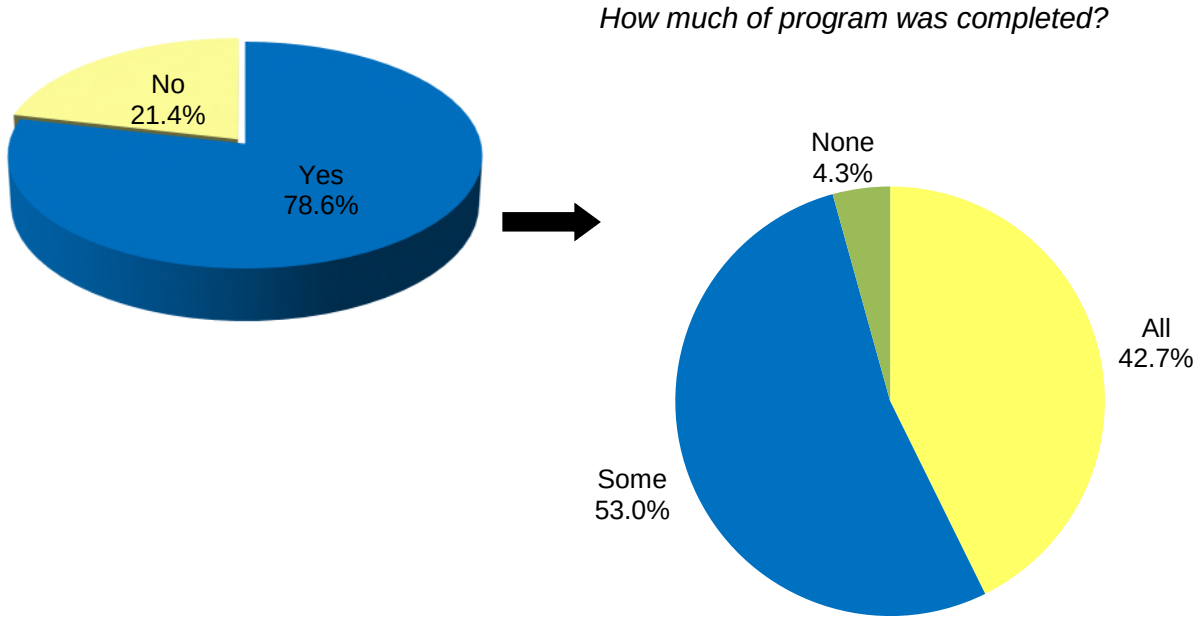


Table 2: Primary Funding Source

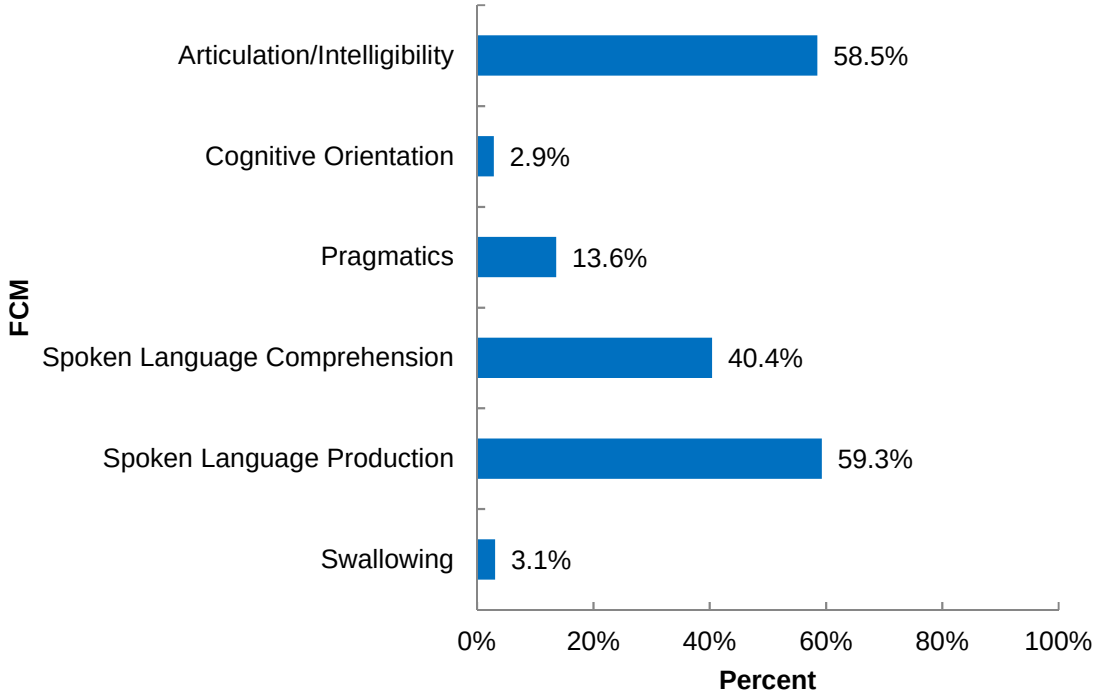
Funding Source	Percent
Medicaid (managed care)	23.2%
Managed Care Plans	20.9%
Commercial Fee-for-Service	19.1%
Medicaid (fee-for-service)	14.4%
Organization-Sponsored Assistance	5.0%
Children's Health Insurance Program	3.9%
IDEA	3.6%
Self-Pay	3.5%
Other Educational Funding	1.9%
Medicare	1.6%
Rehabilitation Act (Section 504)	0.0%
Unknown	2.8%
TOTAL	**100%**

Table 3: Associated Medical Factors

Associated Medical Factors	Percent
Autism & Related Disorders	15.6%
Developmental Delay	9.8%
Syndrome	2.4%
Hearing Loss: Conductive	1.6%
Neuromotor Disorders	1.4%
Attention Deficit Disorder	1.3%
Craniofacial Factors	1.2%
Seizure Disorders	1.0%
Hearing Loss: Sensorineural	1.0%
Cerebrovascular Issues	0.5%
Anoxic Brain Damage	0.4%
Head Injury	0.4%
Mental Retardation	0.3%
Brain Tumor	0.2%
Other	6.6%
None	61.7%

Percentages may total more than 100% because multiple medical factors could be associated with the communication disorder(s) being treated.

