Communication Development Monitoring for Infants and Toddlers with Hearing Loss: CDM TUTORIAL

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Background

- Hearing loss prevents full access to communication and delays the normal development of speech and language abilities
- Early intervention services assist parents and caregivers in
 - developing an awareness of the communication access barrier that hearing loss poses
 - facilitating their development of effective parentchild communication strategies
 - supporting their use of effective communication practices in the natural environments of the child
- Hearing Specialists have the expertise to help families and caregivers help their children access communication and learn language

Why do we monitor communication development?

The developmental goal for early intervention of young children with hearing loss is one month of language development for every one month of effective communication via early intervention.

The first three years of life (especially the first 6 months) are pivotal to the development of a typical foundation of linguistic skills.

It is important to monitor the communication development of children with hearing loss as a means to gauge the effectiveness of their early intervention program.

Purposes of CDM

- The primary purpose of communication development monitoring is to inform the parents of their child's language and auditory skill development progress over time and provide them with the opportunity to consider if any changes are needed to the child's current level of communication access.
- Secondly, aggregate data on language and auditory skill development of children with hearing loss who have participated in the SHINE component of local early intervention programs will identify possible changes that may be needed in how or what SHINE services are provided to families on a regional or state level.

What information is collected?

http://www.cms-kids.com/SHINE/shineCommunicationDev.htm

- Demographic, hearing loss, and service related information
- SHINE Vocabulary Checklist only vocabulary production collected
- SKI-HI Language Development Scale receptive and expressive language levels
- Auditory Skills Checklist: acquired, inconsistent, and emerging skills
- Parent Interview Progress Report not at baseline
- Communication Plan summary
 – only once, after
 Communication Plan is completed

SHINE Vocabulary Checklist

early steps

SHINE Vocabulary Checklist: Level I (Infant Form)*

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Child's Name:	Child's Birthdate:

PART ONE: VOCABULARY CHECKLIST

Children understand many more words than they use. We are particularly interested in the words your child SAYS, CUES or SIGNS. Please mark the words you have heard or seen your child use. If your child uses a different pronunciation of a word (or baby signs or cues), mark it anyway.

	Under- stands signs/cues	Under- stands words	Under- stands and signs/cues	Under- stands and says		Under- stands signs/cues		Under- stands and signs/cues	Under- stands and says		Under- stands signs/cues	Under- stands words	Under- stands and signs/cues	Under- stands and says
choo choo	0	0	0	0	chair	0	0	0	0	wait	0	0	0	0
mosom	0	0	0	0	couch	0	0	0	0	break	0	0	0	0
ouch	0	0	0	0	kitchen.	0	0	0	0	feed	0	0	0	0
uh oh	0	0	0	0	table	0	0	0	0	finish	0	0	0	0
bird	0	0	0	0	television	0	0	0	0	help	0	0	0	0
dog	0	0	0	0	blanket	0	0	0	0	jump	0	0	0	0
duck	0	0	0	0	bottle	0	0	0	0	kick	0	0	0	0
kitty	0	0	0	0	cup	0	0	0	0	kiss	0	0	0	0

Parent Interview Progress Report



Parent Interview Progress Report

Date:

Child:

Areas to consider that can affect the rate that	Almost		Some-	Fourth!
communication skills develop:	Always	Often	times	Neven/NA
AUDITORY COMMUNICATION				
 If the child has amplification, are the hearing aids (or cochlear 				
implant) worn all waking hours?				
2. Are the hearing aids checked at least once every day to be sure				
that they are working properly?				
3. Does the child receive a hearing evaluation every 3-6 months				
(hearing ability can change!)?				
4. Are the all adults in the child's life aware of the size of the				
child's listening bubble (hearing range) in different listening		1		
environments (quiet, noise, close, far) and talk in this distance?				
VISUAL COMMUNICATION				
5. If the child is signing (with or without meaningful auditory input),				
are the parents and caregivers learning enough words in sign to		1		
keep up with the child's areas of interest?				
6. Are signs being used whenever the child is in the room? (much			T	
language is picked up incidentally, or when communication is		1		
occurring around a child)				
7. Do brothers, sisters, and playmates sign with the child and each				
other when the child is present?				
8. Does the family get together with other families who sign with				
their children, or do they regularly Interact with Deaf adults?				
COMMUNICATION STRATEGIES				
9. Do the parents and all caregivers communicate effectively (sign				
and/or speech/listening) during ALL of the child's typical everyday				
routines and activities (diapering, choosing food, etc.)?				
10. Are the parents satisfied with how the child is developing				
communication skills compared to skills of children the same age?		1	1	1

Inquires about practices related to providing communication access.

