

# The Lidcombe Program Treatment Guide



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## OVERVIEW

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### Professional issues

#### *Qualified practitioners*

The Lidcombe Program is administered only by speech pathologists, who are known by various terms including, but not limited to, speech pathologist (Australia), speech-language pathologist (North America), speech and language therapist (United Kingdom), Logopäd (Germany), orthophoniste (France), logopædagog (Denmark) and logopedist (Netherlands). In this guide the generic term clinician is used. The Lidcombe Program is endorsed by the professional associations of several countries.<sup>1,2,3</sup>

#### *An important note*

It is essential that a professionally qualified clinician trains, guides, and supervises parents during the Lidcombe Program. Neither this guide, nor any other written material about the treatment, can replace professional Lidcombe Program training. The treatment is not designed for administration by parents independently of clinicians. This guide is intended as a reference tool for use by clinicians and parents during treatment.

#### *The Lidcombe Program Trainers Consortium*

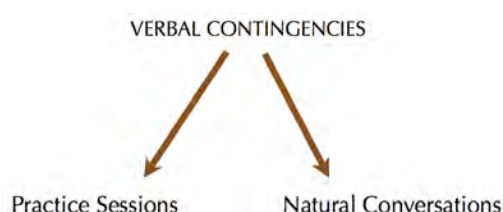
Postgraduate clinician training is available from The Lidcombe Program Trainers Consortium.<sup>4</sup> The Consortium has members in 13 countries and provides training in other countries as well. That training usually involves two days of instruction and demonstration, often with subsequent follow-up.

### A behavioural treatment

The Lidcombe Program is a behavioural treatment, which targets children's stuttered speech. During the Lidcombe Program children are not instructed to change their customary speech pattern in any way. Parents do not alter their customary speech pattern or speech and language habits in any way, nor do they change the family lifestyle in any way, apart from presenting verbal contingencies as described in this guide. Parents, or sometimes caregivers, deliver Lidcombe Program treatment with the continuing training and supervision of a qualified clinician.

### Parents give verbal response contingent stimulation

The term "parent verbal contingencies" refers to when parents comment after a child stutters or does not stutter. Parents provide verbal contingencies to their child during practice sessions and during natural conversations.



## Measuring stuttering

Regular measurement of children's stuttering severity occurs during the Lidcombe Program with a Severity Rating (SR) scale: 0 = *no stuttering*, 1 = *extremely mild stuttering*, and 9 = *extremely severe stuttering*.<sup>†</sup> Parents and clinicians use the SR scale during the Lidcombe Program.

## Parents visit the clinic each week

During each weekly visit, for 45–60 minutes, the clinician teaches the parent how to do the treatment and ensures that it is being done properly. A later part of this treatment guide specifies what occurs during each clinic visit, and in what order.

## Treatment goals during Stage 1 and Stage 2

The Lidcombe Program treatment goal during Stage 1 is for the child to speak with no stuttering or almost no stuttering, and the goal of Stage 2 is for no stuttering or almost no stuttering to be sustained for a long time.

## Resource materials

At the [Lidcombe Program Trainers Consortium website](#),<sup>5</sup> and at the Resources page of the [Australian Stuttering Research Centre](#),<sup>6</sup> there is a downloadable SR chart (*Child Stuttering Severity Chart eForm*) for parents and clinicians, and a downloadable pamphlet about the treatment for parents, in several languages. A checklist of reflective clinical questions is available which clinicians can use to verify that they are doing the treatment as specified in this guide.<sup>8</sup> The SR chart and the checklist are reproduced at the Appendices of this guide.

# MEASUREMENT

## The severity rating scale

### *Purposes of severity ratings*

Severity ratings (SRs) are used to measure children's stuttering in and outside the clinic. The simplicity of SRs makes them a quick and effective way for clinicians and parents to communicate to each other about children's stuttering severity. They enable progress toward the Lidcombe Program treatment goals to be evaluated constantly. If progress is not satisfactory, then SR scores will alert the clinician and the problem can be resolved. Such problem solving, and subsequent decision making, is a routine part of the Lidcombe Program, and much of it centres on SRs. It is useful if clinicians explain the importance of SRs during the first clinic visit and reiterate this throughout the course of Lidcombe Program treatment.

Finally, SRs give parents and clinicians a way to plan the presentation of parent verbal contingencies. For example, they may wish to target occasions when stuttering is severe to implement verbal contingencies, and on other occasions they may wish to target situations where stuttering is mild.

### *Treatment goals specified with SR scores*

Parents assign a SR to the child's speech each day, and clinicians assign a SR during each clinic visit. Lidcombe Program treatment goals are based on those SR scores (see "Treatment goals for Stage 2," page 10).

### *A flexible measurement*

Severity ratings are a flexible way to measure stuttering severity. Each day parents record SRs for the whole day to reflect children's typical speech for the day. Parents often do not hear their children

<sup>†</sup> Prior to 2015 the Lidcombe Program used a 1–10 scale, and publications before then will contain that version of it.

speaking all day, for example when they are at pre-school or childcare. In such cases, parents assign SRs based only on the speech they hear during the day.

Variations of the SR procedure can be used if the clinician thinks it would be useful, commonly one SR for the morning and one for the afternoon. Clinicians may wish parents to use supplementary SRs for a particular speaking situation that occurs each day, such as dinner, bath time, and shopping. These are recorded in addition to the daily SRs. Other options are for parents to record a highest and lowest SR for each day.

#### *Accurate parent severity ratings are essential*

Research shows that parents typically are able to assign SRs accurately<sup>9</sup> and that parents have close agreement with clinicians.<sup>10,11</sup> It is essential for clinicians to ensure that this occurs. If parents underestimate a child's stuttering SRs, it can result in the child being admitted to Stage 2 prematurely. In an alternative situation, where parent SRs are too high, children will take longer to complete Stage 1 than necessary.

