Effective Service Delivery for Fluency in the Schools - Handout
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The following handouts and protocols originated with Kristin Chmela for the Schaumburg, IL school district fluency project, Camp Shout Out Professional Development handouts, and Chmela and Campbell, Working with School-Age Children Who Stutter; Basic Principle Problem Solving.


Onset and Development of Stuttering:

- Most stuttering begins between 2-4 years of age; 60% by 36 months, 85% by 42 months, 95% by 48 months. Sudden Onsets are not uncommon - 40%
- Lifetime incidence of stuttering = 5-10%; prevalence of stuttering = 1%
- 65-80% of CWS (Children Who Stutter) will recover spontaneously with CWS at 4 y.o. at 75% chance of recovery (CofR); 6 y.o. 50% CofR, and 10 y.o. 25% CofR
- Children with earliest onsets (under 3 years) regardless of severity are more likely to recover
- Close to onset, severity of stutter-like disfluencies (SLD) does not predict persistence. However, recovery is more likely when the % of SLD starts to drop in the first year.
- CWS present with greater than 70% SLD (of total disfluencies) which are part-word repetitions, single-syllable repetitions, prolongations and blocks. CWS repeat more than 2 extra units where CWNS tend to produce 1-2 extra units. CWS demonstrate faster repetitions of units and more secondary stuttering behaviors.
- Genetic Factors: Heritability is about 70%, but severity is not transferred. Family history of recovered stuttering indicates 65% chance of following similar pattern and vise versa. Gender bias with more males persisting in stuttering.
- Neurological Findings - Bottom line - the brain is working differently when stuttering. Chang and Zhu (2013) Close to the onset of stuttering, CWS demonstrate neurological differences and boys who stutter may demonstrate additional atypical neural functioning than GWS. Post tx neural activation changes have been demonstrated in PWS.
- Linguistic Factors - Stuttering highly correlated with linguistic complexity, children with better language skills demonstrate a better chance of recovery. CWS are 3X more likely than CWNS to exhibit s/l dissociations or differentials between receptive and expressive language. Children with earliest onset of stuttering tend to show relatively strong expressive language skills.
- Linguistic Factors - Stuttering in children tends to occur more on: Low frequency words, words in the initial position of a phrase, function words versus content words, longer or more syntactically complex utterances, utterances above the child’s MLU
- Speech Motor Factors - PWS show reduced capacity to acquire new speech and non-speech motor behaviors rapidly and efficiently to the point of automaticity.
Other Disfluencies and Stutter-Like Disfluencies - (Used with permission from Chmela 2012)

More typical disfluencies (Disfluencies without tension; not considered to be stuttering)
- Hesitations: silent pause of 1 second or longer (ie: I.. (pause)...want the red one).
- Interjections: meaningless words irrelevant to the message [um/like/well/uh](ie: I um want the red one)
- Revisions: change in content, grammar, or pronunciation of a message (ie: I want the blue...the red one)
- Unfinished words: a word that is abandoned and not completed later in the message (ie: I want the oran....red one)
- Phrase repetitions: repetition of at least 2 complete words of the message (ie: I want...I want the red one)
- Word repetitions (up to 2-3x): repetition of a whole word in a slow casual way (ie: II want the red one)

Atypical Disfluencies
- Word Final Disfluencies (want-t-t-t)
- Word Medial Blocks (op [block] en)
- Mid-syllable insertion or break (we-he for we)
- Word Final Prolongations (bus-------)

Stutter-Like Disfluencies - Less typical disfluencies (Disfluencies with tension; considered as stuttered word)
- Word repetitions (3-4x or more): repetitions of a whole word (ie: IIII want the red one)
- Interjections: used as a starter, or 3x or more, or used rapidly) (ie: Um Um Um I want well well well the red one)
- Syllable repetitions: more than a sound repetition and less than a word repetition (ie: I wa wa want the red one.
- Sound repetitions: repetition of a phoneme that does not stand alone as a word (ie: I want the r r r red one)
- Prolongations: duration of a phoneme (may include pitch rise and tension)(ie: I I I I I I I I want the red one, or I waaaaaaaant the red one)
- Blocks: inappropriate timing for initiation of a phoneme or release of a stop element (ie: I want.........the red one) [can include fixed articulatory posture and tension]
- Multi-component: combination of disfluencies right in a row (less or more typical types) (ie: IIII waaaaaant the red one, or I, uh uh, wa wa wa waaaant th th th the red one.