If a child is not progressing at the desired rate it may be due to family skills or consistency in providing access to language and/or sound.

Relates to information on the Communication Plan

Each item recorded on the CDM report

SKI-HI Language Development Scale (LDS)

protocols available to hearing specialists in Florida at no cost from the Early Steps
Coordinator of Hearing Services

SKI-HI Language Development Scale

Unit	1
Receptive	Expressive 1. Cries with both a strong and a weak voice 2. Makes non-crying noises (such as grunts hiccups, throaty sounds, sucking sounds) 3. Makes open mouth sounds (such as eh, oo, oh) in a musical, coo-like way 4. Cries for hunger, pain, and discomfort 5. Makes happy noises: gurgles, chuckles
Unit	_
Receptive 1. Watches speaker's face or signer's face and hands 2. Knows will be fed or lifted by the sights and/or sounds of someone coming towards him/her	Makes a sustained coo (such as o-o-o-o) Produces two different syllables (such as alr-goo, still sounds coo-like) 3. Attempts a few guttural sounds (such as k a not)

- 3. Recognizes parent or caregiver by his/her noises and appearance
- Aware of many sights and/or sounds in the environment
- ____ 5. Aware of strange situations
- 6. Upset by angry faces or voices
- Tops crying most of the time when someone communicates to him/her using words or signs

- 4. Vocalizes to social stimuli (someone lifting, holding, talking to child)
- Smiles when smiled at
- ___ 6. Laughs aloud
- 7. Makes some loud and soft sounds other than crying (gurgling sounds, sucking sounds, etc.)
- 8. Babbles by repeating series of same sounds (e.g., ga, ga, ga)

Auditory Skills Checklist



AUDITORY SKILLS CHECKLIST

Child's Name	Birth Date:	Person Reviewing Skills	s:
Dates Auditory Skills Reviewed:			
Directions: Skills should be checked-off only if the child responsible. Although these skills are listed in a relatively typical of development in previously acquired skills while learning skills a of progression can depend on cognitive ability, the ability to attempt auditory skill development, check off changes in the child percent of the time the child is seen to respond are approximate with the child. In subsequent reviews of the child's auditory skill begin to respond or demonstrate skill).	order of development at more advanced leve tend for periods of tim hild's ability to respond tions only based on th	t, it is common for children to increa lels. Work on skills from one or two l ne, vocabulary size, ability to point, e d or perform each skill that is being the observation of the parents and of	ise in the depth of their levels at a time. A child's rate etcetera. Every time you worked on. Estimates of others who regularly interact

NOT PRESENT (0-10%) E = EMERGING (11 – 35%) I = INCONSISTENT (36-79%) A = ACQUIRED (80-100%)

₹	_ ✓	Ą	AUDITORY SKILL	EXAMPLE	APPROX DATE ACQUIRED
			LEVEL ONE		
			Child wears hearing aids or implant all waking hours	Hearing aids worn at all times except for naps and bathing.	
			Awareness to sound: Child nonverbally or verbally indicates the presence or absence of sound.	Child's eyes widen when she hears her mother's voice.	
			Attention to sound: Child listens to what he hears for at least a few seconds or longer.	Child pauses to listen to father's voice.	
			Searching for the source of sound: Child looks around, but does not necessarily find sound source.	Child glances or moves in search of the sound.	
			Auditory localization: Child turns to the source of sound.	Child turns to Mom when she calls her.	
			LEVEL TWO		
			Auditory feedback: Child uses what he hears of his own voice to modify his speech, so that it more closely matches a speech model.	Parent says ee-oh-ee and child imitates. Parent says woof-woof and child imitates	
_	_				

Why has a set CDM protocol been defined?