#### *Web based severity ratings*

It is not necessary for parents to bring hand-written, hard copy SRs each week to the clinic. A disadvantage of that procedure is that clinicians cannot monitor for whether parents are following their instructions properly and recording a score at the end of each day. Sometimes, parents are not compliant with that instruction and will wait a few days to record scores. This problem can be avoided, along with the need for hard copy, by using a downloadable clinical SR chart for parents and clinicians (*Child Stuttering Severity Chart eForm*).<sup>6</sup>

Another option is for parents to send SRs to the clinician using a phone at regular intervals, such as daily or every few days. Another option is for parents to send photos of the SR form to the clinician, either throughout the week or prior to each clinic visit. These options can be used also for clinicians to obtain SRs on occasions when parents are unable to attend a clinic visit.

#### *Parent SR training*

The parent is trained to use SRs during the first clinic visit. Training begins when the clinician explains the scale. The clinician's judgement, based on clinical experience, is used as the yardstick for SR scores. Acceptable agreement is when the parent SR is within one scale value of, or identical to, the clinician SR. It is desirable, however, during the later stages of Lidcombe Program treatment for parent and clinician SR scores to be identical. This is because, during those later stages of treatment, children's severity will be at the lower end of the severity range, and there will be less margin for error for clinical use of the scale. This is discussed later (see Stage 2, p. 10).

During the first clinic visit, after the clinician has explained the SR scale, the parent or the clinician, or both, converse with the child for a few minutes until the child displays a reasonably representative amount of stuttering. After a few minutes the clinician asks the parent to assign a SR to the speech sample. The clinician indicates whether that is an appropriate score and, if necessary, suggests a different score. All subsequent clinic visits begin with the parent conversing with the child, the parent assigning a SR score, and the clinician either confirming that the score is appropriate or providing corrective feedback.

Another more time efficient and valid speech sampling method is for parents to audio (or even video) record the child during one or more conversations of everyday life, and for the clinician and parent to listen to the recording and consider a SR score at the start of the clinic visit. That method has the advantage of being able to scan quickly through a long and representative set of recordings of the child's speech.

Parent training methods can include scoring SRs from recorded or real-time speech samples, practice with identifying numbers of stuttering moments, and discussion of types of stuttering moments. One taxonomy of stuttering moments<sup>13,14</sup> uses three prime categories—repeated movements, fixed postures, extraneous behaviours—and seven subcategories to describe types of stuttering moments. Discussion of the types of stuttering moments for the child's speech is a useful part of a clinic visit, because clinical improvement reflected with reducing SR scores often is accompanied by changing types of stuttering moments.

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## PARENT VERBAL CONTINGENCIES

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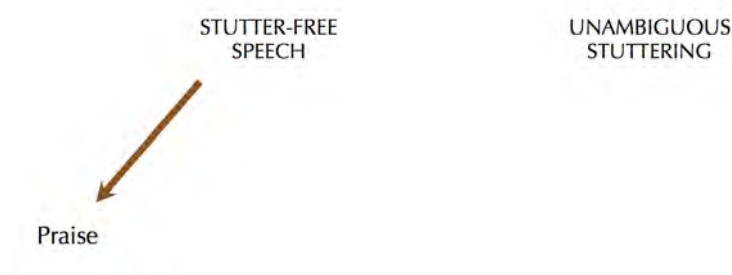
There are five Lidcombe Program verbal contingencies. Three of the verbal contingencies are for stutter-free speech, and two are for moments of unambiguous stuttering.

### Verbal contingencies for stutter-free speech

Verbal contingencies for stutter-free speech are central to the Lidcombe Program because, above all else, children must enjoy the treatment. Therefore, parent verbal contingencies for stutter-free speech need to be inherently positive, supportive and enjoyable.

#### *Praise*

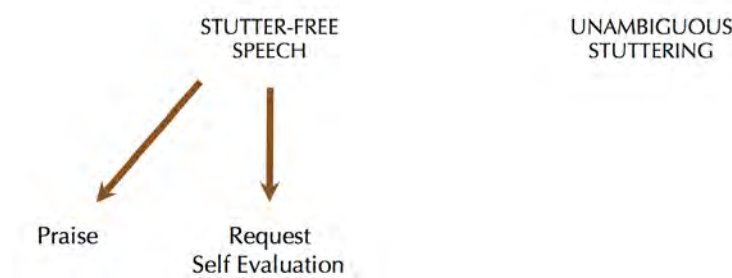
The first parent verbal contingency for stutter-free speech is *praise*.



Simply, clinicians teach parents to praise their children for stutter free speech. Parents can be taught to say things such as “that was lovely smooth talking,” or “good talking, no bumps.” It is essential for parents to do this in their own way. Every parent has a different style and different children like to be praised in different ways. Clinicians also need to be sure that parents are genuine with their praise and don’t overdo it to the point that it ceases to be enjoyable for the child.

#### *Request for self evaluation*

The second parent verbal contingency for stutter-free speech is *request self evaluation*.



This verbal contingency can be used when a child does not stutter for a certain time interval. This can be as brief as a single utterance or as long as several hours. When no stuttering occurs during this time, the parent can ask the child to evaluate speech. The parent could say something like “was that smooth?” and expect the response “yes,” or “were there any bumps there?” and expect the response “no.” This verbal contingency is used only for stutter-free speech, and not for stuttering.

#### *Acknowledge*

The third verbal contingency for stutter-free speech is *acknowledge*.



The difference between this and the previous two verbal contingencies is that it does not evaluate the child’s speech in any way. Acknowledging stutter free speech is different from praise for stutter-free speech because it is a matter-of-fact statement rather than a positive comment. Examples would include “that was smooth” and “no bumpy words.” It is also different from *praise* and *request self evaluation* because it can be used in a brief manner that does not disrupt the flow of a conversation. From that perspective it has clinical value.

