The Lidcombe Program Treatment Guide

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Mark Onslow, Margaret Webber, Elisabeth Harrison, Simone Arnott, Kate Bridgman, Brenda Carey, Stacey Sheedy, Sue O'Brian, Verity MacMillan, Wendy Lloyd, Anna Hearne

Overview

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 and Japan), Logopäd (Germany), orthophoniste (France), logopædagog (Demark) and logopedist (Netherlands). In this guide, the generic term clinician is used. The Lidcombe Program is endorsed by the professional associations of several countries.[1,2,3]

An important note

It is essential that a professionally qualified clinician trains, guides, and supervises the parent 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 a clinician. This guide is intended as a reference tool for use by clinicians and parents during treatment.

The Lidcombe Program Trainers Consortium

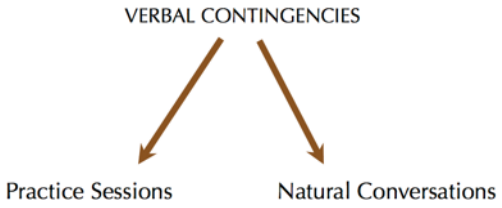
Postgraduate clinician training is available from the *Lidcombe Program Trainers Consortium*.[4] The Consortium has members in 13 countries and provides training in other countries as well. This training usually involves two days of instruction and demonstration, often with subsequent follow-up. When translators are required, the workshop may involve additional days.

A behavioural treatment

The Lidcombe Program is a behavioural treatment that targets the child's stuttered speech. It was designed for children younger than 6 years of age but, in some circumstances, may be suitable for older children (further details are available in a clinical textbook[5]). During the Lidcombe Program, the child is not instructed to change their usual speech pattern in any way. The parent does not alter the child's usual speech pattern or speech and language habits in any way. The parent also does not change the family lifestyle in any way, apart from presenting verbal contingencies as described in this guide. The parent, or sometimes a caregiver, delivers the Lidcombe Program treatment with the continuing training and supervision of a qualified clinician.

The parent gives verbal response contingent stimulation

The term *parent verbal contingencies* refers to when a parent comments after a child does not stutter or does stutter. The parent provides verbal contingencies to the child during practice sessions and during natural conversations.



Measuring stuttering

Regular measurement of the child's stuttering severity occurs during the Lidcombe Program with a Severity Rating (SR) scale: 0 = *no stuttering,* 1 = *extremely mild stuttering*, and 10 = *extremely severe stuttering*.[†] The parent and clinician use the SR scale during the Lidcombe Program.

Weekly consultations

The Lidcombe Program was developed for the format of weekly consultations. These can occur in the clinic or by video telehealth. During each weekly consultation (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 consultation and in what order.

Treatment goals during Stage 1 and Stage 2

The Lidcombe Program has two stages. The treatment goal of 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

On the Australian Stuttering Research Centre website (*https://www.uts.edu.au/asrc/resources/lidcombe-program)* there is a downloadable SR chart in eForm and PDF formats for parents and clinicians, and a downloadable pamphlet about the treatment for parents. 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, and to help them with problem-solving.[6] The SR chart and the checklist are reproduced in Appendix One and Two of this guide.

Measurement: The severity rating (SR) scale

Overview

The following section contains general information about stuttering SRs, their importance and use generally, and the training required. The *Lidcombe Program clinic consultations* section contains specific information about how to integrate this training into weekly consultations with the parent.

Purposes of SRs

SRs are used to measure the child's stuttering during each consultation and in the child's everyday speaking situations. The simplicity of SRs makes them a quick and effective way for the clinician and parent to communicate with each other about the child's stuttering severity. They enable treatment goals to be evaluated constantly. If progress is not satisfactory, then SR scores alert the clinician, and efforts can be made to resolve the issue. 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 the clinician explains the importance of SRs to the parent during the first consultation, and reiterates this throughout the course of

[†] Similar versions of the scale have been used in previous versions of the treatment.

the treatment. Taking time each week to discuss and problem-solve around the child's SR scores from the previous week is a major contributor to the parent continuing to collect and report daily SR scores.

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

Treatment goals determined by SRs

The parent assigns a SR to the child's speech each day, and the clinician assigns a SR during each consultation. Lidcombe Program treatment goals are based on those SR scores (see *Treatment goals for Stage 2*, below).