Figure 4: Functional Communication Measures (FCMs) Treated



Percentages may total more than 100% because a patient may have been scored on multiple FCMs.

SECTION II

SPEECH-LANGUAGE PATHOLOGY SERVICES

- Predominant Service Delivery Model by FCM
- Average Number of Times per Week Child Received SLP Services
- Average Length of SLP Sessions
- Hours of Service
- Received Services from Another Program/Facility?
- Primary Reason for Discharge

SPEECH-LANGUAGE PATHOLOGY SERVICES

Predominant Service Delivery Model by FCM

Figure 5: Articulation/Intelligibility

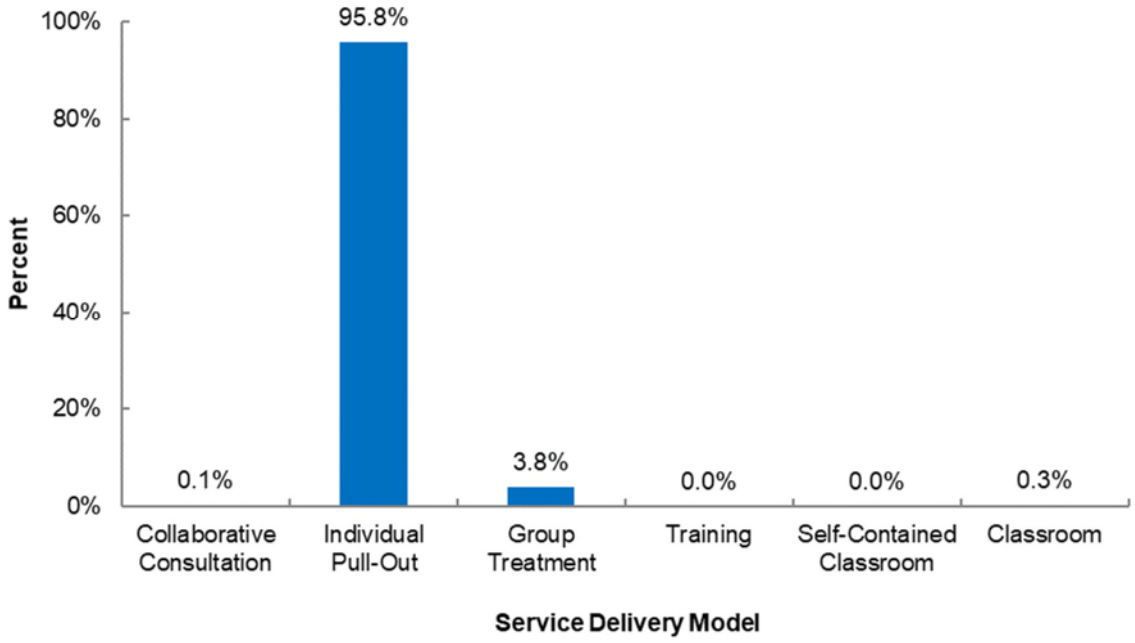
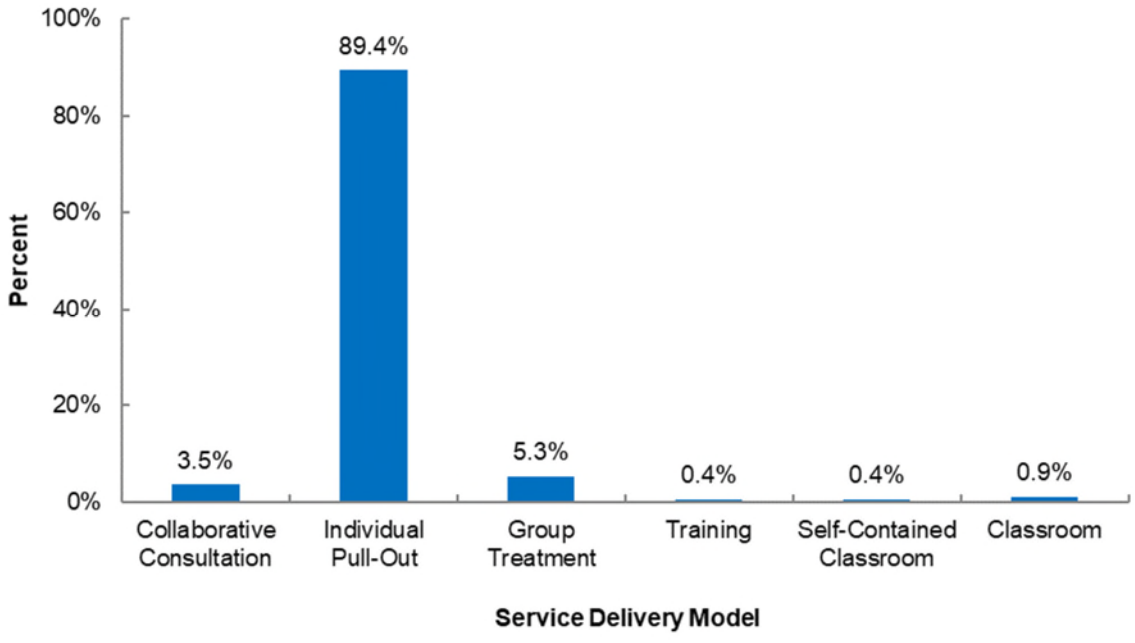