- Federal interest in improved outcomes for young children with hearing loss
- To allow systematic data driven decision making for what activities are needed for a child to become a successful communicator, as typical as age peers as possible
- Consistency across state to address federal and state accountability needs

Federal Pressure to Improve Outcomes of Children with Hearing Loss

The Government Performance and Results Act (GPRA) of 1993 (Public Law 103-62) requires that Federal programs establish measurable goals approved by the US Office of Management and Budget (OMB). The GPRA Measures for the EHDI program are the number of infants:

- screened prior to discharge
- with confirmed hearing loss by 3 months of age
- enrolled in an El program by 6 months
- with confirmed or suspected hearing loss referred to an ongoing source of comprehensive healthcare (i.e. medical home)
- The number of children with non-syndromic hearing loss who have developmentally appropriate language and communication skills at school entry

JCIH (Joint Committee on Infant Hearing 2007) Quality Indicators: setting the stage

Quality Indicators for Early Intervention

"For infants with confirmed hearing loss who qualify for Part C, the percentage for whom parents have signed an IFSP before 6 months of age (for children with acquired or later identified hearing loss, the percentage for whom parents have signed an IFSP within 45 days of the diagnosis). Recommended benchmark is 90%."

Baseline 2006 Florida EHDI data:

- Referrals prior to 5 months = 54%
- Referrals prior to 3 months = 43%
- Referrals prior to 6 months = 60% (includes 0-3 months)
- Referrals prior to 12 months = 75%
- Referrals age 1-2 years = 14.5%
- Referrals age 2-3 years = 8.5%

Quality Indicators (JCIH 2007)

Quality Indicators for Early Intervention

"Percent of infants with confirmed hearing loss who receive the first developmental assessment using standardized assessment protocols (not criterion reference checklists) for language, speech and non-verbal cognitive development by 12 months of age (Recommended benchmark is 90%)"

· Unknown.

Communication Development Monitoring must be submitted routinely for children in Early Steps with known hearing loss to evaluate this quality indicator statewide.

More from JCIH 2007

"Spoken and/or sign language development should be commensurate with the child's age and cognitive abilities and should include acquisition of phonologic (for spoken language), visual/spatial/motor (for signed language), morphologic, semantic, syntactic, and pragmatic skills."

This is a primary reason for performing CDM at 6 month intervals

More from JCIH 2007

"Early-intervention programs must assess the language, cognitive skills, auditory skills, speech, and social-emotional development of all children with hearing loss at 6 month intervals during the first 3 years of life, using assessment tools standardized on children with normal hearing."

The foundation for choosing the norm referenced SHINE Vocabulary Checklist based on the MacArthur Communication Developmental Inventories as part of the CDM protocol

Final information from JCIH 2007

"While criterion referenced checklists may provide valuable information for establishing intervention strategies and goals, these assessment tools alone are not sufficient for parents and intervention providers to determine whether a child's developmental progress is comparable to hearing peers."

This is why the Language Development Scale and Auditory Skills Checklist if used alone are not sufficient for communication development monitoring

Other background information to "set the stage" for meeting intervention needs

- Recent hearing aids and cochlear implants do a better job of providing access to the speech signal than ever before
- Approximately 70% or more of families begin early intervention with a firm mindset towards speech and listening
- In Colorado where parents can choose any single or combination of communication methods 50% change methodology at least once before age 3
- Increasing numbers of deaf children are receiving cochlear implant(s)

CDM Reporting

- The report form is designed so that only a minimal amount of information is repeated at each periodic review
- If you do not know all of the information at baseline leave it blank. The following slides will indicate CRITICAL fields to complete at baseline
- At periodic review most sections allow you to check if there has been no change

Using the CDM tool

The following slides include information and screen shots of the Communication Development Monitoring Report form to assist Hearing Specialists in understanding how to complete the CDM report form appropriately.