A flexible measurement

SRs are a flexible way to measure stuttering severity. Each day, the parent records a SR for the whole day to reflect the child's typical stuttering severity for that day. In other words, the parent records the score for the majority of the day. The parent may not always hear the child talking all day. An example is when the child is at pre-school. In such a case, the parent assigns SRs based only on the speech heard during the day.

Variations of the SR procedure can be used, involving more than one SR per day, if the clinician thinks it would be useful. For example, one SR could be used for typical severity and another for highest severity during the day. Additionally, the clinician may wish the parent to use supplementary SRs for a particular speaking situation that occurs each day, such as during dinner, bath time, or shopping. These SRs are recorded in addition to the daily SR. Another option is for the parent to record a highest and lowest SR for each day.

Valid and reliable parent SRs are essential

Research shows that parents are typically able to assign SRs that agree with those of a clinician[7,8] and the general community.[9] It is essential for the clinician to ensure that this occurs, as treatment progression and problem-solving rely on the parent and clinician having a reliable means of communication. If the parent underestimates a child's stuttering severity with their SRs, it can result in the child being admitted to Stage 2 prematurely. In the opposite situation, where the parent SRs are too high, the child can take longer to complete Stage 1 than is necessary.

However, the clinician also needs to be aware that the child's speech during a consultation, and, hence, the child's SR during that consultation, may not accord with parent scores from the child's everyday conversations. For various reasons, such as child shyness, reduced amount of conversational speech, or lack of variation in activities during the consultation, this SR may often be different from the parent report of SRs around the home environment.

Parent SR training

The parent is trained to use SRs either at assessment or during the first consultation. Training begins with the clinician explaining the reason for collecting measures and then explaining the scale and its end points. The parent or the clinician, or both, talk with the child for a few minutes until the child displays a reasonably representative amount of speech and 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.

This score is documented in the child's file. As noted above, the clinician needs to be aware that this within-clinic score is not necessarily representative of the child's everyday conversational stuttering severity. Also, if the child's stuttering increases significantly during the remainder of the session, possibly due to more representative speech being elicited, the latter score would be documented.

All subsequent consultations begin with a child conversation. The parent then assigns a SR score, and the clinician either confirms that the score is appropriate or provides corrective feedback. 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 during the later stages of Lidcombe Program treatment, however, for parent and clinician SR scores to be identical.

This is because, during those later stages of treatment, the child's severity is at the lower end of the range where there is less margin for error with clinical use of the scale.

Another more time-efficient and valid speech sampling method—particularly early in treatment—is for the parent to take an audio or video recording of the child during one or more conversations of everyday life. This provides a much more realistic measure of the child's stuttering severity. In this scenario, the clinician and parent listen to the recording together and consider a SR score at the start of the consultation. This method has the advantage of being able to scan quickly through a long and representative set of recordings of the child's speech.

Discussion of the different types of stuttering in the child's speech is a useful part of a consultation. This is because clinical improvement, in terms of reduced stuttering, is often accompanied by a change in the type of stuttering a child presents with. One method of classifying stuttering behaviours[10] uses three main categories: repeated movements, fixed postures, and extraneous behaviours. A moment of stuttering may comprise one or more of these behaviours.

Documenting SRs

The parent may produce hand-written SRs each week for the consultation or use an e-version of the form accessible from a digital device. The *Child Stuttering Severity Chart* in eForm and PDF format can be found on the Australian Stuttering Research Centre website (see *https://www.uts.edu.au/asrc/resources/lidcombe-program*). Another option is for the parent to send SRs to the clinician at regular intervals, such as daily or every few days, using a digital device. The key to collecting SR scores is for the parent to do this consistently and accurately. The method that is used to record SRs should be guided by parent preference and convenience.

The bilingual child

When a child speaks two languages, it is important to ask the parent whether the child stutters more in one language than in the other, and to regularly report SRs for both languages. This information feeds into a decision about whether to include one or both languages in treatment. If the child tends to stutter more in the language of treatment, there is no reason to doubt that gains will generalise to the other language. On the other hand, if the child stutters more in a language other than the language of treatment, it is important to also do treatment in that other language.

Parent verbal contingencies

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, the child 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*.