**Verbal contingencies for unambiguous stuttering**

These need to be introduced carefully because some children can initially respond negatively to them. They are used much less frequently than verbal contingencies for stutter-free speech. In other words, most of the verbal contingencies that children receive during the Lidcombe Program are for stutter-free speech. As is the case with verbal contingencies for stutter-free speech, every parent has a different style with their child, and different children will need to receive verbal contingencies for stuttering in different ways.

*Acknowledge*

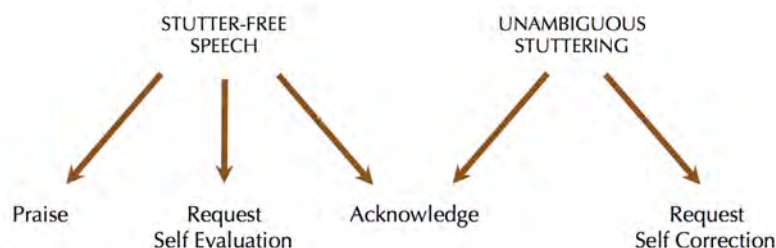
The first verbal contingency for unambiguous stuttering is *acknowledge*.



As with the verbal contingency *acknowledge* stutter-free speech, this verbal contingency is not at all evaluative. The parent just notes that stuttering has occurred and moves on, saying something like “that was bumpy” or “that was a stuck word.” As is the case with *acknowledge* used for stutter-free speech, it has clinical value because it can be used in a brief manner that does not disrupt the flow of a conversation.

*Request self-correction*

The second verbal contingency for unambiguous stuttering is *request self correction*.



Here the parent asks the child to say the utterance again without the stuttering moment. Mostly the child can do that, but if the child fails to do so, it is usually best for the parent not to persist. If a child reacts in any way negatively to requests for self correction, then it is essential that they be stopped immediately and the matter is discussed and resolved with the clinician.

Examples of requests for self correction would be “can you say it again?”, “can you say that smoothly?”, or “can you say that without the bump?” Request for self correction occurs occasionally. The exception to that rule is that when the child only has a few stuttering moments each day, which occurs toward the end of Stage 1. At that time it might be appropriate for the clinician to direct a parent to request self correction for all stuttering moments.

### Optional parent verbal contingencies

The Lidcombe Program has two additional verbal contingencies that parents can use but which are optional.

#### *Praise for spontaneous self evaluation of stutter-free speech*

The first of these is *praise for spontaneous self evaluation of stutter-free speech*. Older pre-school children receiving the Lidcombe Program will sometimes spontaneously self-evaluate their speech as stutter-free, saying something like “I did smooth talking.” In which case a parent may say something like “great, you’re noticing your smooth talking.”

The parent needs to be sure that the praise is for self evaluation of stutter-free speech, not praise for stutter-free speech. Parents need to understand the subtle difference between the two. In the previous example, “great, you’re noticing your smooth talking” is praise for self evaluation of stutter-free speech, and “great, that was smooth talking” is praise for stutter-free speech.

It is probably not useful to praise spontaneous self evaluation of stuttered speech, such as “I just did a bump.” The reason for this is that it might confuse a child if parent praise follows a moment of stuttering. If a child does spontaneously self evaluate stuttering, parents can note that it occurred and tell the clinician at the next clinic visit. Naturally, this may be a desirable thing to be happening and therefore may be a sign that the Lidcombe Program treatment process is working well.

#### *Praise for spontaneous self correction.*

The second optional verbal contingency is *praise for spontaneous self correction*. When children correct stuttered utterances without being asked by a parent to do so, the parent can offer praise. Again, older pre-school children are those most likely to do this. The verbal contingencies that parents might use here include “great job, you fixed that bumpy word all by yourself,” and “you fixed that stuck word, well done.”

### Examples of parent verbal contingencies

The table contains examples of some of the ways that parents can provide verbal contingencies.

<i>STUTTER-FREE SPEECH</i>	
<i>Praise</i>	<p>“Wow, that was so smooth!”</p> <p>“Fantastic smooth talking.”</p> <p>“I’m loving your smooth speech.”</p> <p>“That was so super-smooth.”</p>
<i>Request self evaluation</i>	<p>“Was that smooth?”</p> <p>“Were there any bumps there?”</p> <p>“Did you say that smoothly?”</p>
<i>Acknowledge</i>	<p>“Smooth talking”</p> <p>“That was smooth.”</p> <p>“Smooth again.”</p>

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 UNAMBIGUOUS STUTTERING
 

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Acknowledge	<p>“A little bump then.”</p> <p>“That was a bit bumpy.”</p> <p>“That was a stuck word.”</p>
Request self correction	<p>“Can you try that again?”</p> <p>“Can you say [stuttered word] smoothly?”</p> <p>“See if you can say that without the bump.”</p>

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### Some essential things about parent verbal contingencies

#### *Teach verbal contingencies for stutter-free speech first*

Clinicians don't teach parents how to do the verbal contingencies all at once. Normally, they first teach parents to do verbal contingencies for stutter-free speech so that children can become comfortable with the treatment. Then, they implement the parent verbal contingencies for stuttered speech with children when they are sure they are ready for it. It makes clinical sense to introduce verbal contingencies for stutter-free speech before verbal contingencies for stuttering, because the former are inherently positive.

#### *Be sure parents are using them correctly*

Clinicians need to be sure that parents are using verbal contingencies correctly according to their instructions. At each clinic visit, parents demonstrate how they have been doing the verbal contingencies with the child during the previous week, and the clinician gives them feedback. Parents may audio or video record examples of themselves providing verbal contingencies during practice sessions and play them to the clinician during the clinic visit. The clinician could also watch parents providing verbal contingencies in the clinic. In either event, the clinician gives constructive feedback, and then watches parents give verbal contingencies as they take account of that feedback. Parents delivering contingencies incorrectly is a common reason that children do not progress as expected through Stage 1. This problem can persist and undermine the treatment process if the clinician does not detect it by direct observation of parents.

