Speech and Language Therapy with Mable

An Examination of the Evidence Base supporting Telepractice Provision and Therapy Provision

Telepractice

Telepractice is the remote delivery of professional health services via the use of telecommunications technology such as facetime, and Mable Speech deck.

Telepractice has the capacity to overcome issues relating to access to services such as distance, immobility and increased demand for speech and language services

Mable Offer

Mable Therapy takes place within a proprietary, real-time, interface 'Speech Deck'. Pupils and therapists connect using a live video feed and can simultaneously interact with the specially designed games and activities.

Mable also provides training for teaching staff to identify and assist those in need of a little extra help. We provide live and recorded webinars, delivered by fully qualified speech therapists on a variety of different subjects to schools and other organisations.

For therapists Using the latest web technologies, Mable provides the therapist with a suite of tools to enable the delivery of high quality, live, speech therapy sessions via the internet. Booking, payment, reporting and screening of patients are all handled within the system.

What does the evidence say?

From a review of the current literature, telehealth has been used successfully to deliver assessment, intervention, parent training, and teacher training. Indeed, the American association of Speech and Hearing (ASHA) and Speech Pathology Australia (SPA) have agreed in their position statements that telehealth is a viable option for therapy and has been proven to support and even enhance the effectiveness of face to face specialist intervention (Edwards et al 2012)

- In a recent systematic review conducted at the University of São Paulo in Brazil they found that 85.5 % of studies reviewed concluded that telehealth had advantages over the non-telehealth, face-to-face procedure of therapy delivery (Molini-Avejonas

et al 2015). They also acknowledged that there are some remaining barriers that still need to be overcome, some of the barriers include:

- Technology, often healthcare trusts and individual's family do not have adequate hardware in order to run telehealth sessions. Telehealth also relies on good quality internet connection which is not accessible in all areas of the UK.
- There are no formalised training programmes or regulations in the UK relating to telehealth and the delivery of speech and language therapy remotely.
- There are Speech and Language practitioners that struggle to accept telehealth as a viable service delivery despite the benefits to patients and the evidence supporting it. That said, the need for speech and language therapists to adapt to this new health care modality is very clear. (Molini-Avejonas et al 2015)

In a position statement by Speech Pathology Australia, (2014) they also systematically review the current evidence in the field of telehealth. There is a link to their position paper here. The following summarises their collated evidence with the addition of more current research papers.

Childhood speech and language delay and disorders

Parent and professional training

There is successful evidence of telehealth being used as coaching tool for parents of children with ASD (Baharav & Reiser 2010, Suess et al 2014, Kobak et al 2011, Vismara 2013). In Baharav & Reiser's investigation, telehealth is evaluated as a tool for parent training. They compared a traditional face-to-face model of therapy with face-to face with additional telehealth follow-up sessions. Results showed that gains obtained in traditional therapy were maintained for longer and even exceeded in effectiveness by using a treatment model that uses telehealth.

In addition, parents reported that they perceived telehealth sessions to be as valuable as those delivered directly by a therapist.

In Suess 2014, parents of three children with a diagnosis of ASD were provided with functional communication training via telehealth. Parents were coached with weekly one hour sessions. In-between sessions, parents recorded their interactions with their children. Results showed the strategies they learned in coached sessions carried over to their independent sessions. Overall, all children showed substantial reductions in problem behaviour during the final treatment trials and especially during the coached trials. The changes were also proven to be sustained across time.

A similar study by Kobak (2011) included twenty-three parents with a child between 18 months and 6 years with ASD. Pre and post-test scores of parents' knowledge were used to evaluate effectiveness of tutorials delivered via telehealth. Results revealed all participants found that the tutorial was well organised, clearly presented, and easy to understand; that it increased their knowledge about communicating with their child; and facilitated parents to feel capable of applying these techniques with their child.

In a study by Gibson et al (2010) speech therapists used Skype (a desktop conferencing tool) to teach preschool staff to support development behaviours of a child with autism.

Staff learned to use functional communication intervention with confidence and reported high levels of satisfaction with both the procedures and the technology.

Assessment

Crutchley et al (2010) used telehealth to assess children with speech sound disorders on the Goldman-Fristoe Test of Articulation-2 (2000) assessments were administered to 5 children identified as having speech sound disorder. Assessment and scoring was simultaneous with one face-to-face clinician and one telehealth clinician. Results showed reliable and valid assessment of articulation by telehealth has potential. However, some limitations of the technology used may have caused variation in individual phoneme data for example sound quality and positioning of the camera in order to view articulators closely.

In a similar investigation, Waite et al (2006) used video conferencing to assess single-word articulation, intelligibility in conversation, and oro-motor structure and function of school aged children. Simultaneous scoring of a face-to face clinician and an online clinician was conducted with each participant.