The clinician teaches the parent to praise the child for stutter free speech. The parent can be taught to say things such as "That was lovely smooth talking" or "Good talking, no bumps." It is essential for the parent to do this in their own way. Every parent has a different style, and different children like to be praised in different ways. The clinician also needs to be sure that the parent is genuine with praise and doesn'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 period 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*.

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." *Acknowledge* 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 this perspective, it has clinical value.

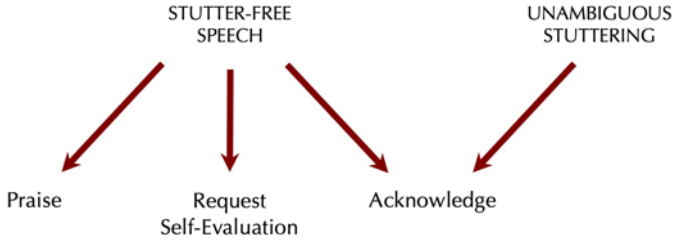
Verbal contingencies for unambiguous stuttering

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 the child receives during the Lidcombe Program is 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 need to receive verbal contingencies for stuttering in different ways.

Acknowledge

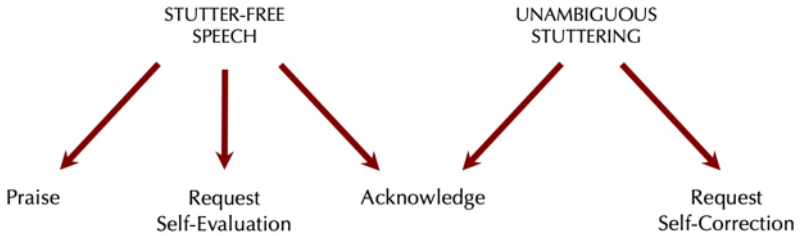
The first verbal contingency for unambiguous stuttering is *acknowledge*.



As with the verbal contingency *acknowledge* (for stutter-free speech), this verbal contingency is not 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* (for stutter-free speech), it 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. Mostly, the child can do this, but, if the child fails to do so, it is usually best for the parent not to persist. If a child reacts negatively in any way to requests for self-correction, then it is essential that these requests be stopped immediately and the matter 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 in response to stuttering moments. The exception to that rule is 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 the parent can use, but they 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 sometimes spontaneously self-evaluate their speech as stutter-free, saying something like "I did smooth talking", in which case, the 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. The parent needs 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 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 the child if parent praise follows a moment of stuttering. If the child does spontaneously self-evaluate stuttering, the parent can note that it occurred and tell the clinician at the next consultation. 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 the child corrects stuttered utterances without being asked by the 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 the parent might use here includes "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 below contains examples of some of the ways that the parent can provide verbal contingencies.

STUTTER-FREE SPEECH		
	Praise	*"Wow, that was so smooth!"* *"Fantastic smooth talking."* *"I'm loving your smooth speech."* *"That was so super-smooth."*
	Request self-evaluation	*"Was that smooth?"* *"Were there any bumps there?"* *"Did you say that smoothly?"*
	Acknowledge	*"Smooth talking"* *"That was smooth."* *"Smooth again."*
UNAMBIGUOUS STUTTERING		
	Acknowledge	*"A little bump then."* *"That was a bit bumpy."* *"That was a stuck word."*
	Request self-correction	*"Can you try that again?"* *"Can you say [stuttered word] smoothly?"* *"See if you can say that without the bump."*

Some essential things about parent verbal contingencies

Teach verbal contingencies for stutter-free speech first

The clinician doesn't teach the parent how to do the verbal contingencies all at once. Normally, the clinician first teaches the parent to give verbal contingencies for stutter-free speech so that the child can become comfortable with the treatment. Then, the clinician teaches the parent to give verbal contingencies for stuttered speech when they are sure that the child is 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 the parent is using parent verbal contingencies correctly

The clinician needs to be sure that the parent is using verbal contingencies correctly, consistent with the instructions given. At each consultation, the parent demonstrates how they have been doing the verbal contingencies with the child during the previous week, and the clinician gives them feedback. The parent may audio or video record examples of themselves providing verbal contingencies during practice sessions at home and play them to the clinician during the consultation. The clinician could also observe the parent providing verbal contingencies during the consultation. In either case, the clinician gives constructive feedback and then observes the parent giving verbal contingencies as they take account of that feedback. A parent delivering contingencies incorrectly is a common reason that a child does 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 the parent.