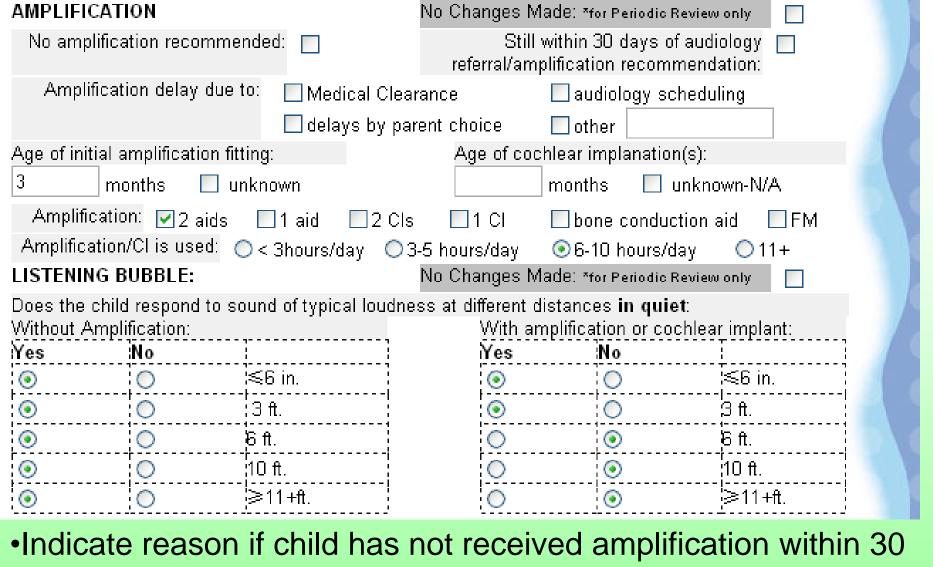
SHINE Communication Development Monitoring (CDM) Results

Baseline Communication Development Monitoring	CDM for Periodic Review or Annual Evaluation 🔘
Person filling Joey out CDM:	Person filling out CDM's Karen_Anderson@doh.
Date CDN	И Completed: 9/21/07 ×mm/dd/уу
General Information About Child Child's SHINE ID number: 999	Month/Year of birth: 10 20 06
Early Steps Region: Bay Area	County: Hillsborough
At what age did intervention services specifi loss begin t	c to hearing (i.e., SHINE):

- •Indicate Baseline or Review: a CDM needs to be submitted a minimum of every 6 months.
- •You MUST use a SHINE ID# to avoid sharing non-child specific information in an unsecured manner. Obtain the SHINE ID# from the Early Steps Coordinator of Hearing Services.
- Specifying the age services began is CRITICAL