Cluttering
"Cluttering is a fluency disorder wherein segments of conversation in the speaker's native language typically are perceived as too fast overall, too irregular, or both. The segments of rapid and/or irregular speech rate must further be accompanied by one or more of the following:"
(a) excessive "normal" or other Disfluencies
(b) excessive collapsing or deletion of syllables; and/or
(c) abnormal pauses, syllable stress, or speech rhythm."

*Definition of Cluttering: "lowest common denominator" (LCD) (e.g., St. Louis, 1992; St. Louis, Raphael, Myers, & Bakker, 2003; St. Louis, Myers, Bakker, & Raphael, 2007).
(Plexico et al. 2010; Scott, Grossman, Abendroth, Tetnowski & Damico, 2006; Sisskin, 2006; Shriberg et al., 2001; Paul et al. 2005; Gregory, 2003; Conture, 2001; Guitar, 2006)
### Risk Factors for Pervasive Developmental Stuttering

<table>
<thead>
<tr>
<th>High Risk Factors</th>
<th>Low Risk Factors</th>
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<tbody>
<tr>
<td>Family history of stuttering:</td>
<td>No Family History</td>
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<tr>
<td>Person’s relationship to child</td>
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<tr>
<td>Person’s gender: ___ Male ___ Female</td>
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<tr>
<td>Did person/s continue to stutter or report they feel they still stutter?</td>
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<tr>
<td>Child is male gender</td>
<td>Child is female gender</td>
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<tr>
<td>Onset after three years, five months</td>
<td>Onset before three years, five months</td>
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<tr>
<td>Stuttering longer than 6 months to one year</td>
<td>Stuttering less than 6 months</td>
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<tr>
<td>Presence &amp; higher proportion of stutter-Like disfluencies compared to other disfluencies:</td>
<td>Presence of Other Disfluencies within normal frequency;</td>
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<tr>
<td>Part-word repetitions, single-syllable word repetitions, prolongations and blocks.</td>
<td>Stutter-Like Disfluencies not present (less than</td>
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<tr>
<td>Multiple units of repetitions, faster units, shorter pause duration between repeated units.</td>
<td>10% based on 300 syllable speech sample)</td>
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<td>Secondary stuttering behaviors (ie. Facial grimaces, body movements, etc.)</td>
<td>Unfinished words</td>
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<tr>
<td></td>
<td>Revisions</td>
</tr>
<tr>
<td></td>
<td>Interjections</td>
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<td></td>
<td>Whole word repetitions (less than 4)</td>
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<tr>
<td></td>
<td>Phrase repetitions</td>
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<td></td>
<td>Effort free disfluencies and less than 4 iterations of repeated unit.</td>
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<tr>
<td>Sensitive temperament profile: higher level of reactivity, lower sensory threshold, other</td>
<td>Less sensitive profile</td>
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<tr>
<td>Concerns/diagnosis regarding: language abilities, phonology, articulation, overall development, ADHD, anxiety, Tourette Syndrome, OCD, Autism, depression or learning disabilities</td>
<td>No other concerns</td>
</tr>
<tr>
<td>Parents/Caregivers anxious, reacting negatively to child’s problem communicating</td>
<td>Minimal or no anxiety regarding problem</td>
</tr>
<tr>
<td>Child demonstrates frustration, negative reactions to problems.</td>
<td>Child not demonstrating frustration</td>
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</tbody>
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Fluency Continuum for Early Intervention*
*Permission for use granted by Kristin Chmela (2012)
Early Intervention refers to 3-5 years old; Crossover refers to 5-7 years old; for 7 years old and above refers to Elementary Fluency Criteria

Crossover Information
when evaluating a child ages 6-7, refer to Early Intervention Fluency Programming for screening and evaluation information
When treating a child ages 6-7, refer to Early Intervention Treatment Plan and adhere to Early Intervention procedures.
If further counterconditioning of speech motor patterns or attitudes is needed, utilize fluency shaping and/or stuttering modification techniques as appropriate.
Reinforce the child for what they are doing to make talking easier.

1. First complete Early Intervention Screening Packet (email me)
   ● Communication Within Educational Environment (teacher interview)
   ● Communication Within Home Environment (parent/caregiver interview)
   ● Rating Scales (9 Characteristics of Temperament)

2. Complete Pervasive Developmental Stuttering Risk Factor Chart. Assess whether child has high risk factors or low risk factors for pervasive developmental stuttering.