#### *They are for unambiguous stuttering moments*

Lidcombe Program verbal contingencies for stuttering are for unambiguous stuttering moments. If parents have any doubt about whether a disfluency is actually a stutter, then they do not use a verbal contingency. At the start of the program, children typically will have many unambiguous stuttering moments each day, and parents will have plenty of them to work with. Giving verbal contingencies for ambiguous disfluencies normally only becomes an issue at the end of Stage 1, when children have SR 0–1; that is, when there is no stuttering or there is only extremely mild stuttering during most days.

#### *They are a positive experience for the child*

All verbal contingencies, whether for stutter-free or stuttered speech, must be a positive experience for the child. They must not be constant, intensive, or invasive. It is essential to identify when they are not a positive experience, or even better, to anticipate when this might occur and prevent it. For some parents, it is necessary to introduce the verbal contingencies slowly and carefully in order to be sure that the child is receiving supportive and enjoyable verbal contingencies. Otherwise, during clinic visits it will be obvious that the child is not happy with the treatment. The child needs to experience the verbal contingencies as enjoyable and sincere. It is a rule of thumb that there should be far more verbal contingencies for stutter-free speech than for stuttered speech.

*Have parents give as many of them as are needed*

There is no standard number of verbal contingencies each day that is known to ensure success for all children. All that is known from laboratory research is that verbal contingencies can control stuttering and that clinical trials show that the Lidcombe Program, which contains parent verbal contingencies, is an efficacious treatment. The parent and clinician need to establish how many verbal contingencies are suitable for the individual child. This is a clinical variable that could be targeted for change in the event that the child does not show signs of improvement. Verbal contingencies should be given as frequently as the child is happy to receive them, without being a burden to the parent. As a rule of thumb, though, verbal contingencies during natural conversations would occur no fewer than several times each hour that the parent is with the child.

*They are accurate*

It is essential that the clinician is satisfied that parents, before they attempt to use verbal contingencies, can present them accurately in the clinic with the clinician. The clinician needs to be sure that parents can distinguish between unambiguous stuttering moments and stutter-free speech. It is also essential that parents are able to present verbal contingencies immediately after periods of stutter-free speech and stuttering moments. Delayed and inaccurate verbal contingencies are unlikely to be effective. At each clinic visit the clinician needs to observe, either during clinic real time or on recordings, parents providing immediate and accurate verbal contingencies.

**Verbal contingencies during practice sessions***What they are*

Using verbal contingencies during practice sessions allows the parent to learn how to use verbal contingencies safely and correctly in a positive way. This positive manner is particularly important when children have experienced negative social reactions about their stuttering. The practice sessions also allow the clinician and parent to determine the child's optimal response rate of speaking without stuttering. In other words, the desired behavioural response of stutter-free speech should predominate during practice sessions; however, allowing limited stuttering to occur allows parents to learn how to use verbal contingencies for stuttered speech. In order to keep the practice sessions a positive experience for the child, stuttering moments should occur only occasionally during a practice session.

*Maximising stutter-free speech*

There is research evidence that the chance of a stuttering moment increases with increased syntactic complexity and utterance length<sup>15,16</sup> and those findings have been replicated with children.<sup>17,18,19,20,21,22,23,24,25,26</sup> Clinicians can use that information to teach parents to alter the likelihood of stuttering moments occurring during practice sessions. Parents can do that by giving children options of conversing with a range of utterance durations with differing syntactic complexities: from one and two word responses to several utterances. Clinicians make those management decisions based on the child's stuttering severity at the time of the activity.

Methods to reduce stuttering during practice sessions may include turn taking, word imitation, sentence completion, closed questioning, and binary choice questions. The length and complexity of a child's utterances may also be influenced by the extent to which the topic is real or imagined. Examples of "real" topics are books and toys that the child is playing with; examples of imagined topics are those that occur during pretend play or when discussing a future event. Clinicians teach parents how to change these variables to ensure that only occasional stutters occur during practice sessions.

The choice of activity for each practice session requires careful consideration. Some toys or activities may be inherently exciting for a child and consequently may increase the chance of stuttering. In order to maximise stutter-free speech with such children, early in Stage 1, or when SR is higher, some toys and activities may need to be chosen so that they are less stimulating.

The fundamental task for the parent during practice sessions is to constantly use the methods described above to ensure that stutter-free speech is maximised. It is essential that the parent changes the methods and the way they are used during practice sessions: practice sessions are not all the same throughout. The aim is for children to be predominantly stutter-free during the practice session, but at the same time have them produce the most complex speech that they are capable of producing.



Clinicians find that the following situations during practice sessions can be challenging:

- Stuttering is severe
- Children talk about abstract or imaginative topics in detail and at length
- Parents are uncomfortable leading conversations with their children
- Children do not comply with a turn-taking format
- Children quickly become bored with each activity

These situations require the clinician to discuss and problem solve with parents to find solutions.

#### *How often practice sessions occur*

The clinician teaches the parent to do a practice session usually once, or sometimes twice, per day. Practice sessions usually last for 10–15 minutes. In some rare cases, though, it may suit some children to have shorter practice sessions if that works better for them. In such cases, the clinician may feel that more than one or two a day will be useful.

The parent typically sits with the child at a table or on the floor in a quiet place, with suitable activities such as books and games. Such activities are not essential, and treatment during practice sessions can be done in many situations, such as meal preparation, bath time, and shopping. However, in many cases—perhaps most—the formality of sitting at a table or on the floor at home is useful for the treatment to be done optimally. This allows parents to focus on, and monitor, the child's speech with fewer distractions.

Verbal contingencies for stutter-free speech during practice sessions can be supplemented with nonverbal contingencies if the clinician thinks that they would be helpful. Examples would be stickers, stamps, ticks on a page, and blocks. Those nonverbal contingencies are not useable during everyday conversations, but nonverbal contingencies such as gestures are: high-fives, fist-pumps, thumbs-ups, and nods. As such, it makes clinical sense to use them, if they are suitable for the child, as alternatives or supplements to verbal contingencies during everyday conversations as well as during practice sessions. Normally, nonverbal contingencies do not replace verbal contingencies but only supplement them, unless there is a sound clinical reason to do so. One situation where it might be appropriate is during the latter portions of Stage 2.

