

Date: December 27, 2011

Title: Partnering With Parents for Greater Treatment Outcomes in Speech-Language Pathology

Clinical Question:

P (population/problem): Among children enrolled in speech pathology services
I (intervention): does receiving speech pathology with a home program component
C (comparison): versus receiving speech pathology without a home program component
O (outcome): lead to greater progress towards speech and language goals?

Definitions:

Home Program: Written and/or verbal instructions by a speech-language pathologist given to families regarding methods of home practice to address various skills, such as practicing articulation (speech sounds), encouraging early developing language principles (modeling words, imitation, commenting, etc.), social language skills, and augmentative and alternative communication (AAC), the use of pictures or devices for individuals who have impairments using spoken language). Materials, such as worksheets, are often provided with the instructions.

Speech Therapy Goals: Goals are chosen by a speech-language pathologist. They address a child's individual deficits in speech pathology. Goals are chosen reviewing the evaluation report and on-going observation. Parental input may also be taken into consideration.

Target Population:

Inclusions: Children, birth to 18 yrs., who present with a diagnosis of a language disorder or articulation (speech sound) disorder.

Exclusions: Children with a diagnosis of voice, auditory processing, cognitive rehabilitation, swallowing, stuttering or hearing disorders.

Recommendation: *(See Table of Recommendation Strength following references)*

It is strongly recommended that speech-language pathologists train and counsel parents regarding methods of initiating a home program and clearly communicate that participation in a home program will accelerate progress towards speech and language goals (Roberts, 2011 [1a], Allen, 2011 [2a], McDuffie, 2010 [2a], Fey, 2006 [2a], Yoder, 2002 [2a], Gunther, 2010 [3a-CCT], McConachie, 2005 [3a], Pennington, 2009 [4a], Scherer, 2008 [4a], Crowe, 2004 [4a], Kashinath, 2006 [4b], Reagon, 2009 [5a]).

Note: In one study by Gunther and Hautvast, 2010 [3a-CCT], a contingency management (reward program) was used as a motivational technique for articulation home programs. "Contingency management is an operant-conditioning technique in which the consequences of a response are manipulated in order to change the frequency of that response" (Alloy, et. al., 2005). Therapy with a home program led to greater improvements on the sounds /s/ and /sh/ compared to a waiting list group. When contingency management was added to a home program, it had a positive impact on the therapy process and increased the number of times families practiced and, overall, led to greater progress towards treatment goals.

Discussion/Summary of Evidence Related to the Recommendation:

Evidence supports speech-language pathologist administered interventions can be effectively implemented by parents/caregivers (*Law 2010 [1a], Schooling, 2010 [1a]*). In these 2 systematic reviews, speech-language pathologists initially trained parents in home programs addressing individualized speech and language goals. There was no significant difference between child progress when comparing clinician administered intervention versus intervention by parents who were trained by a speech-language pathologist. *Roberts, 2011 [1a]* found no significant differences between parent and speech-language pathologist interventions on 5 separate language measures. Significant differences were found for 2 measures: receptive language treatment (understanding of language) and expressive morpho-syntax (sentence complexity, length of utterance, multiword combinations, etc.). Overall, the evidence supported that parents are capable of completing a specialized home program, outlined by their child's speech-language pathologist.

When comparing home programs to no home programs, the evidence indicated that treatment with a home therapy program led to greater progress towards speech and language goals over time, including articulation (speech sounds) and expressive and receptive and social language skills (vocabulary, length of utterances, initiating, etc.). This resulted in a high grade for the body of evidence with consistent findings (*Roberts, 2011 [1a], Allen, 2011 [2a], McDuffie, 2010 [2a], Fey, 2006 [2a], Yoder, 2002 [2a], Gunther, 2010 [3a-CCT], McConachie, 2005 [3a], Pennington, 2009 [4a], Scherer, 2008 [4a], Crowe, 2004 [4a], Kashinath, 2006 [4b], Reagon, 2009 [5a]*). Only one study looked at long-term effects and concluded that there were no significant effects on language intervention at 6 and 12 months after conclusion of the initial treatment condition (*Warren, 2008 [2a]*).

Dimensions for Judging the Strength of the Recommendation:

Reflecting on your answers to the dimensions below and given that more answers to the left of the scales indicates support for a stronger recommendation, complete one of the sentences above to judge the strength of this recommendation.