3. What is the overall level of present risk factors for Pervasive Developmental Stuttering?
   Options for next step if Overall Level is...

4. Low......Monitor

5. Low to Medium....Response to Intervention

6. Medium to High...Response to Intervention

7. Medium to High....Early Intervention Fluency Evaluation

8. High........................Early Intervention Fluency Evaluation

9. Progress is looked at in percent stuttered syllables and Parent/Teacher Quantity Rating.

10. The above options are guidelines. Professional judgment and best practices take precedent.

Monitor - Parent provided with information about early stuttering from SLP
   ● Stuttering Foundation website (www.stutteringhelp.org)--free downloaded book and DVD online
   ● Stuttering HomePage Preschool Information (www.stutteringhomepage.com)
   ● Parent/caregiver or teacher taught by SLP to make daily ratings of quantity of stuttering; comments regarding features
   ● SLP checks in occasionally with child
   ● From monitor could go to RtI, Fluency Evaluation, or Dismiss

Response to Intervention
   ● 12 week time period; (Could also be 6 weeks SLP with parent and 6 weeks home program monitored - Laura’s input).
• Parent provided with information about early stuttering from SLP
• Stuttering Foundation website (www.stutteringhelp.org)--free downloaded book and DVD online
  7 Tips for Talking with Your Child
  Preschool Video
  Stuttering HomePage Preschool Information (www.stutteringhomepage.org)
  Parent/caregiver/ teacher taught by SLP to make daily ratings of quantity of stuttering; comments regarding features
• SLP makes rating for each weekly session

Parent/caregiver taught by SLP and implement:
• 10 Minute Daily Play Situation
• Modeling: Interactive Communication Behaviors
• Videotape interaction and have parent view it
• Select ways to create more facilitating fluency environment for child § Guided Modeling: Teach parent how to model - (Palin Parent Child Interaction Therapy - find out what parent is doing right and encourage them to do more of it).
• SLP collects and plots ratings each week; watches parent/caregiver model interactive communicative behaviors; SLP praises child as well, and adult providing feedback to child

Next steps after 12 weeks:
• If ratings decreased to mostly 1’s, some 2’s: gradually reduce direct therapy and parent verbal contingencies over time
• If ratings are above 2: Problem Solve; What are present risk factors?
• If child is responding, may continue for another 12 week period or may go to evaluation
• EI students will rarely do more than 2 rounds of interventions (24 weeks). After 24 weeks, the child will likely need a case study evaluation to gather more information or begin a more direct therapy approach.

Early Intervention Fluency Evaluation
A. The Screening Packet may need to be reviewed, completed or updated. (Detailed history and environmental information)
B. Motor
Formal Measures: Test of Childhood Stuttering (TOCS); ages 4-12
OR
Stuttering Severity Instrument-4 (SSI-4)
AND/OR
Informal Measures: Parent & Teacher Quantity Ratings (quantity, effort, or both using a 1-10 rating scale, 1=no stuttering or no effort; 10=most stuttering or effort)
AND
Phonology, Articulation, Oral Motor, Voice
C. Social-Emotional - Sample Questions: “Do you like talking? Who do you like talking to?” If they say it’s different…“what do you mean?” If they say they stutter…“what does that mean?”
D. Sensory Processing Information - Consult with OT
E. Cognitive-Language Information - Even if within the average range, there may be a specific area that is discrepant which can be addressed through a fluency goal.

- Clinical Evaluation of Language Fundamentals–Preschool (CELF-P or CELF 5)
- Picture Peabody Vocabulary Test– 4 (PPVT-4) pr Receptive One Word Picture Vocabulary Test
- Receptive One Word Picture Vocabulary Test – 4 (ROWPVT-4), Expressive Vocabulary Test – 2 (EVT-2), Expressive One Word Picture Vocabulary Test– 4

**EARLY INTERVENTION TREATMENT:**

**Goal:** By _____, across the educational environment, XXX will produce normally fluent speech as measured by ratings of 1-2 (1 = no stuttering, 2 = very little stuttering and 10 = most stuttering ever from student) for 6 consecutive weeks.

**Benchmarks:**
1. By __, WW will produce normally fluency speech within structured play based activities while receiving verbal reinforcement for target skills including smooth speech and thinking time as measured by ratings of 1 or 2.
2. Same as one, but in unstructured play-based activities.
3. Same as above, but across educational environments.