### **Verbal contingencies during natural conversations**

#### *What they are*

The fundamental premise of the Lidcombe Program is that parent verbal contingencies are the active treatment agent for eliminating or greatly reducing stuttering. So, when the clinician feels it to be appropriate, it is logical for those parent verbal contingencies to occur during natural conversations with children. Unlike practice sessions, the natural conversations of everyday childhood life are never modified to optimise the occurrence of stutter-free speech. Instead, parents take advantage of naturally occurring periods of reduced stuttering severity during each day to present verbal contingencies.

Examples of natural conversations with children, during which parents typically give verbal contingencies, are food preparation, meal times, in the bath, on the way to pre-school, in the park, and shopping. As with verbal contingencies during practice sessions, they can be supplemented with nonverbal contingencies if the clinician thinks that they would be helpful.

#### *When they are introduced*

Verbal contingencies during natural conversations are introduced when the clinician observes that the parent is consistently giving verbal contingencies safely and correctly during practice sessions. Usually, at that time, the child's SRs will be showing improvement.

#### *The transition between treatment during practice sessions and natural conversations*

For a period, parents provide treatment during practice sessions, and during natural conversations. Eventually, treatment during natural conversations replaces treatment during practice sessions, and treatment during practice sessions does not occur at all. The clinician may decide that this transition should not be completed until as late as some time during Stage 2.

This transition is a flexible process. During the period when parents are providing verbal contingencies during practice sessions and natural conversations, the clinician may recommend several changes to the

number and duration of practice sessions. An example would be changing from one practice session each day to one each second day. Similarly, during the period when parents are providing verbal contingencies during practice sessions and natural conversations, the clinician may direct many changes to the number and type of verbal contingencies that parents give during natural conversations.

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## STAGE 2

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### The purpose of Stage 2

There are two purposes of Stage 2. The first is to systematically hand over complete responsibility for management of children's stuttering to their parents. Second, Stage 2 is designed to maintain the absence or low level of stuttering that was attained during Stage 1. Relapse after successful Lidcombe Program treatment can occur.<sup>48</sup> Half the children in that report showed some transient signs of stuttering a mean of 5 years after they began Stage 1.

### Systematic withdrawal of verbal contingencies

During Stage 2, the parent progressively withdraws verbal contingences during natural conversations, providing that it can be done without stuttering increasing. The clinician makes suggestions for the timing of the withdrawal of contingencies. Suggestions are based on the child's SRs and discussion with the parent.

### Treatment goals for Stage 2

To progress to Stage 2 the following two criteria need to be met for three consecutive clinic visits that are 1 week apart: [1] parent SRs of 0–1 during the week preceding the clinic visit with at least four of those seven SRs being 0, [2] clinician SRs of 0–1 during the clinic visit. A minimal requirement during Stage 2 is for parents to record SRs only during the week preceding the clinic visit. However, the clinician may direct parents to record SRs more often during Stage 2.

### Performance contingent maintenance

The performance contingent maintenance schedule applied to stuttering treatment, and its potential benefits, have been documented.<sup>27</sup> Performance contingent maintenance means that the parent and child return to the clinic and are required to maintain treatment targets for increasingly longer intervals; two visits 2 weeks apart, then two visits 4 weeks apart, then two visits 8 weeks apart and, finally, one or two visits 16 weeks apart. The schedule normally takes a year or more. The importance of performance contingent maintenance is shown by a report that half of children during Stage 2 fail to meet treatment targets at least once during Stage 2.<sup>28</sup>

Ideally, in the case of early signs of relapse during Stage 2 clinic visits, parents will be able to restore SRs to the target 0–1 range, as described above (see "Treatment goals for Stage 2"), by resuming treatment during practice sessions and/or increasing the rate of verbal contingencies. In the event that such attempts to restore SRs to the target 0–1 range are not successful, parents are to contact the clinician for advice prior to the next scheduled Stage 2 clinic visit.

### A common Stage 2 problem

When children complete Stage 1 and there is no stuttering or nearly no stuttering, parents or clinicians, or both, can become complacent and not follow through with the prescribed Stage 2 maintenance program. This creates a serious risk that relapse will occur. It is essential that verbal contingencies for stutter-free speech continue to occur during Stage 2, and that any unambiguous stuttering moments that occur receive verbal contingencies from parents. The authors of a long-term clinical follow-up<sup>48</sup> suggested that clinicians encourage parents to watch and listen carefully for any signs of post-treatment stuttering during and after completion of Stage 2

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## LIDCOMBE PROGRAM CLINIC VISITS

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### Stage 1 clinic visits

During Stage 1 the parent and child visit the clinic once each week. Clinic visits are normally 45–50 minutes. The following events normally occur during a clinic visit in the following sequence.

#### [1] *Child conversation*

The parent or the clinician, or both, converse with the child until the extent of stuttering, if any, is apparent. Alternatively, the parent and clinician listen to a recording or a selection of recordings of the child conversing during everyday life. The clinician records a SR.<sup>†</sup>

#### [2] *Check parent SR*

The clinician checks the parent's use of the SR scale using procedures outlined previously (see "Parent SR training," page 3).

#### [3] *Discussion of progress during the previous week*

The clinician uses SR scores for each day of the previous week to focus an in-depth discussion of severity and treatment responsiveness during the previous week. Discussion topics normally include the following:

- When practice sessions were planned, did they occur as planned, and how often and for how long?
- With verbal contingencies during practice sessions, how was the required low stuttering severity achieved?
- How frequently did the parent give verbal contingencies during natural conversations?
- What verbal contingencies were used during practice sessions and/or natural conversations?
- What periods during the day did the practice sessions occur?
- What were the child and parent doing at the time of verbal contingencies during natural conversations?
- Where did the verbal contingencies during natural conversations occur?
- How long were the natural conversations in which verbal contingencies occurred?
- How much was the child speaking during these conversations?
- Does the parent think anything did or did not work particularly well during the week?

