“It is now widely accepted that stuttering is a multidimensional disorder. It is also widely accepted that stuttering is a neurodevelopmental disorder, which means that it arises during development in childhood.”
Agenda

• Apply a Risk Factor Analysis

• Develop Differential Treatment Plans

• Demonstrate 5 Essential Clinical Skills
Risk Factors

• Knowledge of 3 types

• Research based

• Guide
Stuttering Persistence vs. Recovery

Preschool - 1st grade

2nd-4th grade

5th-8th grade

1 year post onset: 63% recover
2 years post onset: 47% recover
3 years post onset: 16% recover
4 years post onset: 5% recover

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Primary Risk Factors
(rank ordered)

1. **Family history** of persisted stuttering
2. **Male** Gender
3. **Trends** of fluency pattern flat or increased in frequency
4. **Persistence** 6-12 months post onset
5. **Age** at onset after 3 ½
6. **Repetitions** of 2-3 or more units; quicker tempo
7. **Prolongations/Blocks**

Secondary Risk Factors

- **Quantity** of stuttering remains severe after 1 year
- **Head & neck movement** remains frequent & severe after 1 year
- **Phonological skills** below normal in early phase of stuttering
- **Expressive language skills** remain advanced over time or present as weak

Other Considerations

- **Child shows** frustration/withdrawal/avoidance
- **Child’s temperament** presents with lower sensory threshold, adaptability, & attention; higher reactivity & distractibility
- **Other developmental issues** present
- **Caregivers display** significant anxiety/negative manner of reacting
- **Family history** of speech/language, learning, anxiety, mood, ADHD, tic or compulsive disorders; autism spectrum disorder

Jones, Conture, & Walden, 2014; Ntourou, Conture, & Walden, 2013
Choi, Conture, Walden, Lambert, & Tumanova, 2013;
Ntourou, Oyler, & Conture, 2013; Eggers et al., 2010; Schwenk et al., 2007;
Karass et al., 2006; Anderson et al., 2003; Embrechts et al., 2000
Risk Factor Analysis

- Very High
- High
- Medium
- Low
- Very Low
Initial Contact Key Questions

Is there a family history of persisted stuttering?
What gender is your child?
When did the problem start?
How long has it been going on?
Can you describe the trend?
What is your child doing when he/she stutters?
Do you have any other concerns for your child?
Can you describe his/her temperament?
How are you-others feeling and reacting to this?
Case Example #1

• 27 months old boy; “extremely verbal”

• Started to exhibit some normal types of disfluency about one month ago

• “The last two days he can’t get a sentence out at all…he’ll start crying and say he can’t remember.”

• Mother called very distressed

• She and her husband “constantly talk to him” and feel his language skills are very advanced

• No history of stuttering in the family

• No other concerns with development; very sensitive

• It is “so sad and sudden and we don’t know what to do.”
Initial Contact Risk Factor Analysis

Case #1

Primary factors?
Secondary factors?
Other considerations?

Level of Risk:
Case Example #2

• 6 years, 0 months old; male
• Started to stutter at about 4 years of age
• Began with part word repetitions; prolongations have now emerged in last 2 months; he keeps on talking
• Mother feels he is aware of it; Peers have asked him why he talks the way he does
• Concerns regarding attention; level of intensity
• History of stuttering in the family-mother is not sure if he still stutters or not; paternal uncle
• Very bright child; 1st grade teacher notes he seems to be less talkative in class over the past month or so
• Did have speech therapy for phonological delay when he was 3-4 years of age; no speech since his 5th birthday
Initial Contact Risk Factor Analysis

Case #2

Primary factors?
Secondary factors?
Other considerations?