Figure 6: Cognitive Orientation



Predominant Service Delivery Model by FCM

Figure 7: Pragmatics

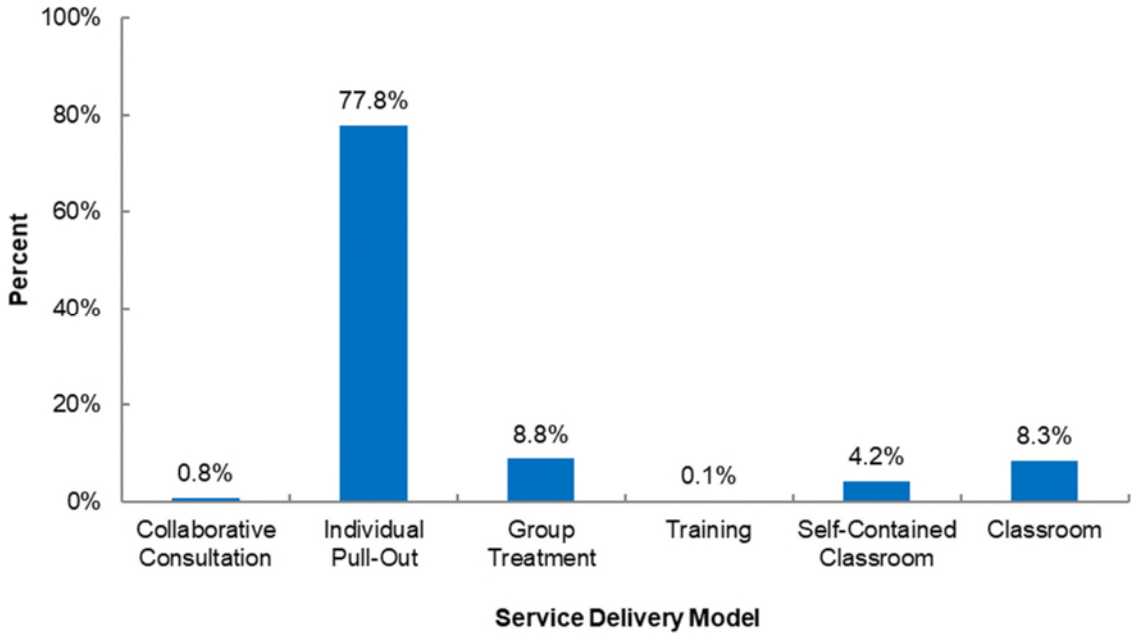
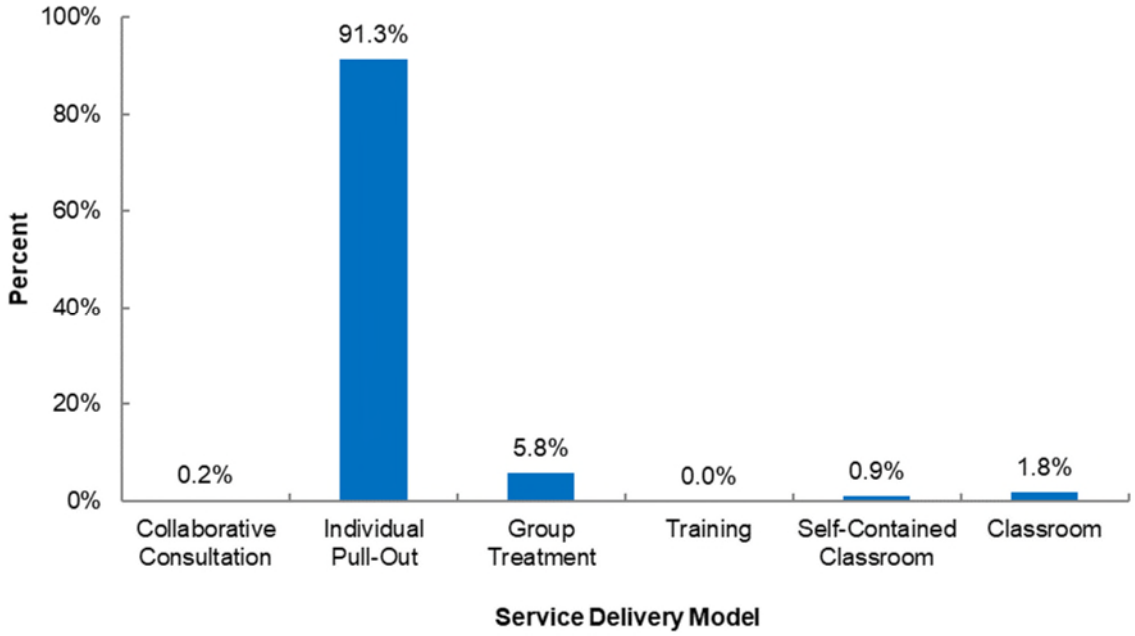


