Rethinking Medicaid Guidelines for Interpreting the Stuttering Severity Instrument
Ashlen Thomason, M.S. CCC-SLP

• General standardized test interpretation, “moderate rule,” for tests normed on the overall population:
  o Mild: Scores between 84-78; -1.0 standard deviation
  o Moderate: Scores between 77-71; -1.5 standard deviations
  o Severe: Scores between 70-64; -2.0 standard deviations
  o Profound: Scores of 63 or lower; -2.0+ standard deviations (Arkansas Medicaid, p. 29)

![Figure 1: The proportion of a population on a standard curve -1.5 SD below the mean or beyond](image)

• Current Guidelines, Arkansas Q-Source Manual (Section II-page 26, 214.400, C:5):
  
  **FLUENCY:** At least one norm-referenced, standardized test with good reliability and validity, and at least one supplemental tool to address affective components. Eligibility for fluency therapy will be based upon an SS of -1.5 SD below the mean or greater on the standardized test.

• Arkansas Medicaid Therapy Provider Manual Revision Q &A, Question 28 (Qsource Arkansas, 2010):
  
  Q: Eligibility for fluency therapy will be based upon a SS of -1.5 SD below the mean or greater on the standardized test.” The only fluency test listed under the Standardized Speech Production Tests is the SSI-3 (which is our preferred fluency test); however, the SSI-3 doesn’t provide Standard Scores. It only provides a percentile and severity rating. Therefore, how can I qualify a child according to the guidelines?
  
  A: A percentile rank that indicates a moderate deficit is acceptable in lieu of a standard score.
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- **Problem:** Stuttering Severity Instrument, 3rd and 4th Editions were only normed on a *disordered* population, people who stutter.

- **SSI-3 Manual** (Riley, 1994):
  
  Expressing the level of severity of stuttering as a percentile is more precise than using the adjectives mild, moderate, and so forth; the percentiles are the product of mathematical procedures, whereas the adjectives were selected as logical but not mathematical. The means and standard deviations for the subtests are the total scores at each level are shown in Table 5 (p. 12).

![Diagram](image1)

Figure 3: Riley's non-mathematically derived “adjectives” compared to their corresponding percentiles.
Examples:

- A preschool child with an SSI-3 Total Overall Score of 15 would be labeled as “mild,” even though he or she would have stuttering in the average range compared to other preschool children who stutter. Total Overall Score on the SSI-3 for preschool children is 19.6 with a standard deviation of 7.5:

![Figure 4: Means and standard deviations for preschool children who stutter, n=72 (Riley, 1994)](image)

- A school-aged child with a Total Overall Score of 16 would be labeled as mild at the 40th percentile, even though an average school-age child who stutters has a score between 13.2 and 29.6:

![Figure 5: Means and standard deviations for school-age children who stutter, n=139 (Riley, 1994)](image)

- The average adult who stutters scores in the range of 18.4 to 33; however, an adult who scores a Total Overall Score of 24 would be labeled as “mild” and would not qualify for speech therapy services. On the other hand, an adult who earned a Total Overall Score of 32 would be labeled as “severe” when his or her score falls in the average range compared to other adults who stutter:

![Figure 6: Means and standard deviations for adults who stutter, n=60 (Riley, 1994)](image)
• **New Interpretation:** People who have an SSI-3 or SSI-4 Total Overall Score that is within a standard deviation of the mean for their age group or beyond.

• **Special consideration needed for “mild” stuttering:**
  1) **Children who exhibit mild stuttering,** are within three years since their age of onset, and exhibit well-evidenced risk factors for persistence:
     - Children who are stuttering **three years past onset** are considered to have persistent stuttering (Yairi, Ambrose, & Niermann 1993).
     - Children who have **mild stuttering are still at risk for persistence** into adulthood (Yairi & Ambrose, 1992b; Yairi, Ambrose, & Niermann, 1993; Yairi & Ambrose, 1999a).
     - **Steady or increasing stuttering-like disfluencies** across the first year after onset are a risk factor for persistence. Children whose use stuttering-like disfluencies decreased over the first year tended to recover (Yairi & Ambrose, 2005).
     - **Family history** is the greatest predictive factor for a child’s persistence (Yairi & Ambrose, 2005). Children tend to follow their older relatives’ patterns of stuttering persistence or recovery 65% of the time (Yairi & Ambrose, 2005).
     - **Males** are at a higher risk for persistence of stuttering; approximately 75% of adults who stutter are male. (Yairi & Ambrose, 2005).
     - **Length of time since onset** is a prognostic indicator for persistency, as the chances for spontaneous recovery are diminished as months pass by, such that the chance for recovery after two years is 47% (Yairi & Ambrose, 2005).
     - Children who persisted in their stuttering tend to be at least **3.5 months older** than their peers who recover from their stuttering (Yairi & Ambrose, 2005).
     - **Characteristics six months after onset:**
       - The continuing presence of disfluencies with **multiple repetition units,** especially those containing three or more units per instance that is a sign of high risk; children who recover naturally and early do not continue to exhibit multiple repetitions (Yairi & Ambrose, 2005).
       - The duration of disfluencies does not differentiate the persistent or recovered groups at any point in time; however, if the percentage of **sound prolongations** increases over time, so does the risk for persistence (Yairi & Ambrose, 2005).
       - If **physical contaminants** characterized by head and neck movements do not decline in the first six months after onset, they are also a strong risk factor for persistence (Throneburg & Yairi, 2003).

  2) **School-aged children and adults** whose Total Overall Score falls below 1.0 standard deviations from the mean for their age group during standardized tasks but exhibit markedly **more severe stuttering in functional speaking situations.**
     - Telephone
     - Ordering
     - Reading aloud in front of a group
     - Presentation in front of a group
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- Proposed Changes:
  - FLUENCY: At least one norm-referenced, standardized test with good reliability and validity, and at least one supplemental tool to address affective components. Eligibility for fluency therapy will be based upon a standard score within 1.0 standard from the mean or greater on the standardized test. Exceptions to this scoring will be provided to patients whose scores are below 1.0 SD from the mean for:
    - Children within three years of stuttering onset who exhibit two of the following risk factors for persistent developmental stuttering:
      - Family history of stuttering in a first or second order relative
      - Males
      - Steady or increasing stuttering severity over a 6-month period
      - Dysfluencies of three or more units present 6-months past onset
      - Dysfluencies accompanied by secondary movements present 6-months past onset
    - School-aged children and adults whose standard scores are within 1.0 standard deviation from the mean or greater when their speech sample is gathered from additional functional speaking tasks.

References:


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