Level of Risk:
Case Example #3

- Age 3 years, 9 months; female
- Started to stutter around 2 ½
- Trend has been consistent (about a “4” across a 1-10 scale for frequency); As of one month ago, tension around some part word repetitions has emerged
- Father stutters; persisted (mother says she rarely sees it)
- Very easy going, happy child; no difficulty with transitions
- Seems to have trouble explaining things; uses multiple word and part word repetitions; “uhm and like” are “everywhere”
- Father highly concerned-feels it is his fault
- History of ear infections, allergies; no medications
Initial Contact Risk Factor Analysis

Case #3

Primary factors?
Secondary factors?
Other considerations?

Level of Risk:
Environment & Family

- **Essential to involve others** (Boey et al., 2009; Langevin et al., 2010; Bothe & Richardson, 2011; Mewherter, M., & Cincinnati Children's Hospital Medical Center. (2012). Cincinnati (OH): Cincinnati Children's Hospital Medical Center, (BES1t 137), 1-7.)

- **Environmental impacts** may impact exacerbate problem ((Anderson, Pellowski, Conture, & Kelly, 2003)

- **Sibling impacts** (Beilby et al., 2012)
Communicative competence and limited verbal participation; increase gesture use, abort attempts to convey a message, may withdraw from play (Langevin et al., 2009)

More than half of preschool children are aware of their stuttering and develop negative perceptions about their ability to communicate, which becomes increasingly apparent as age increases (Boey et al., 2009; Vanryckeghem, Brutten, & Hernandez, 2005)
### Clinical Actions

**Very Low to Low Risk at initial contact**

- Child usually very young (under or early 3’s)

- Decision often made by careful exploration of risk factors by phone contact or a consultation session (screening); video samples sent in by parent

- RTI option
RTI Red Flag

• Driven by Risk Factors (Low to Very Low)

• Allotted for a short period of time

• Accompanied by documentation
<table>
<thead>
<tr>
<th>Clinical Actions</th>
<th>Very Low to Low Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Provide educational resources &amp; create follow-up plan</strong></td>
<td>✓ Resources: stutteringhelp.org westutter.org</td>
</tr>
<tr>
<td></td>
<td>✓ Follow-up with caregiver should occur <em>no longer than</em> 3 months post initiation of plan, unless something shifts dramatically and a new plan is created sooner</td>
</tr>
<tr>
<td><strong>Clinical Actions</strong></td>
<td><strong>Very Low to Low Risk Factors</strong></td>
</tr>
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</tr>
<tr>
<td>2. Completion by Caregiver-Other: Perceptions of quantity of stuttering &amp; potential contributing factors</td>
<td>✓ Using a Rating Scale of (0-9; 0=no stuttering, 2=very little, 9=constant stuttering), a number is assigned each day based upon the quantity of stuttering observed</td>
</tr>
<tr>
<td></td>
<td>✓ Note any Child-Environmental factors that may have impacted the day</td>
</tr>
<tr>
<td></td>
<td>✓ Ratings are provided to SLP at end of each week</td>
</tr>
<tr>
<td>Clinical Actions</td>
<td>Very Low to Low Risk Factors</td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td></td>
<td>✓ Millard, Edwards, &amp; Cook (2009)</td>
</tr>
<tr>
<td></td>
<td>✓ Franken &amp; Putker-de Brujin (2007)</td>
</tr>
<tr>
<td></td>
<td>✓ Chmela (2005)</td>
</tr>
<tr>
<td></td>
<td>✓ Hill (2003)</td>
</tr>
<tr>
<td></td>
<td>✓ Starkweather &amp; Gotwald (1990)</td>
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</tbody>
</table>
Clinical Actions

- Very High
- High
- Medium
- Low
- Very Low
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<tr>
<th>Clinical Actions</th>
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</thead>
<tbody>
<tr>
<td><strong>Medium, High, to Very High Risk</strong></td>
</tr>
<tr>
<td>at initial contact</td>
</tr>
<tr>
<td>Proceed to a complete evaluation</td>
</tr>
<tr>
<td>Determine need-develop treatment and plan</td>
</tr>
</tbody>
</table>
Multifactorial Dynamic Pathways Theory