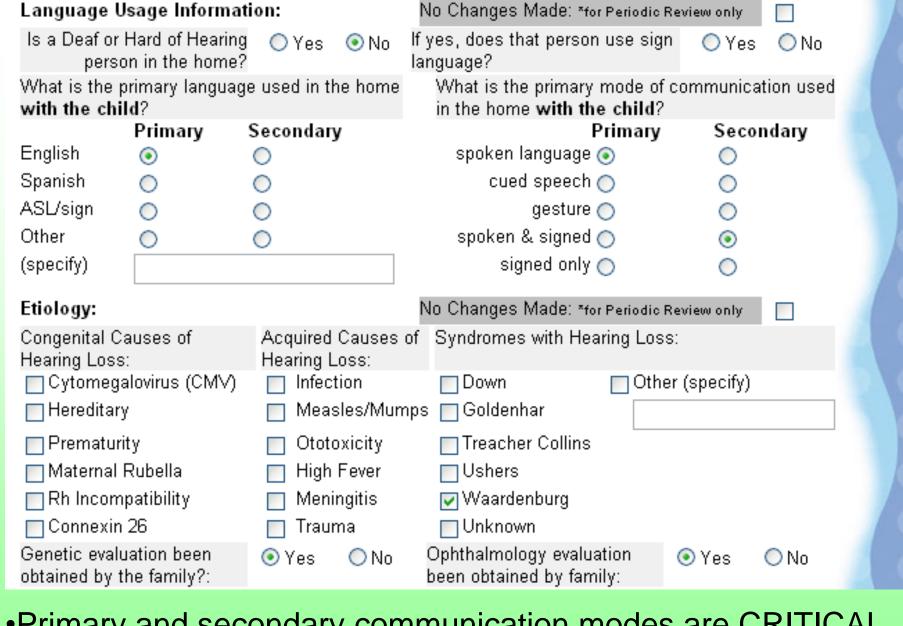
Information About Child's Hearing Loss	
Was the child referred from newborn hearing $\odot \gamma$	es 🔘 No 🔘 Don't Know
screening?	
Age of hearing loss diagnosis 2	📶 months
The child's hearing loss has been checked 💿 3	Months 06 months 0 Longer than 6 months
for progression in the last (choose one):	
DEGREE OF HEARING LOSS	o Changes Made: *for Periodic Review only 📉 🔃
(average hearing level for 500-2000 Hz) based on th	e child's most current evaluation on record
LEFT EAR:	RIGHT EAR:
○ (0-15dB HL) ○ (16-25dB) ○ (26-40dB)	○ (0-15dB HL) ○ (16-25dB) ○ (26-40dB)
. ((41-55dB) . ((56-70dB) . ((71-90dB) . ((71-90dB) . ((((((((((((((((((!○ (41-55dB) !○ (56-70dB) !○ (71-90dB) !
○ (90+ dB) O to be determined	○ (90+ dB) ○ to be determined
auditory dyssynchrony	auditory dyssynchrony

- Ask the parents if they know about newborn screen referral
- Age of hearing loss diagnosis is a CRITICAL field
- •It is standard of care for children with hearing loss to have hearing rechecked every 3 months under age 2 and then every 6 months to age 5. Exception would be if a child has no useable hearing. The child's service coordinator should have the audiology report or be able to obtain it quarterly.



- days of hearing loss diagnosis
- Age of initial amplification fitting is a CRITICAL field
- Refer to the ELF for information on the listening bubble at:

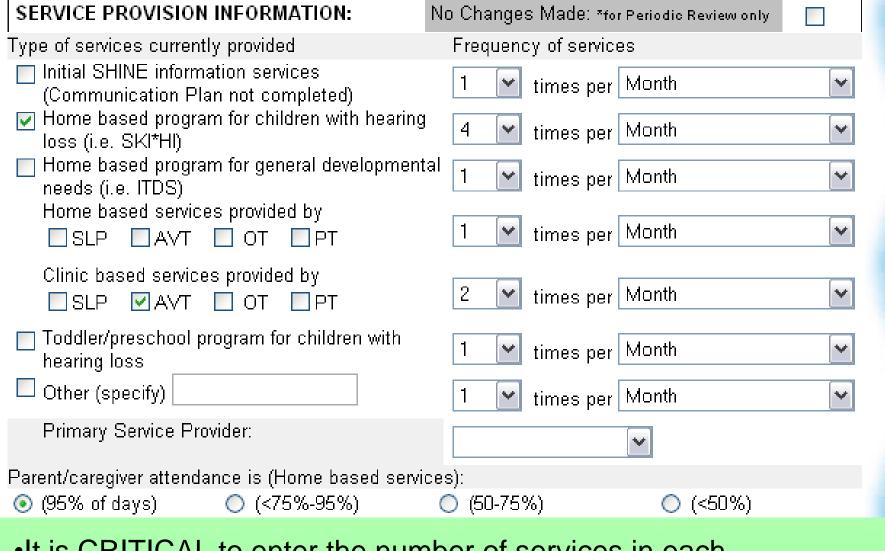
http://www.cms-kids.com/SHINE/ELF_Questionnaire.pdf