(Note that for negative recommendations, the left/right logic may be reversed for one or more dimensions.)

1. Grade of the Body of Evidence	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low
<i>Comments: Participating in a parent program increases speech and language outcomes; significant effect sizes were found in these 12 studies (Roberts, 2011 [1a], Allen, 2011 [2a], McDuffie, 2010 [2a], Fey, 2006 [2a], Yoder, 2002 [2a], Gunther, 2010 [3a-CCT], McConachie, 2005 [3a], Pennington, 2009 [4a], Scherer, 2008 [4a], Crowe, 2004 [4a], Kashinath, 2006 [4b], Reagon, 2009 [5a]). No long-term effects were found (Warren, 2008 [2a]).</i>			
2. Safety / Harm (Side Effects and Risks)	<input checked="" type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Serious
<i>Comments: Home programs are safe to initiate. These studies showed significant effect sizes and no harm to patients (Roberts, 2011 [1a], Allen, 2011 [2a], McDuffie, 2010 [2a], Fey, 2006 [2a], Yoder, 2002 [2a], Warren, 2008 [2a], Gunther, 2010 [3a-CCT], McConachie, 2005 [3a], Pennington, 2009 [4a], Scherer, 2008 [4a], Crowe, 2004 [4a], Kashinath, 2006 [4b], Reagon, 2009 [5a]).</i>			
3. Health benefit to patient	<input type="checkbox"/> Significant	<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> Minimal
<i>Comments: Patients will benefit based on the effect sizes on 12 studies (Roberts, 2011 [1a], Allen, 2011 [2a], McDuffie, 2010 [2a], Fey, 2006 [2a], Yoder, 2002 [2a], Gunther, 2010 [3a-CCT], McConachie, 2005 [3a], Pennington, 2009 [4a], Scherer, 2008 [4a], Crowe, 2004 [4a], Kashinath, 2006 [4b], Reagon, 2009 [5a]). In Roberts, 2011 [1a], they reported that "The majority of interventions were fewer than 26 hours, which is equivalent to 1 hour of parent training per week for six months. This is a relatively small amount of direct intervention with the parent and child given the magnitude and consistency of the effects on [short-term] child language outcomes".</i>			
4. Burden on patient to adhere to recommendation	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Unable to determine	<input type="checkbox"/> High
<i>Comments: In several studies such as Kashinath, 2006 [4b], with a small amount of parent training, parents generalized the skills they were taught to everyday routines.</i>			
5. Cost-effectiveness to healthcare system	<input checked="" type="checkbox"/> Cost-effective	<input type="checkbox"/> Inconclusive	<input type="checkbox"/> Not cost-effective
<i>Comments: It is cost-effective to train parents, when they attend therapy. The more children practice, the quicker they will achieve their therapy goals. For a formal home program a minimal cost would occur for printing home program instructions and reward charts and star stickers.</i>			
6. Directness of the evidence for this target population	<input checked="" type="checkbox"/> Directly relates	<input type="checkbox"/> Some concern of directness	<input type="checkbox"/> Indirectly relates
<i>Comments: The children in these studies (birth-18 yrs.) were of similar age to those on speech-language pathologist caseloads at CCHMC.</i>			
7. Impact on morbidity/mortality or quality of life	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
<i>Comments: Roberts, 2011 [1a] reported that "these results indicate that even a small amount of parent training can have substantial effects on children's language development". If children can ask for things they want or tell a parent when they were sick or hurt, it can increase their quality of life.</i>			

Reference List: *(Evidence Level in []; See Table of Evidence Levels following references)*

Allen, J. and Marshall, C. R. (2011). "Parent–Child Interaction Therapy (PCIT) in school-aged children with specific language impairment." International Journal of Language & Communication Disorders 46(4): 397-410. [2a]

Alloy, L. B., Riskind, J. H. and Manos, M. J. (2005). Glossary. In Abnormal Psychology Current Perspectives. Retrieved from http://highered.mcgraw-hill.com/sites/007242298x/student_view0/glossary.html [5]

Crowe, L. K., Norris, J. A., et al. (2004). "Training caregivers to facilitate communicative participation of preschool children with language impairment during storybook reading." Journal of Communication Disorders 37(2): 177-196. [4a]