Parent verbal contingencies are for unambiguous stuttering moments

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

Parent verbal contingencies 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, to be sure that the child is receiving supportive and enjoyable verbal contingencies. Otherwise, during consultations, it will be obvious that the child is not happy with the treatment. A rule of thumb is that there should be far more verbal contingencies for stutter-free speech than for stuttered speech.

Have the parent give as many parent verbal contingencies 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 if 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, throughout Stage 1 and Stage 2, verbal contingencies during natural conversations would occur no fewer than several times each hour that the parent spends with the child.

Parent verbal contingencies are accurate

It is essential that the clinician is satisfied that the parent can present verbal contingencies accurately in the clinic with the clinician before the parent attempts to use them with a child. The clinician needs to be sure that the parent can distinguish between unambiguous stuttering moments and stutter-free speech. It is also essential that the parent is 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 consultation, the clinician needs to observe the parent providing immediate and accurate verbal contingencies either during clinic in real time or on recordings.

Verbal contingencies during practice sessions

What they are

Using verbal contingencies during practice sessions allows the parent to learn how to use them safely and correctly in a positive way. This positive manner is particularly important when the child has experienced negative social reactions towards their stuttering. The practice sessions also allow the desired behavioural response of stutter-free speech to predominate. To maintain a positive experience for the child during practice sessions, stuttering moments should only occur occasionally during them.

Maximising stutter-free speech

There is research evidence that the chance of a stuttering moment increases with increased syntactic complexity and utterance length, and these findings have been replicated with children. An overview of that evidence is given in Lecture One of a downloadable clinical textbook.[5] Clinicians can use this information to teach the parent to alter the likelihood of stuttering moments occurring during practice sessions. The parent can do this by giving the child options of conversing with a range of utterance durations with differing syntactic complexities: from one and two words to several consecutive utterances in a conversation. The clinician makes 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 the following:

- turn taking
- word or phrase imitation
- sentence completion
- closed questioning
- binary choice questions
- talking about the here and now
- concrete stimulus materials.

The child's utterances may also be influenced by the

- choice of conversation partners
- context where the practice session occurs
- excitement level generated by the conversation partner, the context, the toys, or the talking activities.

The clinician teaches the parent how to change these variables to ensure that only occasional stuttering occurs during practice sessions. The fundamental task for the parent during practice sessions is to consistently use the methods 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. The aim is for the child to be predominantly stutter-free during the practice sessions but, at the same time, produce the most complex stutter-free speech that they are capable of producing at that time.

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

- Stuttering is severe.
- The child talks about abstract or imaginative topics in detail and at length.
- The parent is uncomfortable leading conversations with the child.
- The child does not comply with a turn-taking format.
- The child quickly becomes bored with each activity.

These situations require the clinician to discuss and problem-solve with the parent 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 would 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 the parent to focus on, and to monitor, the child's speech with fewer distractions.

Verbal contingencies for stutter-free speech during practice sessions can be supplemented with non-verbal contingencies if the clinician thinks that they would be helpful. Examples would be stickers, stamps, ticks on a page, and blocks. Such non-verbal contingencies are not useable during everyday conversations, but non-verbal contingencies with gestures can be: high-fives, fist-pumps, thumbs-ups, and nods. As such, it makes clinical sense to use these during everyday conversations if they are suitable

for the child. They can be alternatives or supplements to verbal contingencies during everyday conversations as well as during practice sessions. Normally, non-verbal contingencies do not replace verbal contingences but only supplement them, unless there is a sound clinical reason to do so. One situation where that 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 the child. Unlike practice sessions, the natural conversations of everyday childhood life are never modified to optimise the occurrence of stutter-free speech. Instead, the parent takes advantage of naturally occurring periods of reduced stuttering during each day to present contingencies. Everyday conversations with the child, during which the parent typically gives contingencies, occur during food preparation, at meal times, in the bath, on the way to school, in the park, or while shopping. As with verbal contingencies during practice sessions, they can be supplemented with non-verbal contingencies if the clinician thinks that they would be helpful. Examples of non-verbal contingencies are high-fives or token rewards.