The results demonstrated high levels of agreement between the two scoring environments for:
- single-word articulation (92%)
- speech intelligibility (100%) and
- oro-motor tasks (91%).

Waite et al (2006) also evaluated children on speech assessments and on literacy measures, and found there was a high inter- and intra-rater agreement. These studies concluded that it would be feasible to conduct language assessments online but noted the need for access to technology such as increased bandwidth and touch screens to improve effectiveness. T

he results from all these studies suggest that an internet-based assessment protocol has potential for assessing paediatric speech disorders. However, more robust research with a larger number of participants is necessary.

Specialist intervention

A single case study by Boisvert et al, (2012) aimed to demonstrate the effects of telehealth as a service delivery method for providing direct narrative intervention to an individual with autism. Using a repeated measures design, they found their participant's documented outcomes yielded a statistically significant correlation between the progress made during telehealth sessions versus progress made during face-to-face appointments for the narrative skills targeted. A comparison of the mean of the combined probe data suggests that the participant responded more favourably to telehealth sessions.

Gabel et al (2013) included 71 participants in his recent study of the use of telehealth with children with speech, language, pragmatic, stuttering and/or voice disorders. Functional outcome measures of interventions delivered via telehealth were recorded using the NOMS (National Outcome Measures) of the American Speech-Language-Hearing Association. NOMS provides data for students receiving intervention through direct, in-person service delivery models. Results of this study support the described telehealth service delivery

model as a viable option for speech-language therapy services delivered to school-aged children with communication impairments.

In a study by Grogan Johnson et al (2011) they provided Speech therapy using to two groups of children using either live interactive videoconferencing (telehealth), or conventional side-by-side intervention.

The children's progress was measured using pre- and post-intervention scores on the Goldman Fristoe Test of Articulation-2 ([Goldman & Fristoe, 2002](#)). Students in both service delivery models made significant improvements in speech sound production, with students in the telehealth condition demonstrating greater mastery of their Individual Education Plan (IEP) goals.

McCullough (2010) conducted a study of direct intervention via video conferencing to children in the early years with Down's syndrome and their parents. Data was collected regarding parent's and clinician's impressions and use of technology, as well as information about the children's communication goals. The results demonstrated parents felt more confident and had increased knowledge about how to support their child's communication skills. All children within the study made progress towards their communication goals as set by the speech and language therapist.

Deafness and hearing impairment

There is less research in this area compared with adult and childhood language disorders and delays. However, in a recent study by Constantinescu (2012), parents, children, school staff and therapists' views on remote therapy were collected following auditory-verbal therapy (AVT) sessions delivered remotely via Skype (for a period of at least 6 months). Parent and therapist satisfaction was measured via a questionnaire.

Compared with face-to-face sessions, all parents felt comfortable discussing matters with the SLT remotely, and were satisfied or as satisfied with the child's interaction/rapport with the SLT. Therapists were all satisfied or very satisfied with delivering auditory-verbal therapy via Skype.

A follow-up study conducted by Constantinescu et al (2014) investigated the effectiveness of AVT delivered via telehealth in the spoken language development of a group of young children with hearing loss. Two groups of participants were compared those receiving AVT via telehealth and those receiving intervention face-to face.

Pre and post data on the Preschool Language Scale-4 - showed no significant differences in language scores between the two groups. The results suggest that early intervention AVT via telehealth may be as effective as delivery in person for children with hearing loss.

Fluency

Existing evidence supports the delivery of fluency interventions via telehealth practice. Delivery of the Lidcombe Program with young children and Camperdown Program with adolescents and adults has been proven effective in the following studies:
- Bridgman, Block, Onslow, O'Brian, & Jones, 2014;
- Carey, O'Brian, Onslow, Block, Jones, & Packman, 2010;

- Carey, O'Brian, Onslow, Packman, & Menzies, 2012;
- Lewis, Packman, Onslow, Simpson, & Jones, 2008;
- O'Brian,15 Packman, & Onslow, 2008;
- O'Brian, Smith, & Onslow, 2014;
- Wilson, Onslow, & Lincoln, 2004

A randomised control trial by Bridgman, et al., 2014, involved 49 pre-school participants and looked at whether there was any difference in the delivery of the Lidcombe Program when delivered by video-conferencing software, compared to standard in-clinic methods. The control group received standard delivery of treatment in a traditional clinic setting. The experimental group received the same treatment within their homes, using a computer and webcam. The results have shown that for the Lidcombe Program, the number of consultations to reach Stage II using telehealth is equivalent to face-to-face delivery (Bridgman, et al. 2014).

For the Camperdown Program with adults, Carey et al (2010) conducted a randomised control trial with 40 participants. 20 were treated via telehealth and 20 were treated face to face. Results showed that telehealth delivery required fewer clinician contact hours than face-to-face delivery to achieve the same outcomes. (Carey et al., 2010).