**General Guidelines:**
- 1x/week for 40-60 minutes
- Begin with general Response to Intervention Protocol
- 10 minute session occurs daily with traditional indirect approach (modeling and praising overall communication).
- Teach parent/caregiver how to increase/decrease language output from child
- Teach administration of verbal contingencies (praise for smooth talking), ask if talking was smooth (only when it is!), occasionally asking for self-correction (can you say that again smoothly?)
- Continue 10 minute sessions and have caregiver administer verbal contingencies along with other feedback for general communication at any time; caregiver should provide 10-15 praises, and a few corrections (only when 5 praises have occurred)
- Parent/caregiver/SLP continue to make ratings
- Problem solve when stuttering increases
- Criteria: 4-6 weeks all ratings at 1 or 2; gradual dismissal with continued praises at home for smooth speech and general communication, monitoring with gradual school therapy decreasing over one year.
- If parent cannot attend weekly therapy or is not able to follow through at home: SLP sees the child every day for 10 minutes at school, utilize school staff, weekly phone/email communication, problem solving using the resources that are available for your particular situation.
Fluency Continuum for the School-Aged Population

Early Intervention refers to 3-6 years old; Crossover refers to 6-7 years old; for 7 years old and above refer to School-Aged Fluency Criteria

Crossover Information
when evaluating a child ages 6-7, refer to Early Intervention Fluency Programming for screening and evaluation information
When treating a child ages 6-7, refer to Early Intervention Treatment Plan and adhere to Early Intervention procedures.
If further counter-conditioning of speech motor patterns or attitudes is needed, utilize fluency shaping and/or stuttering modification techniques as appropriate.
Reinforce the child for what they are doing to make talking easier.

Complete the School-Aged Screening Packet (email me)

Communication Within Educational Environment (teacher interview)
Communication Within Home Environment (parent/caregiver interview)
Rating Scales (9 Characteristics of Temperament)
Informal Student Interview (Informal Child Interview: See Addendum B)

Complete School-Aged Fluency Summary Chart (Informal Overview of Description of Problem and Relevant Contributing Factors)
Complete the School-Aged Fluency Rubric
If any area on the School-Aged Fluency Rubric is significant, move to an evaluation.

School-Aged Fluency Evaluation
School-aged Screening Packet:
Communication Within Educational Environment
Communication Within Home Environment (including developmental history)
9 Characteristics of Temperament
Informal Student Interview

The Screening Packet may need to be reviewed, completed or updated. (Detailed history and environmental information)

1. Motor
Formal Measures: Test of Childhood Stuttering (TOCS); ages 4-12
   OR
   Stuttering Severity Instrument-4 (SSI-4)

AND/OR
Informal Measures (use School-Aged Fluency Data Chart to compile information):
(Quantity rating = quantity, effort, or both using a 1-10 rating scale, 1=no stuttering or no effort; 10=most stuttering or effort)

   Parent Quantity Rating (overall daily rating)
   Teacher Quantity Rating (oral reading, dialogue)

   (dialogue, monologue, oral reading and time pressure)

AND
2. Phonology, Articulation, Oral Motor, Voice (informal unless otherwise indicated)

3. Social-Emotional (gather information from standardized assessment AND/OR informal questionnaires)
   Formal measures:
   Behavior Assessment Battery for School-aged Children who Stutter (BAB)
   Subtests: Behavioral Checklist (BCL), Speech Situation Checklist – Emotional Response (SSC-ER), Speech Situation Checklist – Speech Disruption (SSC-SD), Communication Attitude Test-Revised (CAT-R)
   Overall Assessment of the Speaker's Experience of Stuttering (OASES)
   Informal measures:
   What’s True for You; The Worry Ladder (Chmela, K. A. & Reardon, 2001)
   Incorporate informal student interview information

4. Sensory/Temperament Information
   9 Characteristics of Temperament Informal Rating Chart
   Consult with OT if appropriate

5. Cognitive-Language Information
   Even if within the average range, there may be a specific area that is discrepant which can be addressed through a fluency goal.
   Clinical Evaluation of Language Fundamentals – 5 (CELF-5)
   AND
   Picture Peabody Vocabulary Test – 4 (PPVT-4) OR Receptive One Word Picture Vocabulary Test – 4 (ROWPVT-4)
   Expressive Vocabulary Test – 2 (EVT-2) OR Expressive One Word Picture Vocabulary Test – 4 (EOWPVT-4)
   ADDITIONAL OPTIONS
   Language Processing Test Elementary (LPT-3 Elementary)
   Test of Narrative Language (TNL)
   Language Sample Analysis