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 this time, the child's SRs are showing improvement.

The transition between treatment during practice sessions and natural conversations

For a period, the parent provides treatment during practice sessions and also 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 the parent is providing verbal contingencies in 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 every second day. Similarly, throughout this period, the clinician may direct many changes to the number, type, and timing of verbal contingencies that parents give during natural conversations.

Stage 2

The purpose of Stage 2

There are two purposes of Stage 2. The first is to systematically hand over complete responsibility for the management of the child's stuttering to the parent. 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.[11] Half of the children in that report showed some signs of stuttering relapse, with 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 consultations that are 1 week apart: (a) parent SRs of 0–1 during the week preceding the consultation, with at least four of those seven SRs being 0, and (b) clinician SRs of 0–1 during the consultation. A minimal requirement during Stage 2 is for the parent to record SRs only during the week preceding the consultation. However, the clinician may direct the parent 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.[12] 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 consultations 2 weeks apart, then two consultations 4 weeks apart, then two consultations 8 weeks apart and, finally, one or two consultations 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 the children during Stage 2 fail to meet treatment targets at least once during Stage 2.[11]

Ideally, in the case of early signs of relapse during Stage 2 clinic consultations, the parent is able to restore SRs to the target 0–1 range, as described above (see *Treatment goals for Stage 2*, above), by resuming treatment during practice sessions and/or increasing the rate of verbal contingencies. If such attempts to restore SRs to the target 0–1 range are not successful, the parent should contact the clinician for advice prior to the next scheduled Stage 2 clinic consultation.

A common Stage 2 problem

When the child completes Stage 1 and there is no stuttering or nearly no stuttering, the parent or clinician, or both, can become complacent and not follow through with the prescribed Stage 2 maintenance program. This creates a serious risk of relapse. 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 the parent. The authors of a long-term clinical follow-up[13] suggested that clinicians should encourage parents to observe and listen carefully for any signs of post-treatment stuttering during and after completion of Stage 2.

Lidcombe Program clinic consultations

Stage 1 consultations

During Stage 1, the parent and child have consultation once per week. Each consultation is typically 45–60 minutes. The following events normally occur during a consultation, 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.[†]

[2] Check parent SR

The clinician and parent discuss a SR using procedures outlined previously (see *Parent SR training*, above). The clinician then documents a SR. The clinician needs to be mindful that a within-clinic SR is not necessarily representative of the child's speech during everyday activities.

[†] Some clinicians find it helpful to record a percentage of syllables stuttered score at this time.

[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 questions normally include the following:

- When were practice sessions planned, did they occur as planned, and how often did they occur 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?
- During what periods of 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 in the last consultation. Alternatively, the clinician and parent listen to a recording of verbal contingencies delivered to the child during the week. When the clinician observes a practice session, either in the clinic or on a recording, the clinician checks for the following:

- The child is enjoying the practice session.
- The parent is accurately identifying 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 for the previous week. The clinician asks the parent for their comments about the verbal contingencies being used. That discussion includes which verbal contingences 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 following:

- 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 practices the changed procedures in front of the clinician, and the clinician gives feedback to the parent.

[7] Concluding the consultation

The clinician concludes the consultation by summarising the plan for the coming week. The clinician encourages the parent to raise any further matters for discussion.

Stage 2 consultations

A typical Stage 2 consultation is 30 minutes. At the start of the consultation, the clinician obtains parent SRs collected during the previous week and discusses with the parent the extent to which these have been typical of all weeks since the last consultation. The clinician and parent discuss the SRs in detail. In particular, they discuss how the parent has responded to any fluctuations in SRs. Then, after 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 consultation.

If the child meets the performance criteria, the clinician arranges progression to the next step in the performance contingent Stage 2 schedule. If the child does not meet the performance criteria, then progress is not recommended. Instead, depending on the child's stuttering severity and the parent's ability to deal with stuttering fluctuations, the clinician either (a) schedules a consultation for the following week, or the week after that, and makes recommendations regarding management of the child's increased stuttering, (b) schedules a return to an earlier stage of the sequence of Stage 2 clinic consultations, or (c) 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, the parent is advised to contact the clinician if any relapse occurs that cannot be managed by short-term reintroduction of verbal contingencies.