Figure 8: Spoken Language Comprehension



Predominant Service Delivery Model by FCM

Figure 9: Spoken Language Production

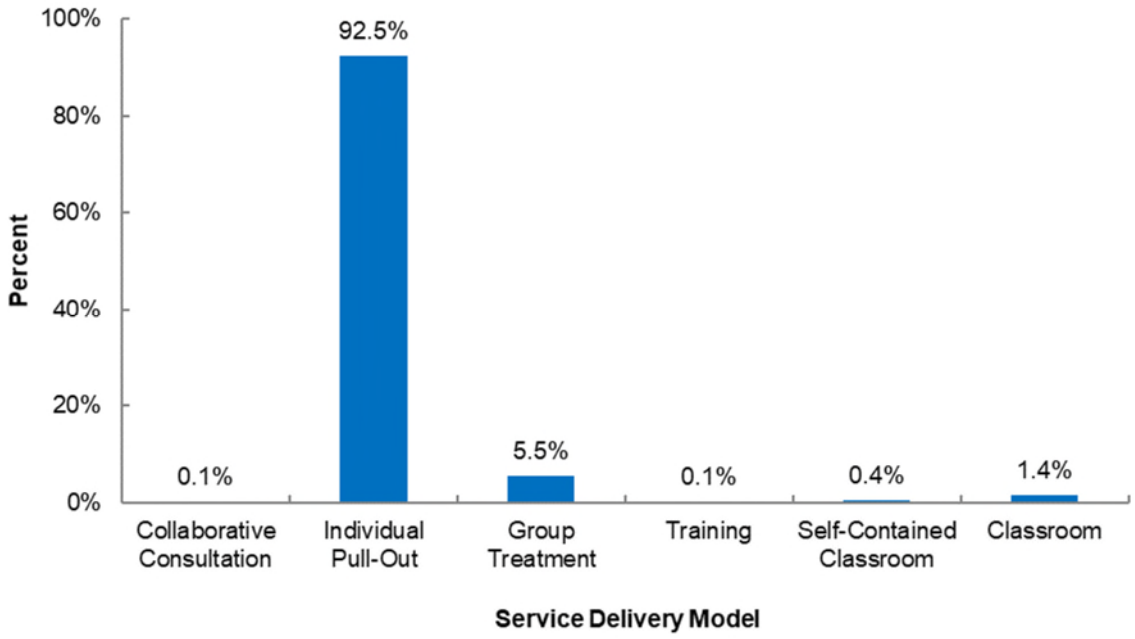


Figure 10: Swallowing

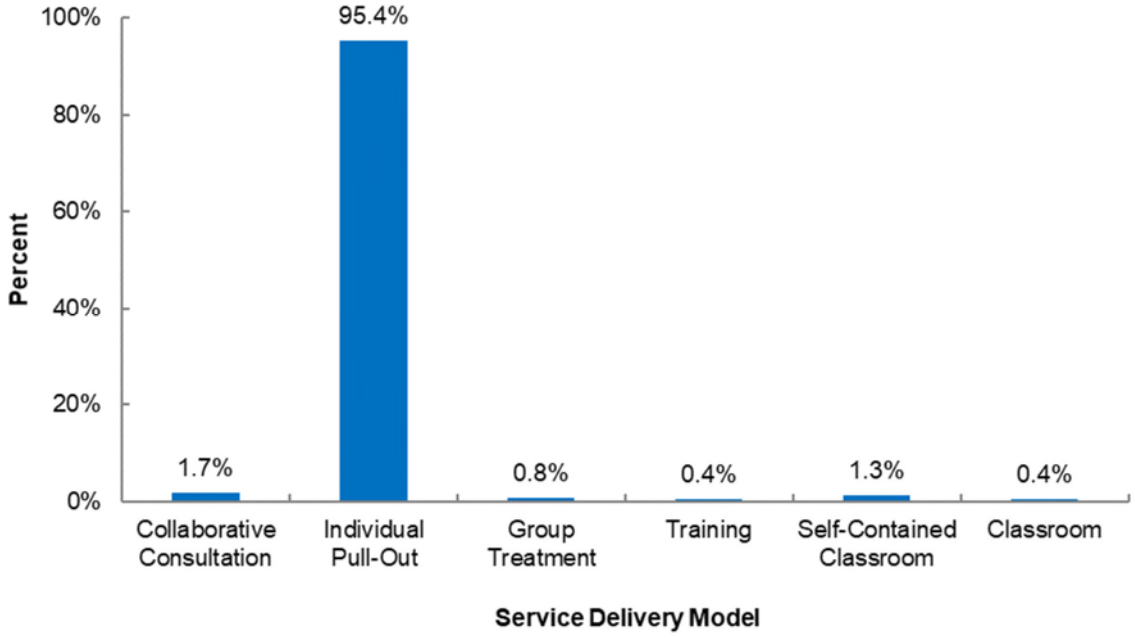


Figure 11: Average Number of SLP Sessions per Week

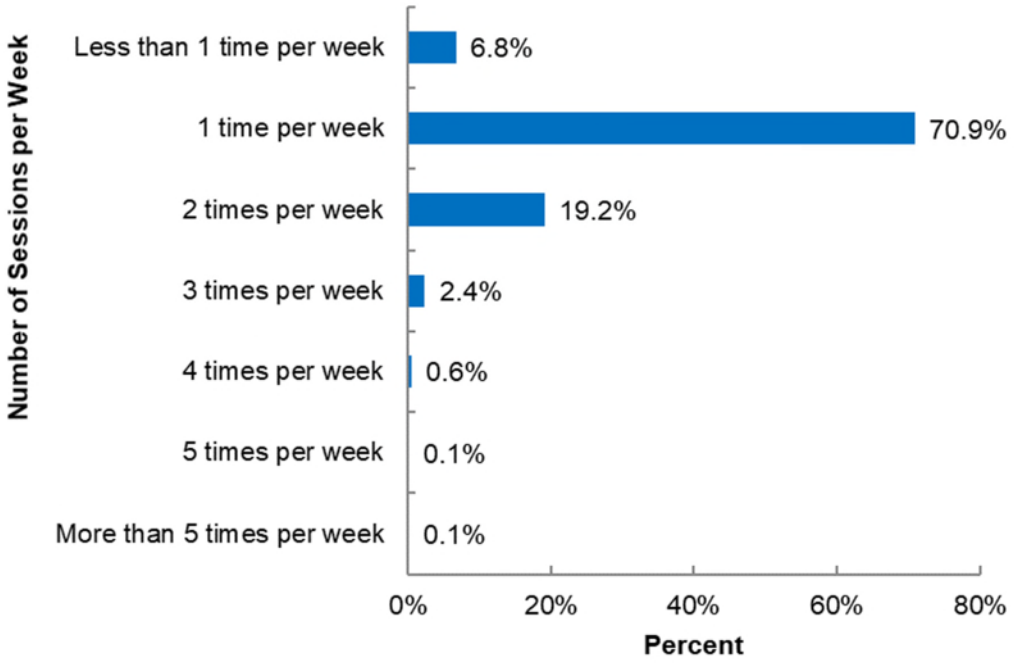


Figure 12: Length of SLP Session

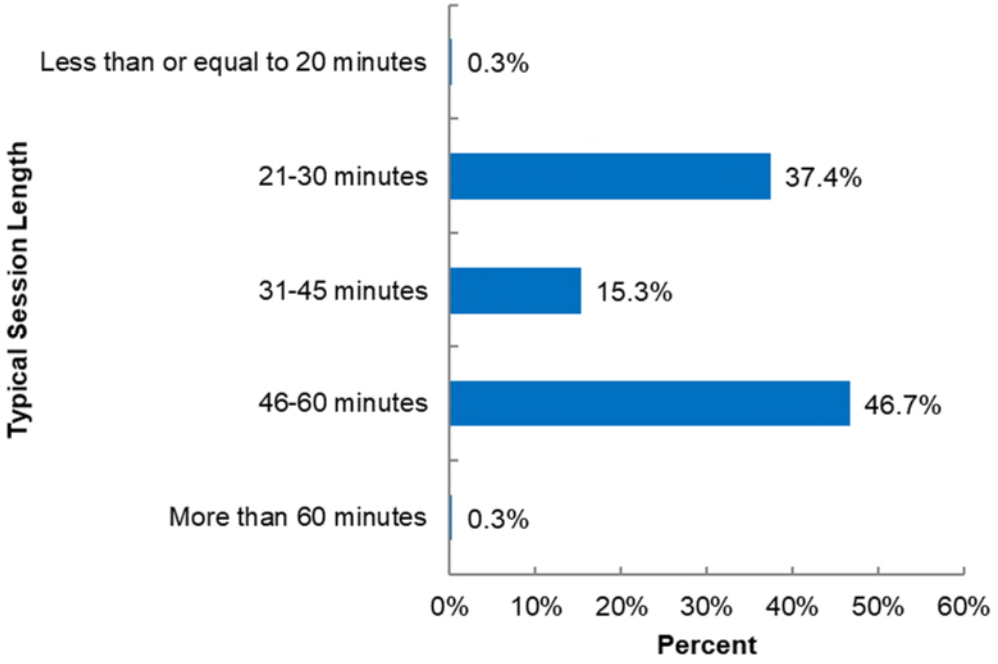


Figure 13: Total Amount of Treatment Time (in hours)

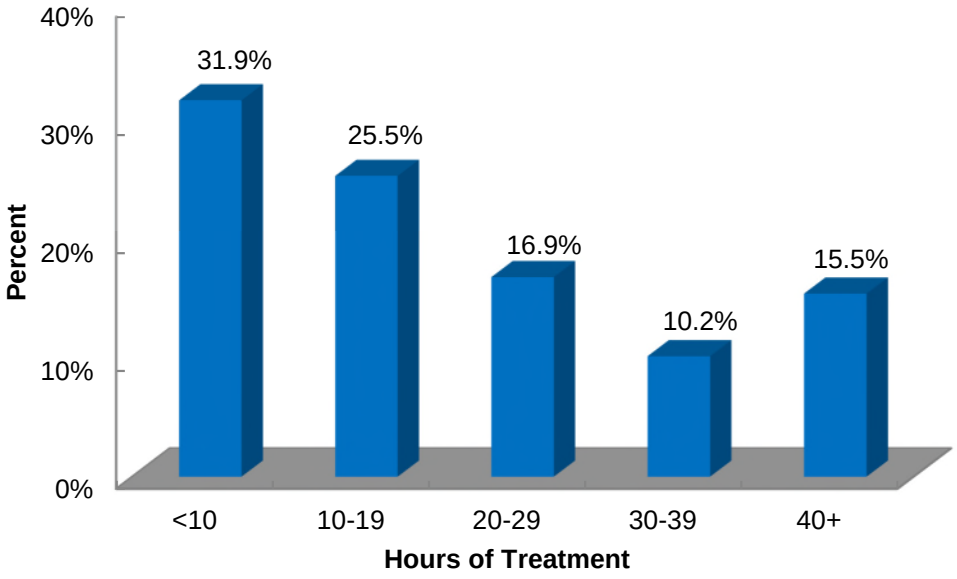


Figure 14: During the Course of Treatment, Did the Child Receive Services from Another Program/Facility?

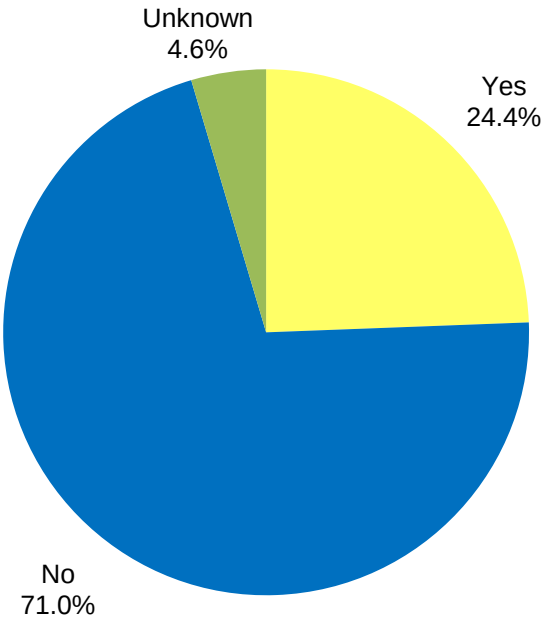


Table 4: Primary Reason for Discharge

Reason	Percent
Child Discharged from Program/Facility	32.4%
Treatment Goals Met	24.6%
Funding Stopped-Caregiver Unable to Pay	9.8%
Treatment Noncompliance or Refusal	9.5%
Progress Plateaued	4.3%
Illness/Medical Complications/Contraindications	0.3%
Death	0.0%
Other	19.0%
TOTAL	**100%**

SECTION III

FUNCTIONAL OUTCOMES

- **FCM Progress by Mean Number of Treatment Sessions and Treatment Time**
- **Change in Functional Level from Level at Admission**
- **Change in Functional Level by Amount of Treatment**
    - Articulation/Intelligibility
    - Cognitive Orientation
    - Pragmatics
    - Spoken Language Comprehension
    - Spoken Language Expression
    - Swallowing