During the preschool years, rapid “changes in neurobehavioral systems are ongoing, and critical interactions among these systems likely play a major role in determining persistence of or recovery from stuttering.”
This theory motivates the clinical practitioner to “determine the specific factors that contribute to each child’s pathway to the diagnosis of stuttering and those most likely to promote recovery.”
The Big Picture

Child
- Motor
- Social Emotional
- Sensory
- Language
- Cognitive

Executive Functioning

Family

Environment
The Critical 8 Evaluation Components

- Standardized Fluency Measure
- Informal SLP Fluency Ratings
- Informal Parent-Other Fluency Ratings
- Detailed History
- Attitudes & Feelings
- Language Measures
- Other Measures
- Clinical Observations
Treatment Goal

• Establish pattern of normal fluency (presence of Other Disfluency within normal range; Ratings of stutter-like disfluency within the 1-2 range for consecutive period of 8 weeks)

• Treatment involves caregiver

• It is positive, and naturally reinforcing to the development of positive attitudes and feelings about communication; careful attention is paid to the child’s response and problems are solved as they arise
Follow Up

• Treatment *gradually* fades away

• Follow-up occurs for approximately 1 year
<table>
<thead>
<tr>
<th>Brief Overview of Clinical Actions</th>
<th>Child Enrolled in Stuttering Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLP provides education about therapy &amp; resources to caregiver-other</td>
<td>✓ One session per week (unless other warranted speech-language goals)</td>
</tr>
<tr>
<td></td>
<td>✓ Overview of what therapy entails</td>
</tr>
<tr>
<td></td>
<td>✓ Resources about early stuttering</td>
</tr>
</tbody>
</table>
## Brief Overview of Clinical Actions

### Child Enrolled in Stuttering Treatment

**SLP teaches CORE Therapy Element #1:**

1) **Daily Ratings of stuttering-observations of contributing factors**

- Using a Rating Scale of (1-10; 1=no stuttering, 2=very little, 10=constant stuttering), a number is assigned each day based upon the quantity of stuttering observed; note any Child-Environmental factors that may have impacted the day

- Ratings provided to SLP at end of each week; SLP makes own rating for each session; **Data Chart kept**
### Brief Overview of Clinical Actions

#### Child Enrolled in Stuttering Treatment

<table>
<thead>
<tr>
<th>SLP teaches caregiver-</th>
<th>Providing 3 kinds of Daily Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>other CORE Therapy Element #2</td>
<td>✓ Feedback A: Verbal Praise or Recognition of Smooth talking</td>
</tr>
<tr>
<td></td>
<td>✓ Feedback B: Request for Self-Evaluation</td>
</tr>
<tr>
<td></td>
<td>✓ Feedback C: Request for Self-Correction</td>
</tr>
<tr>
<td>SLP teaches caregiver-other</td>
<td>✓ Each session plotting of ratings from all parties, discussion of child’s response to feedback; contributing factors for the week</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>CORE Therapy Element #3</strong></td>
<td>✓ Gradual introduction of Interactive Communicative Behaviors as natural, warranted, and appropriately timed</td>
</tr>
<tr>
<td><strong>Problem Solving &amp; Parent Modeling</strong></td>
<td>✓ Ongoing support of overall development</td>
</tr>
</tbody>
</table>

Evaluation and Case Review # 1

• Female M, age 5-1; biological 2 parent family, one brother age 7-6; father stutters and has persisted-but only occasionally according to mother’s reports; one male cousin on maternal side has ADHD; familial environment reported somewhat hectic, fast paced communicators, frequent relatives visiting overnight; frequent sibling competition for talking;

• Pediatrician told parents it would resolve over past years; parents chose to get help at this point; more trouble noticed when storytelling-more complex ideas

• Medical history negative; seasonal allergies with no medication; cognitive and developmental milestone’s within normal limits; easy, gentle temperament
• Stuttering onset 2 years, 11 months; cyclical but never completely abated; frequency and severity have markedly increased over past 6 months; prolongations of 6-10 seconds with pitch and loudness rise; multiple part word, rapid repetitions; M has verbalized about “not being able to talk;” sometimes when M is “caught up she just walks away”