The following issues commonly emerge:

- The child's stuttering was too severe during practice sessions because they were not structured optimally
- The parent did not present verbal contingencies during practice sessions each day as planned
- The parent did not present verbal contingencies during natural conversations each day as planned

#### [4] *Parent demonstrates a practice session*

The parent demonstrates to the clinician how verbal contingencies were conducted during the previous week, as planned during the previous clinic visit. Alternatively, the clinician and parent listen to a

<sup>†</sup> Some clinicians find it helpful to record a percentage syllables stuttered score at this time.

recording of verbal contingencies delivered to the child during the week. When clinicians observe a practice session either in the clinic or on a recording, they check for the following:

- The child is enjoying the practice session
- The parent accurately identifies stutter-free and stuttered speech
- The practice session is structured adequately to attain low stuttering severity
- The practice session is structured optimally
- The verbal contingencies are appropriate for the child
- Most verbal contingencies are for stutter-free speech
- The verbal contingencies are varied

*[5] Parent and clinician discuss the verbal contingencies demonstrated by the parent*

The clinician determines the extent to which the practice session demonstration, or the recording of the practice session, accurately represents procedures recommended during the previous week. The clinician asks parents for their comments about the verbal contingencies being used. That discussion includes which verbal contingencies worked well, which did not, and which could be improved. If recommended procedures were not followed, the clinician and parent discuss the reasons for this.

*[6] Planning treatment changes for the coming week*

The parent and clinician discuss changes to procedures for the coming week. These may include:

- The technique to achieve low stuttering severity during practice sessions
- Activities to use during practice sessions
- The types and frequencies of verbal contingencies during practice sessions
- When and where to provide verbal contingencies during natural conversations

The clinician trials and then demonstrates to the parent any changes to treatment procedures for the coming week. Then, the parent demonstrates the changed procedures and the clinician gives feedback to the parent.

*[7] Concluding the visit*

The clinician concludes the visit by summarising the plan for the coming week, and inviting the parent to raise any matters for discussion.

## **Stage 2 clinic visits**

A typical Stage 2 clinic visit is 30 minutes. At the start of the visit the clinician obtains parent SRs for the previous week and discusses with the parent the extent to which these have been typical of all weeks since the last visit. The clinician and parent discuss the SRs in detail. Then, subsequent to a conversation with the child, or listening to a recording or segments of recordings of the child, the clinician assigns a SR and checks that the parent agrees with that score. The clinician and parent discuss the number of verbal contingencies that have typically been used during natural conversations since the last visit.

If the child meets the performance criteria, then the clinician arranges progression to the next step in the performance contingent Stage 2 schedule. If the child does not meet those goals, progress is not recommended. Instead, the clinician either *[1]* schedules an appointment for the next week, or the week after, and makes recommendations regarding management for the child's increased stuttering, *[2]* schedules a return to an earlier stage of the sequence of Stage 2 clinic visits, or *[3]* on rare occasions, returns the child to Stage 1.

Stage 2 continues until the child has sustained treatment goals for around a year. Subsequent to the conclusion of Stage 2, parents are advised to contact the clinician if any relapse occurs that they cannot effectively manage.

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## THE LIDCOMBE PROGRAM EVIDENCE BASE AT JUNE 2020

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### Overview

Independent reviews report the evidence base for the Lidcombe Program to be the most comprehensive for early stuttering treatments.<sup>29,30,31,32,33,34,35</sup> The evidence base includes children from the following countries: Australia, the United Kingdom, New Zealand, the United States, Canada, The Netherlands, Sweden, Malaysia, Kuwait, and Iran. An analysis (N=134) of randomised controlled clinical evidence and randomised controlled trials for the Lidcombe Program<sup>36</sup> showed that its odds ratio was 7.5 for attaining below 1.0 percentage syllables stuttered (%SS) at 6.3 months post-randomisation. This means that, at 6.3 months post-randomisation, children who received the Lidcombe Program had 7.5 times greater odds of having no stuttering or almost no stuttering than children who did not receive the Lidcombe Program.

Some key research findings are presented below. Details of all aspects of the Lidcombe Program evidence base are available [at the Lidcombe Program Trainers Consortium website](#) and in a textbook located at the Resources page of the [Australian Stuttering Research Centre website](#).<sup>37</sup>

### Clinical trials

#### *Laboratory origins of the treatment*

The Lidcombe Program is supported by basic and clinical research. It is derived from an extensive body of literature showing that stuttering can be controlled by response contingent stimulation and that response contingent stimulation of stuttering can be verbal.<sup>38,39</sup> The Lidcombe Program was derived directly from research showing that this was a clinical option for children.<sup>40,41,42</sup>

#### *The traditional weekly-visit format*

The Lidcombe Program was developed for the traditional format of weekly clinic visits. This guide describes procedures for that traditional format. The first clinical trial for the traditional format was published in 1990.<sup>43</sup> Subsequently, there were three nonrandomised Phase II trials<sup>44,45,46</sup> and one Phase III randomised controlled trial.<sup>47</sup> One report followed up children treated in those trials from 3–7 years.<sup>48</sup> A Phase II randomised trial<sup>49</sup> with three arms compared the traditional weekly visit treatment format with two clinic visits each week and one clinic visit each two weeks. Results provided a preliminary suggestion that outcomes from one clinic visit each two weeks may be non-inferior to one clinic visit per week. A randomised trial<sup>50</sup> has compared 18-month outcomes of the Lidcombe Program in weekly-visit format and RESTART-DCM treatment, showing little evidence of a difference in outcomes between the treatments. A three-armed randomised controlled trial<sup>51</sup> compared the Lidcombe Program with two versions of the Westmead Program. No evidence of non-inferiority was found among the treatments.