FUNCTIONAL OUTCOMES

Articulation/Intelligibility

Table 5: FCM Progress by Mean Number of Treatment Sessions and Treatment Time

Progress	Percent	Sessions	Time (hr)
No Progress	24.6%	16.1	10.2
Improved One Level	37.2%	26.3	17.0
Improved Multiple Levels	38.3%	34.0	20.5
TOTAL	**100%**	**26.8**	**16.7**

Table 6: Change in Functional Level from Level at Admission

Functional Level at Admission	No Progress	Improved One Level	Improved Multiple Levels
1	21.6%	17.9%	60.5%
2	17.9%	27.0%	55.1%
3	18.5%	36.5%	45.0%
4	25.4%	37.8%	36.7%
5	32.6%	42.4%	25.0%
6	41.3%	58.7%	N/A
All Levels	**24.6%**	**37.2%**	**38.3%**

Table 7: Change in Functional Level by Amount of Treatment

Hours of Treatment	No Progress	Improved One Level	Improved Multiple Levels
<10 hours	36.9%	36.1%	27.0%
10-19 hours	17.2%	38.9%	43.9%
20-29 hours	15.3%	37.2%	47.5%
30-39 hours	9.4%	34.7%	55.9%
40+ hours	10.0%	39.8%	50.1%
Total	**24.6%**	**37.2%**	**38.3%**

Cognitive Orientation

Table 8: FCM Progress by Mean Number of Treatment Sessions and Treatment Time

Progress	Percent	Sessions	Time (hr)
No Progress	44.9%	10.4	6.9
Improved One Level	37.4%	12.9	7.8
Improved Multiple Levels	17.6%	16.4	9.4
TOTAL	**100%**	**12.4**	**7.7**

Table 9: Change in Functional Level from Level at Admission

Functional Level at Admission	No Progress	Improved One Level	Improved Multiple Levels
1	*	*	*
2	26.8%	41.5%	31.7%
3	45.3%	30.2%	24.5%
4	50.0%	29.6%	20.4%
5	44.7%	47.4%	7.9%
6	57.6%	42.4%	N/A
All Levels	**44.9%**	**37.4%**	**17.6%**

**Insufficient data.*

Table 10: Change in Functional Level by Amount of Treatment

Hours of Treatment	No Progress	Improved One Level	Improved Multiple Levels
<10 hours	45.4%	37.7%	16.9%
10-19 hours	*	*	*
20-29 hours	*	*	*
30-39 hours	*	*	*
40+ hours	*	*	*
Total	**44.9%**	**37.4%**	**17.6%**

**Insufficient data.*

Pragmatics

Table 11: FCM Progress by Mean Number of Treatment Sessions and Treatment Time

Progress	Percent	Sessions	Time (hr)
No Progress	35.7%	11.9	7.5
Improved One Level	41.1%	17.8	10.7
Improved Multiple Levels	23.3%	18.6	11.2
TOTAL	**100%**	**15.9**	**9.7**

Table 12: Change in Functional Level from Level at Admission

Functional Level at Admission	No Progress	Improved One Level	Improved Multiple Levels
1	25.8%	45.2%	29.0%
2	31.5%	44.4%	24.1%
3	31.9%	42.6%	25.5%
4	39.3%	38.1%	22.6%
5	48.3%	34.8%	16.9%
6	70.4%	29.6%	N/A
All Levels	**35.7%**	**41.1%**	**23.3%**

Table 13: Change in Functional Level by Amount of Treatment

Hours of Treatment	No Progress	Improved One Level	Improved Multiple Levels
<10 hours	40.7%	38.2%	21.2%
10-19 hours	25.8%	47.0%	27.3%
20-29 hours	27.8%	48.6%	23.6%
30-39 hours	23.8%	45.2%	31.0%
40+ hours	14.8%	48.1%	37.0%
Total	**35.7%**	**41.1%**	**23.3%**

Spoken Language Comprehension

Table 14: FCM Progress by Mean Number of Treatment Sessions and Treatment Time

Progress	Percent	Sessions	Time (hr)
No Progress	32.2%	11.3	7.0
Improved One Level	39.4%	15.7	10.0
Improved Multiple Levels	28.4%	23.1	13.3
TOTAL	**100%**	**16.4**	**9.9**

Table 15: Change in Functional Level from Level at Admission

Functional Level at Admission	No Progress	Improved One Level	Improved Multiple Levels
1	29.8%	31.5%	38.7%
2	26.2%	33.4%	40.4%
3	25.8%	40.4%	33.8%
4	34.7%	40.5%	24.8%
5	35.8%	44.3%	19.9%
6	57.0%	43.0%	N/A
All Levels	**32.2%**	**39.4%**	**28.4%**

Table 16: Change in Functional Level by Amount of Treatment

Hours of Treatment	No Progress	Improved One Level	Improved Multiple Levels
<10 hours	38.5%	38.9%	22.6%
10-19 hours	20.1%	42.8%	37.1%
20-29 hours	21.2%	41.0%	37.8%
30-39 hours	20.2%	24.7%	55.1%
40+ hours	17.9%	34.5%	47.6%
Total	**32.2%**	**39.4%**	**28.4%**

Spoken Language Production

Table 17: FCM Progress by Mean Number of Treatment Sessions and Treatment Time

Progress	Percent	Sessions	Time (hr)
No Progress	29.7%	12.2	8.1
Improved One Level	39.2%	18.7	12.6
Improved Multiple Levels	31.1%	25.4	16.5
TOTAL	**100%**	**18.9**	**12.5**

Table 18: Change in Functional Level from Level at Admission

Functional Level at Admission	No Progress	Improved One Level	Improved Multiple Levels
1	29.4%	31.6%	39.0%
2	28.6%	36.2%	35.2%
3	24.1%	38.3%	37.6%
4	29.9%	41.6%	28.5%
5	39.5%	43.6%	16.9%
6	52.9%	47.1%	N/A
All Levels	**29.7%**	**39.2%**	**31.1%**