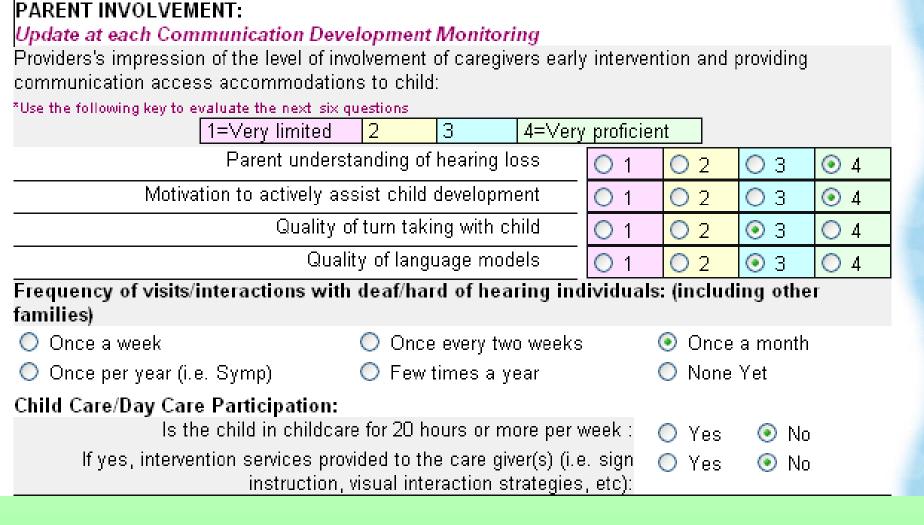
- Primary and secondary communication modes are CRITICAL
- Genetic and ophthalmologic evals are highly recommended for this population by the American Academy of Pediatrics

	, ,
ADDITIONAL DISABILITIES:	No Changes Made: *for Periodic Review only
Please check any identified or suspected disabilities:	Your estimation of the effect of the additional disability(ies) on developmental progress:
── Visual Impairment	none or minimal
Cognitive Delay	somewhat
Neurological Impairment	o significant
Physical Impairment	overy significant
Other suspected conditions (specify)	

- Do not complete this section if the child only has a hearing loss
- •It is important to indicate if there are known disabilities in addition to hearing loss. This does not include communication delay that is likely associated with the hearing loss.
- •It is CRITICAL to indicate other disabilities and YOUR estimation of the impact on developmental progress. It is understood that your estimation may change over time.



- •It is CRITICAL to enter the number of services in each setting that are provided (this # should be consistent with what is on Form G of the IFSP
- If there are multiple therapies (i.e., speech and OT) add the total number of sessions together per category



- •Parent involvement is very important. Estimate the proficiency of the people who spend the most time with the child your estimation can/will change over time
- Parent-to-parent support encounters are strongly recommended
- Identify child care and services provided therein

Communication Development Monitoring Protocol Results	
SHINE Vocabulary Checklist	
Gender: Male Child's age in months: 12	7
Female Age in Months Developmental Age	
Select level of SHINE Vocabulary Checklist conducted: MUST MATCH DEVELOPMENTAL AGE	<u> </u>
Level I: 8 to 13 months Level I: 14 to 18 months	
O Level II: 19 to 24 months O Level II: 25 months to 30 months	
O Level III: 31 months to 36 months	
Number of verbal words: 2 Number of signed/cued words: 1	IPA
Number of words both said and signed/cued: Total raw score for production: (all words expressed regardless of method):	
This is equivalent to 45th percentile rank.	
The 50th percentile rank for 11 months	
Language Development Scale (LDS)	
Child has attained minimum of 50% of skills in unit:	
Receptive Highest unit attained: 6	
Auditory Skills Checklist	
Total number of:	
Skills Acquired: 3 Skills Inconsistent: 2 Skills Emerging: 1	

- •The child's age is CRITICAL and check whether it is the chronological or developmental age
- •If you do not enter the age you will NOT be able to submit
- •The test Level must match the age you entered CRITICAL
- Enter all 4 boxes as appropriate re: # words said/signed
- Refer to website for information on administration of tests

Parent Interview Progress Report Areas to consider that can affect the rate that communication skills develop: (not required if baseline or if child has made one month communication progress/one month service) *Use the following key to evaluate the next-six questions S=Sometimes R=Rarely/Never A=Almost Alwaγs O=Often NA AUDITORY COMMUNICATION If the child has amplification, are the hearing aids (or NA cochlear implant) worn all waking hours? Are the hearing aids checked at least once every day to S (0) 0 NA be sure that they are working properly? Does the child receive a hearing evaluation every 3-6. S 0 NA months (hearing ability can change!)? 4. Are the all adults in the child's life aware of the size of the A 0 S NA child's listening bubble (hearing range) in different listening environments (quiet, noise, close, far) and talk in this