Fey, M. E., Warren, S. F., et al. (2006). "Early Effects of Responsivity Education/Prelinguistic Milieu Teaching for Children With Developmental Delays and Their Parents." J Speech Lang Hear Res 49(3): 526-547. [2a]

Gordon-Brannan, M. E. and Weiss, C. E. (2007). "Clinical management of articulatory and phonogenic disorders." Baltimore, MD: Lippincott Williams and Wilkins. [5]

Gunther, T. and Hautvast, S. (2010). "Addition of contingency management to increase home practice in young children with a speech sound disorder." International Journal of Language & Communication Disorders 45(3): 345-353. [3a-CCT]

Kashinath, S., Woods, J., et al. (2006). "Enhancing Generalized Teaching Strategy Use in Daily Routines by Parents of Children With Autism." J Speech Lang Hear Res 49(3): 466-485. [4b]

Law, J., Garrett, Z., et al. (2010). "Speech and language therapy interventions for children with primary speech and language delay or disorder." Cochrane Database of Systematic Reviews(5). [1a]

McConachie, H., Randle, V., et al. (2005). "A controlled trial of a training course for parents of children with suspected autism spectrum disorder." Journal of Pediatrics 147(3): 335-340. [3a]

McDuffie, A. and Yoder, P. (2010). "Types of Parent Verbal Responsiveness That Predict Language in Young Children With Autism Spectrum Disorder." J Speech Lang Hear Res 53(4): 1026-1039. [2a]

Pennington, L., Goldbart, J., et al. (2009). "Speech and language therapy to improve the communication skills of children with cerebral palsy." Cochrane Database of Systematic Reviews(1). [1a]

Pennington, L., Thomson, K., et al. (2009). "Effects of It Takes Two to Talk--The Hanen Program for Parents of Preschool Children With Cerebral Palsy: Findings From an Exploratory Study." J Speech Lang Hear Res 52(5): 1121-1138. [4a]

Reagon, K. A. and Higbee, T. S. (2009). "Parent-implemented script fading to promote play-based verbal initiations in children with autism." Journal of Applied Behavior Analysis 42(3): 659-664. [5a]

Roberts, M. Y. and Kaiser, A. P. (2011). "The Effectiveness of Parent-Implemented Language Interventions: A Meta-Analysis." Am J Speech Lang Pathol: 1058-0360_2011_1010-0055. [1a]

- Secord, W. A. and Shine, R. E. (1997). "Secord Contextual Articulation Tests." Salt Lake City, UT: Red Rock Publishing. [5]
- Scherer, N. J., D'Antonio, L. L., et al. (2008). "Early intervention for speech impairment in children with cleft palate." Cleft Palate-Craniofacial Journal 45(1): 18-31. [4a]
- Schooling, T. V., R. and Leech, H. (2010). "Evidence Based Systematic Review: Effects of Service Delivery on the Speech and Language Skills of Children From Birth to 5 Years of Age." ASHA's National Center for Evidence Based Practice in Communication Disorders: 230. [1a]
- Smit, A. B. (2004) "Articulation and phonology resource guide for school-age children and adults." Clifton Park, NY: Delmar Learning [5]
- Warren, S. F., Fey, M. E., et al. (2008). "A Randomized Trial of Longitudinal Effects of Low-Intensity Responsivity Education/Prelinguistic Milieu Teaching." J Speech Lang Hear Res 51(2): 451-470. [2a]
- Yoder, P. J. and Warren, S. F. (2002). "Effects of Prelinguistic Milieu Teaching and Parent Responsivity Education on Dyads Involving Children With Intellectual Disabilities." J Speech Lang Hear Res 45(6): 1158-1174. [2a]

SUPPORTING INFORMATION

Background / Purpose of BES Development:

This clinical question was derived from professional observation that family involvement in the therapy process led to faster progress toward speech and language goals. However, a review of the state of current evidence was needed in order to determine best practice.

Applicability Issues:

An applicability issue for the implementation of this evidence is initiation of a formal home program. To initiate a formal home program speech-language pathologists need access to educational materials, which provide home program instructions and highlight the benefits of home practice, reward charts for families to increase motivation and detailed practice logs to document the frequency and amount of practice.

Outcome or Process Measures:

The Secord Contextual Articulation Tests (S-CAT) provide a total percentage correct for the phoneme (sound) a child is working on in speech therapy. When children achieve approximately 85% accuracy for a phoneme on the S-CAT, they can efficiently carry-over the sound into conversational speech. With an active home program, it is estimated that children can achieve 85% accuracy on a phoneme in 2-4 months. Progress may be more or less depending on the severity of the child's condition and ability to attend during sessions.