#### *Telepractice and group treatment formats*

To date, there have been four telepractice trials: one Phase I trial,<sup>52</sup> one nonrandomised Phase II trial,<sup>53</sup> one randomised Phase II trial,<sup>54</sup> and one Phase III randomised controlled trial.<sup>55</sup> With the publication of telepractice Lidcombe Program trials and the development of webcam technology, telepractice Lidcombe Program presentation is emerging as a service provision option. A randomised controlled trial has been published showing that a rolling-group treatment format is as efficacious as individual treatment, but much more cost efficient.<sup>56</sup>

#### *Randomised clinical experiments*

In addition to randomised controlled trials, there have been two randomised clinical experiments that have given children a portion of the Lidcombe Program and compared results to control children who received no treatment.<sup>57,58</sup> One experiment compared the Lidcombe Program to RESTART-DCM treatment.<sup>59</sup> Other experiments explored the contribution of verbal contingencies to treatment effects.<sup>60,61</sup>

Information about the Lidcombe Program and its efficacy has been made available beyond the speech-language pathology discipline to medical practitioners.<sup>62,63</sup>

## Translation research

Translation refers to the extent to which the results of clinical trials can be attained in clinical communities. The Lidcombe Program rolling group treatment model<sup>56</sup> has been shown to be translatable to clinical settings.<sup>64</sup>

In another investigation of Lidcombe Program translation,<sup>65</sup> data were presented for 31 community clinicians in Australia who treated 57 pre-school children with the Lidcombe Program. Nine months after the start of treatment, mean stuttering outside the clinic for all the children was 1.7 %SS. However, Consortium trained clinicians attained better outcomes. The mean for children treated by Consortium trained clinicians was 1.1 %SS and the mean for children treated by a clinician without such training was more than twice this, at 2.4 %SS. No other predictors of outcome were found. The researchers concluded that for clinicians with Consortium training, Lidcombe Program community outcomes can match those of clinical trials.

## Basic research

Treatment fidelity refers to whether a treatment is administered as intended. This is an important consideration with treatment in general,<sup>66,67</sup> and also with stuttering treatment.<sup>68,69</sup> Departure from manualised procedures, or clinician drift<sup>70</sup> to use the correct term, is undesirable. There have been five studies reporting data about Lidcombe Program treatment fidelity that highlighted some important issues with its application.<sup>65,71,72,73,74</sup>

There have been several studies that sought to explain the demonstrated efficacy of the treatment. It appears that post-treatment changes to parent or child language cannot explain its reported treatment effects,<sup>75,76</sup> nor do child post-treatment acoustic changes to speech production.<sup>77</sup> There are data to confirm that it is a safe treatment if delivered as intended,<sup>78</sup> with no negative psychological outcomes associated with it, such as child anxiety or impaired parent-child attachment.

Two studies have provided information about parent experiences with the Lidcombe Program.<sup>79,80</sup> Those studies are informative reading about the treatment before attempting it clinically.

## Number of Stage 1 clinic visits required

Lidcombe Program treatment benchmarks are based on five file audits,<sup>10,71,81,82,83</sup> four clinical trials,<sup>44,50,55,56</sup> one prospective follow-up,<sup>84</sup> and one translation study.<sup>65</sup> Those studies involved a total of 868 children. According to those studies, a median of 16 clinic visits is required for children to attain Stage 2 criteria and there is around a one-third reduction of median parent SR scores after four weeks of treatment.<sup>85</sup>

Treatment times for individual clinicians will vary according to specialist or generalist clinical status, the nature of their caseloads, and their clinical experience and training. Indeed, the range of median number of clinic visits in the reports above is 11–23.

It is recommended that those studies be used as broad guidelines for the number of Stage 1 clinic visits, rather than being used as professional benchmarks. They may be useful guidelines to alert clinicians when a child's progress may not be typical of Lidcombe Program caseloads. Such situations commonly prompt clinicians to consult with colleagues.

## Treatment process research

At present, despite considerable research, there is no mechanism established that can account for the treatment effects of the Lidcombe Program. Currently, researchers are exploring the contribution of parent verbal contingencies to the effects of the treatment. Three reports have raised questions about how verbal contingencies operate during the Lidcombe Program treatment process.<sup>86,87,88</sup> Eventually, these and other kinds of treatment process research may prompt changes to the treatment process described in this guide and at other sources.



## APPENDIX TWO

### LIDCOMBE PROGRAM REFLECTIVE CLINICAL QUESTIONS

Adapted and reproduced with permission: Sheedy, S., MacMillan, V., O'Brian, S., & Onslow, M. (2017). Lidcombe Program: Development and validation of reflective questions. *Journal of Clinical Practice in Speech-Language Pathology*, 19, 151–156, © 2017 Speech Pathology Australia.

(Give responses for the past month)			
<b>Measurement</b>			
<b>Rationale</b>	<b>Yes</b>	<b>No</b>	
Did you explain rationale of speech measures is to monitor progress and guide treatment changes?	<input type="checkbox"/>	<input type="checkbox"/>	
Did you explain what 0, 1 and 9 are on the severity rating scale?	<input type="checkbox"/>	<input type="checkbox"/>	
Did you explain that the severity rating scale refers to all children who stutter, not just the child in question?	<input type="checkbox"/>	<input type="checkbox"/>	
Did you explain "unambiguous stuttering"?	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Accuracy</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>
Did you and the parent listen to the child's speech until the extent of the stuttering was apparent at the start of each session?	<input type="checkbox"/>	<input type="checkbox"/>	
After listening to the child's speech at the start of the clinic visits, did you ask for the parent severity ratings?	<input type="checkbox"/>	<input type="checkbox"/>	
Did you and the parent score severity ratings within one scale value for the child's speech at each session?	<input type="checkbox"/>	<input type="checkbox"/>	
If the parent severity ratings were not within one scale value of yours did you indicate and explain an appropriate score each time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the parent correctly identify any unambiguous stuttering?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the parent correctly identify non-stuttered speech?	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Validity</b>	<b>Yes</b>	<b>No</b>	
Were parent beyond clinic severity ratings consistent with parent description of beyond-clinic severity?	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Compliance</b>	<b>Yes</b>	<b>No</b>	
Did the parent present a severity rating chart?	<input type="checkbox"/>	<input type="checkbox"/>	
Did the parent record severity ratings on all days?	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Interpretation</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>
Did you review the parent severity rating chart each week to identify whether there is a trend, which direction, and what it means clinically?	<input type="checkbox"/>	<input type="checkbox"/>	
Did you use the severity rating chart to guide discussion of progress?	<input type="checkbox"/>	<input type="checkbox"/>	