Table 19: Change in Functional Level by Amount of Treatment

Hours of Treatment	No Progress	Improved One Level	Improved Multiple Levels
<10 hours	39.0%	37.1%	23.9%
10-19 hours	19.0%	44.1%	36.9%
20-29 hours	16.4%	42.5%	41.0%
30-39 hours	13.8%	39.6%	46.5%
40+ hours	15.0%	30.1%	54.9%
Total	**29.7%**	**39.2%**	**31.1%**

Swallowing

Table 20: FCM Progress by Mean Number of Treatment Sessions and Treatment Time

Progress	Percent	Sessions	Time (hr)
No Progress	49.6%	14.2	11.0
Improved One Level	36.7%	16.3	12.3
Improved Multiple Levels	13.8%	17.8	12.2
TOTAL	**100%**	**15.5**	**11.6**

Table 21: Change in Functional Level from Level at Admission

Functional Level at Admission	No Progress	Improved One Level	Improved Multiple Levels
1	*	*	*
2	*	*	*
3	53.8%	19.2%	26.9%
4	54.0%	22.0%	24.0%
5	34.0%	47.2%	18.9%
6	52.7%	47.3%	N/A
All Levels	**49.6%**	**36.7%**	**13.8%**

**Insufficient data.*

Table 22: Change in Functional Level by Amount of Treatment

Hours of Treatment	No Progress	Improved One Level	Improved Multiple Levels
<10 hours	52.3%	36.9%	10.7%
10-19 hours	41.8%	38.2%	20.0%
20-29 hours	*	*	*
30-39 hours	*	*	*
40+ hours	*	*	*
Total	**49.6%**	**36.7%**	**13.8%**

**Insufficient data.*

APPENDIX

- Introduction to Functional Communication Measures (FCMs)
- Sample Pre-Kindergarten FCM
- Definitions Used in NOMS Data Collection
    - Treatment Setting
    - Associated Medical Factors
    - Primary Reason for Discharge
    - Primary Funding Source
    - Predominant Service Delivery

FUNCTIONAL COMMUNICATION MEASURES (FCM)

The Functional Communication Measures (FCMs) are a series of seven-point rating scales, ranging from least functional (Level 1) to most functional (Level 7), that have been developed to describe the different aspects of a child's functional communication or swallowing abilities. The following six FCMs are used with the Pre-Kindergarten component of NOMS:

- Articulation/Intelligibility
- Cognitive Orientation
- Pragmatics
- Spoken Language Comprehension
- Spoken Language Production
- Swallowing

These FCMs were designed to describe functional abilities over time from admission to discharge from the speech-language treatment program or over the course of an academic year. They are not dependent upon administration of any particular formal or informal assessments, but are informal clinical observations of the child's communication abilities. The FCMs are not intended to reflect the entire evaluation or to describe all aspects of a child's communication abilities. You may notice that FCMs have not been developed for all goals that might be addressed as part of a child's treatment plan/IEP. For example, we intentionally did not develop an FCM for oral motor functioning. While this may be an important aspect of any treatment program, improved oral motor functioning in isolation is not by itself a *functional outcome*. Rather, it is required to achieve communication and related behaviors such as swallowing, speech intelligibility, etc. Moreover, there are some FCMs that remain under development and will be included in future revisions (e.g., production of nonspoken language, augmentative assistive communication, voice, and fluency).

FCMs are only scored if they specifically relate to the child's individual treatment program/IEP. For example, a child may have decreased spoken language comprehension skills; however, these skills are functional and consistent with his/her developmental functioning and are not being addressed as part of the current treatment plan/IEP. Therefore, the Spoken Language Comprehension FCM would not be scored.

Each level of the FCMs contains references to the intensity and frequency of the cueing and use of compensatory strategies that are required to assist the child in becoming functional and independent in various communication situations and activities.

SAMPLE PRE-KINDERGARTEN FCM

Spoken Language Comprehension

LEVEL 1: Child understands a limited number of common object and action labels and simple directions only in highly structured, repetitive daily routines, with consistent maximal cueing.

LEVEL 2: Child understands a limited number of common objects and action labels and simple directions only in highly structured repetitive daily routines.

LEVEL 3: Child understands a limited number of common objects and action labels and simple directions in novel situations.

LEVEL 4: Child understands simple word combinations/sentences. Child usually requires rephrasing and repetition to ensure understanding of brief conversations.

LEVEL 5: Child understands brief conversations. Child usually requires rephrasing and repetition to ensure understanding of the type and length of sentence typically understood by chronologically age-matched peers.

LEVEL 6: Child understands communications of the type and length typically understood by chronologically age-matched peers but occasionally requires rephrasing and repetition. Child's ability to participate in adult-child, peer, and group activities is sometimes limited by language comprehension.

LEVEL 7: Child's ability to participate in adult-child, peer, and group activities is not limited by language comprehension. Repetition and rephrasing are rarely required.

DEFINITIONS USED IN NOMS DATA COLLECTION

Treatment Setting

Outpatient Services	Any outpatient services provided in a hospital, community-based clinic, private practice, etc.
Acute Inpatient Program	Inpatient care provided in an acute medical/surgical facility
Inpatient Rehabilitation Program	Inpatient care provided in a freestanding rehabilitation hospital or care provided in a separate and distinct hospital-based program/unit within an acute care hospital that is designed for interdisciplinary rehabilitation of a disabling condition
Home-Based	Speech and language services provided in the home
Preschool/Day Care	Any public or private day care, preschool, nursery school, or head start program
Special Education Program	Any private or public special education program designed for prekindergarten aged children with special needs
Residential	Specialty residential program for children with severe and/or multiple disabilities
Other	Any other setting not listed above