The Lidcombe Program evidence base at February 2023

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.[14,15] The Lidcombe Program was derived directly from research showing that this was a useful clinical option for children.[16,17,18]

Overview

Details about all aspects of the Lidcombe Program evidence base are available in a downloadable clinical textbook[5] located on the Resources page of the *Australian Stuttering Research Centre* website (see *Resource materials*, above). Eleven independent reviews, including a Cochrane Review,[19] report the evidence base for the Lidcombe Program to be the most comprehensive for early stuttering treatments. An overview of that evidence is given in Lecture Seven of a clinical textbook.[5] An analysis (N = 134) of randomised controlled clinical evidence and randomised controlled trials for the Lidcombe Program[20] showed that its odds ratio was 7.5 for attaining below 1.0 percent syllables stuttered 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. A Cochrane Review[19] noted that the treatment is the only early intervention with demonstrated superiority over no-treatment controls. However, that review noted that the evidence base for the Lidcombe Program has some limitations.

The evidence base for the treatment includes children from the following countries: Australia, the United Kingdom, New Zealand, the United States, Canada, the Netherlands, Sweden, Malaysia, Kuwait, and Iran. The the Lidcombe Program was developed for English speaking cultures. However, a systematic review[21] concluded that it is efficacious in different cultures and languages, although it may require a longer treatment time. The review concluded that it is suitable for bilingual contexts.

Some key research findings are presented below.

Clinical trials

The weekly-consultation format

The Lidcombe Program was developed for the format of weekly consultations. This guide describes procedures for that format. The first clinical trial for the weekly-consultation format was published in 1990.[22] Subsequently, there were three non-randomised Phase II trials[23,24,25] and two Phase III randomised controlled trials.[26,27] One report followed up children treated in those trials from 3–7 years.[13] A Phase II randomised trial[28] with three arms compared the traditional weekly consultation treatment format with two consultations each week and one consultation every 2 weeks. Results provided a preliminary suggestion that outcomes from one consultation every 2 weeks may be non-inferior to one consultation per week. A randomised trial[29] has compared 18-month outcomes of the Lidcombe Program in weekly-consultation format with RESTART-DCM treatment, showing little evidence of a difference in outcomes between the treatments. A three-arm randomised controlled trial[30] compared the Lidcombe Program with two versions of the Westmead Program. No evidence of non-inferiority was found among the treatments.

Telehealth and group treatment formats

To date, there have been four telehealth trials: one Phase I trial,[31] one non-randomised Phase II trial,[32] one randomised Phase II trial,[33] and one Phase III randomised controlled trial.[34] With the publication of telehealth Lidcombe Program trials and the development of webcam technology, telehealth Lidcombe Program presentation is emerging as a viable service provision option. A majority of 106 surveyed United States and Canadian speech-language pathologists (94%) indicated that they would include telehealth in future Lidcombe Program delivery, indicating benefits of "time efficiency, flexibility of scheduling, and improved clinical processes." [35, p.1]

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.[36] That treatment format has been shown to be translatable to clinical settings.[37]

Randomised clinical experiments

In addition to randomised controlled trials, there have been two randomised clinical experiments that have given children only a part of the Lidcombe Program treatment and compared results with control children who received no treatment.[38,39] One experiment compared the Lidcombe Program with RESTART-DCM treatment.[40] Other randomised experiments explored the contribution of verbal contingencies to treatment effects.[41,42]

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[36] has been shown to be translatable to clinical settings.[37] There have been two reports of Lidcombe Program translation to Australian and English community clinicians.[43,44] The community clinicians generally matched outcomes reported in clinical trials, although therapist drift from manualised procedures emerged as a clinical issue. Generally, it appears from these results that standard professional preparation or specific Lidcombe Program post-graduate training may be sufficient to attain treatment translation. That statement may be generalisable to other countries besides England and Australia.

Treatment process research

Treatment fidelity refers to whether a treatment is administered as intended. This is an important consideration with treatment in general,[45,46] and specifically with stuttering treatment.[47,48] Departure from procedures specified in this guide, or *clinician drift*[49] 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.[43,50,51,52,53]

There are data to confirm that it is a safe treatment if delivered as intended,[29,54] with no negative psychological outcomes, such as child anxiety or impaired parent-child attachment, associated with it. There are data from 277 children about 32 variables as potential predictors of treatment dropout and treatment outcome.[55] No clinically important predictors emerged from that analysis.