The S-SCAT determines progress over a short period of time because it measures the frequency that a sound is used in various word positions and with other consonants. The more often a sound is produced in a variety of

contexts, the more likely the sound will be used in conversational speech. According to Gordon-Brannan and Weiss (2007), the S-CAT “allows clinicians to pretest speech sounds in depth, identify facilitative contexts, measure progress during treatment, and post-test performance” (p. 144). Smit (2004) reported that the S-CAT is used to assess the inconsistency and contextual variation of a sound to determine if the child is producing the sound consistently in a variety of contexts (p. 80-81).

Search Strategy:

Date Range: January, 2001 to May, 2011

Keywords: parent, speech therapy, caregiver, home program, early intervention, speech and language

Limits: English

Databases: American Speech and Hearing Association (ASHA), Medline, The Cochrane Library, and CINAHL.

Relevant CCHMC Evidence-Based Documents:

“Speech Stimulation: Guidelines for Parents and Caregivers”

“Therapy Practice Log”

“Language Stimulation for Infants”

“Language Stimulation: Guidelines for Parents and Caregivers”

(E-Chirp; Division of Speech-Language Pathology-Parent and Family Education; Parent Handouts and Growing Through Knowing Handouts)

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Conflicts of Interest Were Declared for Each Team Member:

- No financial conflicts of interest were found.
 The following financial conflicts of interest were disclosed:

Note: Full tables of evidence grading system available in separate document:

- [Table of Evidence Levels of Individual Studies by Domain, Study Design, & Quality](#) (abbreviated table below)
- [Grading a Body of Evidence to Answer a Clinical Question](#)
- [Judging the Strength of a Recommendation](#) (abbreviated table below, dimensions table above)

Table of Evidence Levels (see note above)

Quality level	Definition
1a† or 1b†	Systematic review, meta-analysis, or meta-synthesis of multiple studies
2a or 2b	Best study design for domain
3a or 3b	Fair study design for domain
4a or 4b	Weak study design for domain
5a or 5b	General review, expert opinion, case report, consensus report, or guideline
5	Local Consensus

†a = good quality study; b = lesser quality study

Table of Recommendation Strength (see note above)

Strength	Definition
It is strongly recommended that... It is strongly recommended that... not...	There is consensus that benefits clearly outweigh risks and burdens (or visa-versa for negative recommendations).
It is recommended that... It is recommended that... not...	There is consensus that benefits are closely balanced with risks and burdens.
There is insufficient evidence and a lack of consensus to make a recommendation...	

Copies of this Best Evidence Statement (BEST) and related tools (if applicable, e.g., screening tools, algorithms, etc.) are available online and may be distributed by any organization for the global purpose of improving child health outcomes.

Website address: <http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/best.htm>

Examples of approved uses of the BEST include the following:

- copies may be provided to anyone involved in the organization's process for developing and implementing evidence based care;
- hyperlinks to the CCHMC website may be placed on the organization's website;
- the BEST may be adopted or adapted for use within the organization, provided that CCHMC receives appropriate attribution on all written or electronic documents; and
- copies may be provided to patients and the clinicians who manage their care.

Notification of CCHMC at EBDMinfo@cchmc.org for any BEST adopted, adapted, implemented, or hyperlinked by the organization is appreciated.

Please cite as: Cincinnati Children's Hospital Medical Center: Partnering with parents for greater treatment outcomes in speech-language pathology, <http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/best.htm>, BEST 115, pages 1-6, 12/27/2011.

This Best Evidence Statement has been reviewed against quality criteria by 2 independent reviewers from the CCHMC Evidence Collaboration.

For more information about CCHMC Best Evidence Statements and the development process, contact the Evidence Collaboration at EBDMinfo@cchmc.org.

Note

This Best Evidence Statement addresses only key points of care for the target population; it is not intended to be a comprehensive practice guideline. These recommendations result from review of literature and practices current at the time of their formulation. This Best Evidence Statement does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the recommendations to meet the specific and unique requirements of individual patients. Adherence to this Statement is voluntary. The clinician in light of the individual circumstances presented by the patient must make the ultimate judgment regarding the priority of any specific procedure.