<b>Interpretation (continued)</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>		
Did you collect and document detailed information about the child's stuttering: severity, type of stuttering, frequency of stuttering, and whether it is intermittent or continuous?	<input type="checkbox"/>	<input type="checkbox"/>			
If you are using percent syllables stuttered (it is an optional Lidcombe Program measure), did you collect and graph them each week within the clinic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
(Give responses for the past month)					
<b>Verbal contingencies general</b>					
<b>Demonstration</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>		
Did the parent demonstrate the verbal contingencies used during the previous week?	<input type="checkbox"/>	<input type="checkbox"/>			
Did you suggest any improvements to the parent use of verbal contingencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Did you demonstrate suggested improvements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Did the parent demonstrate the treatment change to your satisfaction?	<input type="checkbox"/>	<input type="checkbox"/>			
Did you conclude the session by summarising changes for the coming week?	<input type="checkbox"/>	<input type="checkbox"/>			
<b>Parent skill</b>	<b>Yes</b>	<b>No</b>		<b>Parent reported</b>	<b>You observed</b>
Did the parent give verbal contingencies mostly for stutter-free speech?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent give verbal contingencies in a positive manner?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent vary the wording of the verbal contingencies?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent use all of the seven verbal contingencies or those that were recommended by you?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the child seem to enjoy parent verbal contingencies for stutter free speech?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Rate</b>	<b>Yes</b>	<b>No</b>			
Did the parent report using verbal contingencies as often as you directed?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that verbal contingencies did not disrupt communication with the child?	<input type="checkbox"/>	<input type="checkbox"/>			
Did you suggest changes to the number of verbal contingencies used during each day?	<input type="checkbox"/>	<input type="checkbox"/>			
<b>Presentation</b>	<b>Yes</b>	<b>No</b>			
In the clinic when they were given, were parent verbal contingencies immediately after stutter-free or stuttered speech?	<input type="checkbox"/>	<input type="checkbox"/>			
In the clinic did the parent appear genuinely pleased when giving verbal contingencies for stutter-free speech?	<input type="checkbox"/>	<input type="checkbox"/>			
In the clinic did the child react in a positive or neutral manner to the verbal contingencies?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that verbal contingencies were given only by those you trained to do so?	<input type="checkbox"/>	<input type="checkbox"/>			
In the clinic were verbal contingencies given in a manner so that they did not disrupt parent-child communication?	<input type="checkbox"/>	<input type="checkbox"/>			
(Give responses for the past month)					
<b>Verbal contingencies during practice sessions</b>					
<b>Presentation</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Parent reported</b>	<b>You observed</b>
Did the child appear to enjoy the activity?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent manage the treatment activity while remaining focused on the child's speech?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<b>Presentation (continued)</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Parent reported</b>	<b>You observed</b>
Was the child's speech a low severity rating during the treatment conversation?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent modify the interaction to retain a low severity rating?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent keep the child's speech at a low severity rating whilst decreasing the structure during the practice session as much as possible?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent report that activities were varied from day to day at home?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the time and place for the practice sessions varied?	<input type="checkbox"/>	<input type="checkbox"/>			
If tangible reinforcers were used, did they increase the impact of the verbal contingencies without distracting the child?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If tangible reinforcers were used, was it because they were necessary?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Consistency</b>	<b>Yes</b>	<b>No</b>			
Did the parent report that practice sessions occurred each day?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the practice sessions occurred for 10–15 minutes once or twice daily?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that practice sessions occur during the morning most days of the week?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent who did most of the practice sessions attend most clinic visits?	<input type="checkbox"/>	<input type="checkbox"/>			
(Give responses for the past month)					
<b>Verbal contingencies during natural conversations</b>					
<b>Presentation</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>		
Did the parent report that time and place varied?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that verbal contingencies were presented as often as you recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the number of verbal contingencies used result in improvement in severity ratings?	<input type="checkbox"/>	<input type="checkbox"/>			
<b>Consistency</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>		
Did the parent report that the verbal contingencies occurred throughout the day?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the verbal contingencies for stutter-free speech occurred more often than the verbal contingencies for stuttering?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the ratio of verbal contingencies for stutter-free speech and stuttering were given as recommended by you?	<input type="checkbox"/>	<input type="checkbox"/>			
(Give responses for the past month)					
<b>Parent issues</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Parent reported</b>	<b>You observed</b>
Did the parent express confidence with giving verbal contingencies when asked?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent independently problem-solve?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent independently make appropriate treatment adjustments?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent seem positive about treatment?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
(Give responses for the past month)					
<b>Stage 2</b>	<b>Yes</b>	<b>No</b>	<b>NA</b>		
Did the parent report continuing with verbal contingencies as recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report withdrawing verbal contingencies systematically as recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report increasing the number of verbal contingencies if severity increased?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Did the parent report continuing to give verbal contingencies for stutter-free speech as recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent independently solve problems during Stage 2?	<input type="checkbox"/>	<input type="checkbox"/>			

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