Two studies have provided information about parent experiences with the Lidcombe Program.[56,57] These studies are informative—perhaps essential—reading about the treatment before attempting it clinically.

Mechanisms of action research

At present, despite considerable research, there is no mechanism established that can account for the treatment effects of the Lidcombe Program. 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,[58,59,60] nor can child post-treatment acoustic changes to speech production.[61] A preliminary report[62] raised the prospect that inter-turn speaker latencies may be involved in Lidcombe Program mechanisms of action.

Currently, researchers are exploring the contribution of parent verbal contingencies to the effects of the treatment. Three reports have raised issues about how verbal contingencies operate during the Lidcombe Program treatment process.[53,52,53] A non-inferiority trial[27] has compared the Lidcombe Program with and without verbal contingencies. Results were inconclusive, prompting the researchers to suggest "it is possible that verbal contingencies make some contribution to the Lidcombe Program treatment effect." [27, p.1] Eventually, these and other kinds of treatment process research may lead to changes to the treatment process described in this guide and in other sources.

Number of Stage 1 consultations required

Lidcombe Program treatment benchmarks are based on 17 studies, including file audits and clinical trials. These studies involved a total of 995 children, and an overview is given in Lecture Seven of a clinical textbook.[5] According to these studies, a median of 17 consultations is required for children to attain Stage 2 criteria.[†] There is around a one-third reduction of median parent SR scores after four weeks of treatment.[63]

Treatment times for individual clinicians 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 consultations in the reports above is 10–30.

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

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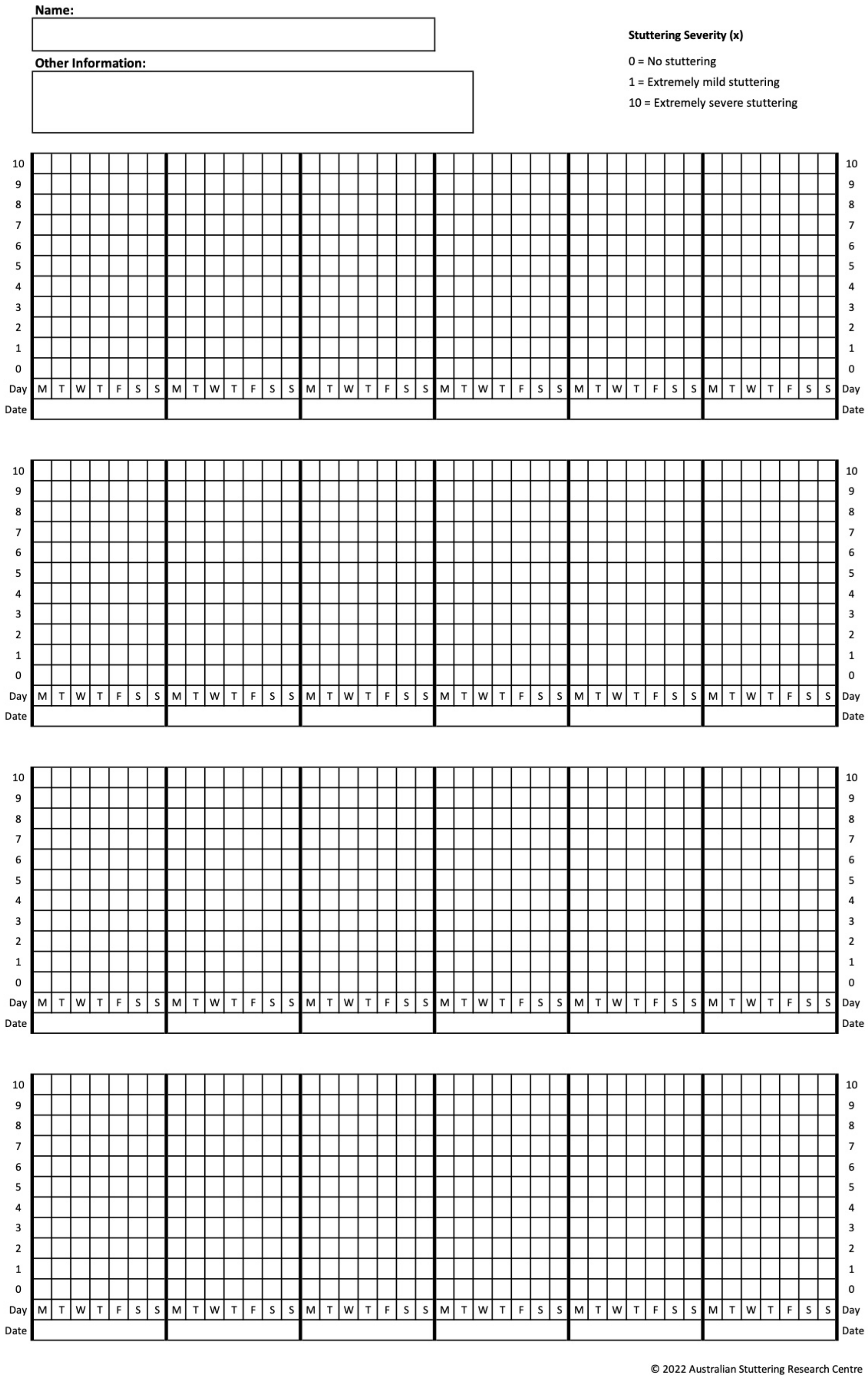
[†] This means that half of the children in those caseloads attained Stage 2 criteria in more than 17 consultations, and half of the children in those caseloads attained Stage 2 criteria in fewer than 17 consultations.