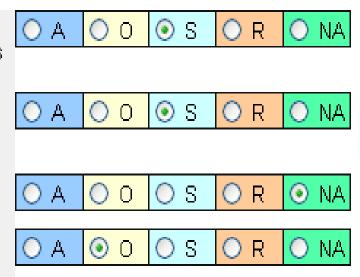
 This information is the result of your observations and discussions with the parents/caregivers

distance?

•It is NOT necessary nor recommended to complete the Parent Interview Progress Report at baseline or if the child has made 1 month of progress per 1 month of intervention

VISUAL COMMUNICATION

- 5. If the child is signing (with or without meaningful auditory input), are the parents and caregivers learning enough words in sign to keep up with the child's areas of interest?
- 6. Are signs being used whenever the child is in the room? (much language is picked up incidentally, or when communication is occurring around a child)
- 7. Do brothers, sisters, and playmates sign with the child and each other when the child is present?
- 8. Does the family get together with other families who sign with their children, or do they regularly interact with Deaf adults?



- •This information correlates with reasons why a child may not be making communication skill progress at a typical rate
- •The results of the Parent Interview Progress Report can aid in decision making about what is needed to increase the child's language skills
- •Each question has been correlated with impacting positive outcomes for children

OMMUNICATION STRATEGIES 9. Do the parents and all caregivers communicate effectively (sign and/or speech/listening) during ALL of the child's typical everyday routines and activities (diapering, choosing food, etc.) 10. Are the parents satisfied with how the child is developing communication skills compared to skills of children the same age? ■ A O O S O R O NA

- •These two summary questions are critical to answer.
- •Number 9 is your estimation of the overall effectiveness of the parent's/caregiver's communication with the child, preferably from discussion with them regarding their comfort and ability levels
- Number 10 is an indication of parent satisfaction with the child's progress

What is the Communication Plan? Why is it done?

 The Communication Plan is completed with the parent at the point at which they have decided which communication 'path' to start down.

The Communication Plan documents that:

- · All communication options were presented
- Different communication option providers were presented
- It is the parent making the choice
- The parents commitment to use amplification
- these decisions will be reconsidered at least twice a year in conjunction with CDM



EVERY CHILD WITH HEARING LOSS NEEDS FULL ACCESS TO COMMUNICATION TO DEVELOP LANGUAGE OPTIMALLY

Step 1: With my Service Coordinator and Family Support Team we discussed: √ YES NO Language development opportunities Communication Features and Modes	Step 4: Opportunities our child will have to communicate with other children or adults who are deaf or hard of hearing include (i.e., other families with children who have hearing loss, deaf role models, adults or children that sign, cue, wear hearing aids, or have cochlear implants):	Monitor Communication Development at least every 6 months by parent(s) completing the
		SHINE Vocabulary
Intervention Program Options		Checklists
Step 2: We have identified the communication features we want to use with our child (circle): Speech, maximal use of hearing, English, gestures, fingerspelling, speech reading, conceptual sign (ASL), cued speech, manual sign (I.e., Signed Exact English), vibrotactile, augmentative communication	Step 5: The natural environments, every- day routines, activities, or places that our child will be around others that use the chosen communication features or mode (and wear amplification if desired) include:	Proposed Communication Development Review Dates (month/year) 1 2 3 4

Step 3: We discussed using amplification with		5
our SHINE provider, hearing specialist and our		Review the
audiologist . We realize that our child cannot		Communication
learn spoken language or speech to the best of		Plan at every
his/her ability unless as much speech as possi-	Chara O. The Areder of the Control o	communication
ble can be heard everyday by using amplifica-	Step 6: The trained professionals who will	development
tion for all waking hours:. Check all that apply.	support our child and family are:	monitoring and
		consider changing as needed if progress
Hearing aid(s) Cochlear Implant(s)		in language
Used all waking hours 6 hours per day		development is less
hours per day (please complete)		than expected
We will use amplification because we want		
our child to speak		
Or we want our child to speak and sign	PARENT SIGNATURE(S):	Adapted in 2003 from the Colorado
No amplification, we want our child to sign		Communication
		Plan for Deaf and Hard of Hearing
Other comments:		Students