**School-aged Fluency Criteria**

Name of Student: ______________________
Based upon the evaluation, the following areas will be determined significant or not significant. Motor component must be observed/reported significant for criteria to be met. Motor component considered significant if:
Presence of more than 8-10% Other Disfluency
Presence of more than 1-2% Stutter-Like Disfluency
Presence of more than 1-2% Atypical Disfluency
AND informal report of Ratings and Description from Parent, Teacher, Child
Complete a diagnostic statement with three parts.

1. **Motor** - (quantity and quality) - ex. 14% syllables stuttered, moderate disfluency, presence of prolongations, whole and part word repetitions and multiple interjections.

2. **Contributing Risk Factors** - ex. mild grammatical errors, significant discrepancy between receptive and expressive vocabulary, large family and busy schedule with recent birth of younger sibling, poor turn-taking and eye contact, reactive temperament and impulsive behaviors, etc..

3. **Areas of Discrepancy (Adverse Effects)** - ex. Student has more stuttering during oral reading in class and answering questions.

**Goal** - Should relate to the area of discrepancies - Student will use fluency enhancing strategies to read aloud in a small group as measured by completion of weekly contract cards.

**Parent/Teacher Resources**
- Stuttering Foundation website (www.stutteringhelp.org) - free downloaded books, brochures and DVD
- Stuttering Home Page (www.stutteringhomepage.org)
- National Stuttering Association (www.westutter.org)
- FRIENDS: National Association of Young People Who Stutter (www.friendswhostutter.org)

**References**


Daily Rating Form - Adapted from Lidcombe

1 = No Stuttering
2 = very mild; outside person would not notice
3 = mild; outside person would notice something
4 = starting to interfere with communication; definitely heard by listener
5-6 = moderate severity and/or quantity of stuttering
7-8 = severe stuttering and/or quantity of stuttering
9 = very severe stuttering
10 = worst stuttering imaginable for this child

Ask: Was there any stuttering? Would it have been noticed by a casual observer? How much did it interfere with communication?

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<tr>
<th>Day</th>
<th>Rating</th>
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<tbody>
<tr>
<td>Monday</td>
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<td>Friday</td>
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<tr>
<td>Saturday</td>
<td></td>
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<tr>
<td>Sunday</td>
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CAMP SHOUT OUT FOCUSES ON 5 AREAS TO BUILD GREAT COMMUNICATORS -

ATTENTIVE: Attending (listening and responding), shifting attention to reduce effort associated with speaking (self-corrects or modifies speech), self-regulating to assist communication, responding appropriately

ASSERTIVE: Taking verbal risks by volunteering and participating, talking about communication needs to others, “avoiding avoiding”.

CONFIDENT: Making an intentional first impression (eyes, face, handshake); using eyes, face, body, volume of voice appropriate for situation.

EFFECTIVE: Using appropriate pausing and phrasing, organization of expressive language, increasing ease of speech, reducing effort when talking, utilizing complete sentences and efficient rate of information flow.

PROACTIVE: Attending therapy and following through with home assignments, planning in advance for effective communication, seeking out communicative opportunities, being honest and talking openly about attitudes and feelings concerning talking.

CORE BASIC PRINCIPLES FOR FLUENCY THERAPY (Dr. Hugo Gregory, 1968, 1974, 2003)

Principle 1: Differential Evaluation-Differential Treatment - ongoing
Principle 2: Relationship - with student and all interested parties - continually fostered
Principle 3: Counterconditioning, deconditioning and desensitization of maladaptive attitudes and behaviors to more adaptive ones.
Principle 4: Modeling of good communication skills using fluency enhancing and stuttering modification skills.
Principle 5: Guided Practice - manipulate child and environmental variables during treatment activities and assignments.
Principle 6: Positive Reinforcement
Principle 7: Self-Monitoring, Self-Reinforcement
Principle 8: Generalization
Principle 9: Transfer of Behavior Change
Principle 10: Gradual Dismissal, Follow-Through and Maintenance
Principle 11: Integrating child and environment-related factors (motor, social-emotional, sensory, cognitive, language and environment) - throughout the whole process.

*Instead of asking, “what program should I follow,” instead of using the same program for every child, think instead of using the basic principles to guide your work.