APPENDIX ONE: CHILD STUTTERING SEVERITY CHART

Downloadable at the Australian Stuttering Research Centre website in eForm and PDF format (*https://www.uts.edu.au/asrc/resources/lidcombe-program*).



Name:

Other Information:

Stuttering Severity (x)

0 = No stuttering
1 = Extremely mild stuttering
10 = Extremely severe stuttering

10
9
8
7
6
5
4
3
2
1
0
Day M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S Day
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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)

Measurement

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

Interpretation *(continued)*	**Yes**	**No**	**NA**		
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?	❑	❑			
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?	❑	❑	❑		
(Give responses for the past month) **Verbal contingencies general**					
Demonstration	**Yes**	**No**	**NA**		
Did the parent demonstrate the verbal contingencies used during the previous week?	❑	❑			
Did you suggest any improvements to the parent use of verbal contingencies?	❑	❑	❑		
Did you demonstrate suggested improvements?	❑	❑	❑		
Did the parent demonstrate the treatment change to your satisfaction?	❑	❑			
Did you conclude the session by summarising changes for the coming week?	❑	❑			
Parent skill	**Yes**	**No**		**Parent reported**	**You observed**
Did the parent give verbal contingencies mostly for stutter-free speech?	❑	❑		❑	❑
Did the parent give verbal contingencies in a positive manner?	❑	❑		❑	❑
Did the parent vary the wording of the verbal contingencies?	❑	❑		❑	❑
Did the parent use all of the seven verbal contingencies or those that were recommended by you?	❑	❑		❑	❑
Did the child seem to enjoy parent verbal contingencies for stutter free speech?	❑	❑		❑	❑
Rate	**Yes**	**No**			
Did the parent report using verbal contingencies as often as you directed?	❑	❑			
Did the parent report that verbal contingencies did not disrupt communication with the child?	❑	❑			
Did you suggest changes to the number of verbal contingencies used during each day?	❑	❑			
Presentation	**Yes**	**No**			
In the clinic when they were given, were parent verbal contingencies immediately after stutter-free or stuttered speech?	❑	❑			
In the clinic did the parent appear genuinely pleased when giving verbal contingencies for stutter-free speech?	❑	❑			
In the clinic did the child react in a positive or neutral manner to the verbal contingencies?	❑	❑			
Did the parent report that verbal contingencies were given only by those you trained to do so?	❑	❑			
In the clinic were verbal contingencies given in a manner so that they did not disrupt parent-child communication?	❑	❑			
(Give responses for the past month) **Verbal contingencies during practice sessions**					
Presentation	**Yes**	**No**	**NA**	**Parent reported**	**You observed**
Did the child appear to enjoy the activity?	❑	❑		❑	❑
Did the parent manage the treatment activity while remaining focused on the child's speech?	❑	❑		❑	❑

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

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