• Pre-K teacher concerned-reduced verbal output compared to her peers; no other concerns

• TOCS: Moderate to Severe Range of Stuttering; PPVT-4: 125 Standard Score; EVT-2: 103 Standard Score; CELF-P scores within average to high average, no significant discrepancies; TNL: 86 Narrative Language Index
Evaluation and Case Review #2

• **Male, age 4-2;** biological 2 parent family; 3 male siblings, ages 6, 8, 10); no history of stuttering in family; maternal nephew (age 20) dx Autism Spectrum Disorder; structured and consistent routines; high competition for talking; parents very face paced communicators

• Medical history revealed late talker; motor milestones WNL; frequent ear infections reported until about 3 ½ years of age

• Stuttering onset 3-10; severe blocks with increases in loudness; facial tension and arm movements used to get words out;
• frequent Other Disfluencies ("uhm uhm uhm uhm") up to 20 repetitions at start of some phrases; pattern consistent since onset, with ratings of 4-7 in frequency over past few weeks

• Parents felt no awareness or concern from child; he keeps on talking; increases when routine changes; lack of sleep

• Difficulty falling asleep; mother reports he often has “tricky days with big meltdowns”

• School screening indicated no stuttering and recommended follow up in 3 months; follow up at school - no stuttering observed; pediatrician (4 year old check-up) recommended speech evaluation;
• Preschool teacher notes trouble transitioning between activities & high verbal output within the class setting

• *PPVT-4:* 105 Standard Score; *EVT-2:* 100 Standard Score; *CELF-P:* Core Language 98; no discrepancies across subtests; develop artic errors

• Temperament noted as less rhythmic, lower threshold with intense reactivity; slightly more negative in mood, distractible; approaches quickly ("seems fearless")
Evaluation and Case Review # 3

- Female age 2-9; biological 2 parent family; sister age 2 months; onset of stuttering at 2-5; Unremarkable birth, medical, developmental history; Daycare program 3 full days per week; naps at program

- No history of stuttering; mother (anxiety and depression; father depression & ADHD); family recently relocated prior to birth of second child; routine structured and consistent; transitions hurried and stressful; dad reports “giving in to her” when she is upset; mom says “painful to watch and hear the stuttering, but I try and hide my emotions from her”

- SLD at onset multiple repetitions (part word and whole word); since onset increased to more effort
• Some prolongations 2-5 seconds with pitch rise; frequency continues to be variable; at present SLD moderate to severe; increased stuttering with excitement or “fighting for the floor;” she keeps on talking no matter what

• At onset, child verbalized frustration at not being able to “get words out” but has not said anything since; very verbal; daycare teacher sees stuttering during transitions (drop off) and when frustrated (ex: not wanting to share with a peer)

• Developmental Indicators for the Assessment of Learning (DIAL-4): WNL; other S/L areas WNL

• Moderate level of withdrawal; lower threshold; mild intensity of reactions; more adaptable
5 Essential Clinical Skills for early stuttering treatment
5 Essential Clinical Skills

1. Making Daily Ratings

2. Teaching **Verbal Feedback A**: Praise or Notice Smooth Talking

3. Teaching **Verbal Feedback B**: Request for Self-Evaluation of Smooth Talking

4. Teaching **Verbal Feedback C**: Request for Retry of Stuttering

5. **Problem Solving & Parent Modeling**
Clinical Skill 1: Making Daily Ratings

- Discuss Other Disfluencies (OD) vs. Stutter-Like Disfluencies (SLD)

- Discuss Rating Scale (1-10) used for various aspects of communicative behavior: 1=no observation, 2=very little observation, and 10=constant observation

- Clinician and caregiver each make rating of SLD at end of session and compare results
Making Daily Ratings

- Caregiver is assigned to make a rating at the end of each day using the (1-10) scale. “At the end of the day, how much SLD did you hear?”