Associated Medical Factors

Anoxic Brain Damage	
Attention Deficit Disorder or Attention Deficit Disorder With Hyperactivity	
Autism and Related Disorders	Including: pervasive developmental disorder (PDD), Asperger's or Rett syndrome, and PDD-NOS (pervasive developmental disorder not otherwise specified)
Brain Tumor	
Cerebrovascular Issues	Intracranial hemorrhage (ICH), intraventricular hemorrhage (IVH), CVA, etc.
Craniofacial Factors	Any craniofacial condition regardless of the type or severity, including but not limited to cleft lip, cleft palate, and velopharyngeal incompetence
Developmental Delay	
Head Injury	Including but not limited to traumatic brain injury, closed head injury, and concussion
Hearing Loss: Conductive	
Hearing Loss: Sensorineural	
Mental Retardation	
Neuromotor Disorders	Including but not limited to cerebral palsy, muscular dystrophy, and muscle hypotonia
Seizure Disorders	
Syndrome	Any syndrome other than Asperger's or Rett syndrome
Other	Any other medical factor not listed above
None	Communication/swallowing disorder with no obvious or documented associated medical factor

Primary Reason for Discharge

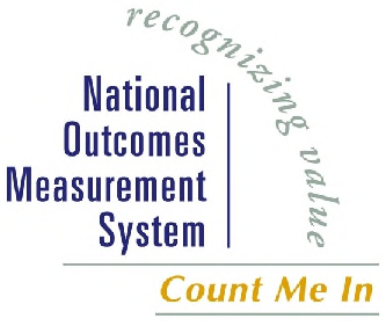
Treatment Goals Met	The communication/swallowing disorder has been habilitated/rehabilitated to within normal/functional limits.
Child Discharged From Program/Facility	The child is discharged to another setting or level of care (e.g.,rehab to outpatient, etc.), prior to the completion of the speech language treatment program, for any of the following reasons: AMA (against medical advice) discharge; child transitions to kindergarten; overall level of functioning in areas other than speech and language requires child to be treated in another level of care; child moves; or child is discharged according to the program's discharge criteria. Use this category to indicate that there has been a change in provider if your contract to provide contract-managed services to a facility is discontinued, and the child will receive services from another provider.
Annual IEP/Treatment Plan Review	The child discharged due to annual treatment plan/IEP review.
Progress Plateaued	All goals have not been met, but the child is no longer making progress and does not appear to benefit from continued treatment at this time.
Funding Stopped and Caregiver Unable to Pay for Continued Treatment	Insurance and/or educational services would not authorize additional funding, and the caregiver was unable to pay for continued services.
Illness/Medical Complications /Contraindications	Extended illness precluded the continuation of the treatment program. Change in the medical condition and/or a new diagnosis of a communication disorder is made that has a significant impact on the type of speech-language intervention provided. This usually requires a change in the existing treatment plan/IEP.
Child Refused to Cooperate	The child's behavior prohibited involvement in the treatment program.
Caregiver Refused Treatment	The caregiver was cooperative but did not feel that treatment was warranted and either refused to accept the treatment recommendations or requested that treatment be discontinued.
Caregiver's Lack of Compliance With the Treatment Program	The caregiver would not comply with the treatment program (e.g., cancellation of appointments, no follow-through with home program, etc.).
Death	

Primary Funding Source

Commercial Fee-for-Service Plans	The plan pays per visit or per procedure usually after a deductible has been met (e.g., Aetna, Blue/Cross/Blue Shield, etc.).
Managed Care Plans	Providers are specified by the health plan (e.g., HMO, PPO, IPA, etc.).
Medicaid (Fee-for-Service)	Services are provided by *any* Medicaid-approved provider.
Medicaid (Managed Care)	Services must be provided by provider(s) specified by the health plan(s) that have entered into a contract or subcontract with the state Medicaid agency.
Children's Health Insurance Program	A state-based program that either acts as a Medicaid expansion or separate program to provide coverage to low income or uninsured children.
100% Self-Pay	The caregiver or responsible party pays the full amount. No known insurance coverage was provided.
Organization-Sponsored Assistance	Reimbursement is provided by an outside organization other than health insurance (e.g., Scottish Rite, etc.).
IDEA	This federal law requires free, appropriate public education to school-age students with disabilities, from 3 years of age to high school graduation. Services are provided through an Individualized Education Program (IEP).
Rehabilitation Act (Section 504)	The child is served in a program receiving federal funding, including public schools, whose SLP services are provided under Section 504 of the Rehabilitation Act. Children in public schools may receive related services under Section 504 even if they are not provided with any special education. Services are provided through a 504 plan instead of an Individualized Education Program.
Other Educational Funding	Any educational funding source, other than IDEA.

Predominant Service Delivery Model

Individual Treatment	The speech-language pathologist provides direct treatment to a child on a one-on-one basis. Include caregiver/teacher training provided in conjunction with the treatment sessions. Co-treatment is simultaneously provided to one child by two disciplines (e.g., OT and SLP).
Group Treatment	The speech-language pathologist provides direct treatment to two or more children in a small group. Include caregiver/teacher training provided in conjunction with the group treatment sessions.
Training Only	The speech-language pathologist provides consultation or training to the caregiver, teacher, or other professional on the child's behalf. The child is not present during the session.
Self-Contained Classroom	The speech-language pathologist is the classroom teacher responsible for providing the academic instruction and intensive speech and language remediation.
Classroom-Based	The speech-language pathologist provides direct services to the child within the classroom or other natural environments. The speech language pathologist and teacher may provide team teaching. This model may be referred to additionally as integrated services or as curriculum-based, interdisciplinary, or inclusive programming.
Collaborative Consultation	The speech-language pathologist—in conjunction with any one or more of the following: audiologist, teacher, rehabilitation team member, or caregiver— voluntarily work together to facilitate a child's communication and learning. *Regularly* scheduled or periodic planning time is provided throughout the duration of service delivery.



For more information about the National Outcomes Measurement System (NOMS), please visit our web site at http://www.asha.org/NOMS.