Summary of completed Communication Plan:		
Number of times you met or spoke by telephone with the child's family to provide SHINE initial service information, including the day the Communication Plan was completed:	1	
Check all choices parent indicated below: Speech use of hearing English gestures fingerspelling ASL cued speech manually coded English vibrotactile augumentative communication		
 hearing aid(s) used hours per day or all waking hours cochlear implant(s) used hours per day or all waking hours we want our child to speak we want our child to speak and sign 		
we want our child to sign		

- •The summary of the completed Communication Plan is only submitted ONE time.
- It includes the length of time that SHINE initial information services were provided
- •This information verifies the starting point of parent communication choice. Information on hearing aid use and communication choices will subsequently be updated during periodic CDM

The family will receive Hearing Specialist services from (choose all that apply):		
same person that provided SHINE initial information will continue ongoing services with family		
a different Hearing Specialist will serve the family in the natural environment; the person who provided SHINE initial services will continue to monitor the child's communication development via the CDM procedures		
 a different Hearing Specialist will serve the family in the natural environment and will also be responsible for monitoring the child's communication development via the CDM procedures aural habilitation and/or speech services outside of Early Steps (i.e. AVT): 		
Who?		
no Hearing Specialist services will be provided because		

- These last questions identify who will be responsible for submitting CDM information for the child
- Other service providers will be identified
- •If there are no Hearing Specialist services that will be provided the reason why is collected (i.e., parent choice, lack of provider, etc)

Add comments to inform the service coordinator about child's progress and needs

Information about the child's progress, status or needs: Information relevant to the IFSP review or annual IFSP can be entered here — Do NOT include child-specific information (i.e., name of child, parent, etc.)	
Enter email address of child's service coordinator here:	
Insert other email addresses as appropriate, separated by a semicolon. FSDB advisors also send to: strasselg@fsdb.k12.fl.us You MUST have parent permission to share this information.	
Print CDM Submit CDM	

Enter email address of child's service coordinator here:	
Insert other email addresses as appropriate, separated by a semicolon. FSDB advisors also send to: strasselg@fsdb.k12.fl.us You MUST have parent permission to share this information.	
Print CDM Submit CDM	

- •If you want a full copy of the CDM results you must print it before you submit the CDM
- •It is required that a summary of CDM results be sent to the child's service coordinator (parent permission NOT needed)
- •If the Hearing Specialist who provides SHINE initial services is a parent advisor hired by FSDB it is required that the results also be submitted to Gail Strassel at FSDB but parents must have consented in writing
- •Additional copies of the summary may be emailed (i.e., to the AVT) but parent consent must be in the child's file.

- •The CDM summary report only includes basic demographic and test result information.
- •All fields not completed will be filled in with dollar signs \$

CDM Procedure Data Submission by Joey

\$\$ = no information entered for this field

General Information	
Baseline or Review:	baseline
Submitted by:	Joey
Email:	Karen_Anderson@doh.state.fl.us
Completion Date:	9/21/07
Child Unique ID:	999
Birth Month:	10/06
Early Steps Region:	Bay Area
Hearing Loss checked for progression:	3_months
Degree of Hearing Loss - Left Ear:	41-55dB
Degree of Hearing Loss - Right Ear:	56-70dB
Gender:	Male
SHINE Vocabulary Checklist	
Total raw score for production:	2
Percentile Rank:	45th
50th Percentile Rank occurs at age:	11
Language Development Scale	
Highest Receptive Unit attained:	6
Highest Expressive Unit attained:	5
Auditory Skills Checklist	
Total number of skills Acquired:	3
Total number of skills Inconsistent:	2
Total number of skills Emerging:	1