- Ratings are collected every week & plotted on data chart
Troubleshooting

- Feeling bad rating higher
- Not doing it
- Not bringing it
- Differentiating between OD and SLD
- Rating severity of “moment” verses daily quantity
Clinical Skill #2: Teaching Verbal Feedback A
PRAISE or NOTICE Smooth Talking

- Explain Verbal Feedback A to caregiver
- Demonstrate how to administer Feedback A during short activity with natural interaction; reduce language demand if needed in order to facilitate smooth speech to provide this contingency
- Allow the caregiver to ask questions about Feedback A
Have caregiver try and administer 5-10 of Feedback A on his or her own in session

Assign Daily Special Time for 10 minutes with administration of about (a handful, 5-6 or so) of Feedback A (Praise/Notice) only during the special time.
Troubleshooting

- What to say
- How to say it
- When to have special time
- What to do during special time
- Dealing with the child’s response
Clinical Skill #3: Teaching Verbal Feedback B
REQUEST a SELF-EVALUATION of Smooth Talking

- Explain Verbal Feedback B to caregiver

- Demonstrate how to administer feedback $A + B$ together, or $A$ (four times), followed by $B$ (one time)

  \[A+A+A+A+B = \text{One set of Feedback}\]

- Allow the caregiver to ask questions about providing A and B Feedback together
Have caregiver try and administer 1\textsuperscript{st} and 2\textsuperscript{nd} types on his or her own in session

Observe child’s response and problem solve if warranted

Assign combination of both types during Daily Special Time
Troubleshooting

- What to say
- How to get child’s attention
- What to do when you get no response
- What to do if the response is not correct
Clinical Skill #4: Teaching Verbal Feedback C
REQUEST a ReTry

- Explain Verbal Feedback C to caregiver

- Demonstrate how to administer Feedback C

- Review how Feedback C is combined with A + B:

  4 (Praise-Notice) + 1 (Request for Self-Evaluation) +1 (Request for Retry) = 1 SET of Feedback or Contingencies
Verbal Feedback C: REQUEST a RETRY

- Allow the caregiver to ask questions about 3rd type

- Have caregiver try and administer 1-2 full sets during session

- Continue Daily Special Time; have caregiver administer 2 Full Sets during that time, and another set any other time of day.
Troubleshooting

- What to say
- How to get child’s attention
- When to administer it
- Dealing with the child’s response
Parent Problem Solving & Modeling

RESTART-DCM Applications

- Reducing demands & enhancing capacities
- Parent Modeling of typical fluency enhancing behaviors
- Reinforcement for child
- Clinical Modeling

Gradual Dismissal Transition

- 13-16 sessions approximately (some children take much longer; some continue to persist)

- Criteria:
  - Caregiver daily ratings for 6-8 weeks of 1s and 2s, (several periods of 1s in a row)
  - Similar clinical observations; no other speech-language goals or concerns

- Gradually reduce therapy sessions (over the course of 1 year)

During the Transition Period, caregivers continue engaging in behaviors conducive to healthy communication development, providing verbal contingencies, and making daily ratings. Administration of contingencies gradually fades away as the caregiver is comfortable.
Troubleshooting

- When to introduce
- How to highlight it
- How to integrate it into work with feedback
Key Elements:
working with young children who stutter
Recommended Books:

How to Talk So Little Kids Will Listen: A Survival Guide to Life with Children Ages 2-7 (Faber & King, 2017)

The Whole Brain Child (Daniel Siegel)
• How do I know that?
• What does that look like?
• Am I/are we making an assumption?
• Is that an observation or a judgment?
Selected References and Resources


- **Stuttering Foundation**: stutteringhelp.org; 1-800-992-9392
- **American Board of Fluency and Fluency Disorders**: stutteringspecialists.org
- **The Stuttering Home Page**: www.stutteringhomepage.com
- **The National Stuttering Association** (nsa.org); **Friends Who Stutter**: (friendswhostutter.org); **SAY**: Stuttering Association for the Young (say.org)