Dysphagia

Sharma et al (2011) investigated feasibility of delivering dysphagia assessment via videoconferencing. Ten participants were involved in the repeated measures study. Two groups were defined as face-to-face (FTF-SP) and one as telehealth (T-SP). They found high to excellent levels of agreement between the T-SP and the FTF-SP across all parameters of the Clinical swallowing examination. Similar studies (Theodoros & Russell, 2011; Ward, Sharma, Burns, Theodoros, & Russell, 2012; Ward, Burns, Theodoros, & Russell, 2014) have shown reliability and validity of conducting adult clinical bedside swallowing assessments via telehealth.

When evaluating swallowing modifications including split screen display, zoom camera, clear utensils, and a trained facilitator at the client end to support the assessment are recommended.

Session Duration:

Length of time in a session e.g. 20 minutes

Mable Offer

Mable provides one-to-one face to face therapy sessions with individual children aged 4-11. Each session involves 20 minutes of intensive therapy input. Five minutes of facilitator feedback and 10 minutes for therapist evaluation and detailed report writing.

What Does the Evidence Say?

Mable session duration is based on the evaluation of evidence in continuous performance tasks (CPT) at different ages and current research in the area of attention.

Pupils with speech and language difficulties can struggle to attend sustained periods of time. Some research suggests using a child's age as a general starting point for the number of minutes they are able to attend plus one minute. For example, a child of seven years old should be able to maintain eight minutes of sustained attention (1)

EYFS

Research has found, tasks whose overall length is 5–7 minutes or less, have shown greatest utility in preschool-age children (2) Therefore, for children in EYFS sessions are broken down into short succinct tasks within with the 20 minute Mable programme and to optimise pupil learning.

KS1-KS2

By this age, most children can ignore minor distractions. Alone, they will focus on a single interesting activity for 10 or 15 minutes and on an assigned task for 4-6 minutes if it's easy and interesting (3) Geoffrey Petty (2004) states there is a dramatic decrease in attention after 20 minutes in typically developing pupils at KS1 and KS2 (4)

KS3 +

For young people session duration can be extended up to 40 minutes. This is evaluated on a case by case basis and will depend on the young person's ability to

sustain continuous attention; their motivation for involvement in therapy; their response to therapy; prognosis of speech and language diagnosis.

Therapy Dosage:

Frequency, intensity and Number of sessions required for progress

Research shows that in the UK, children with communication disorders typically receive a total of 6 hours of intervention before being discharged This dosage does not produce significant outcomes for children and is identified as a constraint imposed on [clinicians] by the "package of care" model of service delivery frequently used in NHS services (5).

Mable Offer

Mable Speech and Language therapy complies with the high <u>Standards of Conduct, Performance, and Ethics</u> set by the Health Professionals Council.

It is unethical to provide speech and language interventions to children who do not require it. We will not give you advice we cannot support with robust clinical reasoning. We are not subject to staffing or location restrictions, meaning that children get as much therapy as they need, not as much as we can offer.

Therapy dosage will depend on several factors which will be established during the pupils assessment period.
- Speech, language and communication diagnosis
- Cognition and learning ability
- Impact of social emotional and mental health difficulties
- Physical and sensory needs

Language therapy

What does involve?
Narrative as Target (Macrostructure and Microstructure; Narrative as Context; Model stories; Story Retelling; Story Creation; Questions to elicit more information)
Additional targets: vocabulary, grammatical morphology, syntax, phonological awareness

Pupils who will benefit from Language Therapy will include: pupils who have problems with understanding language at the same level as their peers. Pupils who struggle to formulate sentences accurately; Pupils with word finding and vocabulary difficulties. Pupils who have problems with age-appropriate reading, spelling, and/or writing.

Primary Need:
- Language delay
- Language disorder
- Specific language impairment

What Does the Research Say?
- Greater expressive language gains for treatments lasting more than 8 weeks. Law, et al., (2004)
- Greater language gains in preschoolers following concentrated (24 sessions over 6 weeks) vs. distributed (24 sessions over 24 weeks) practice Barratt et al, (1992)
- Randomised control trial compared 20 responses per 30 minute session 1 or 3 times per week – 4 hours of treatment as effective as 11 hours of treatment Ukrainetz et al. (2009)
- Frequent sessions (4x per week) and less frequent sessions (2x per week) yielded similar outcomes for print knowledge and phonological awareness as long as session dose was high• McGinty, et al. (2011)

Recommended Intervention dosage approx 15 hours (from NRP 2000)

Programs lasting less than 20 hours were more effective than programs lasting more than 20 hours.
10 hours of narrative intervention to 12 hours – 200% increase in effect size
12 hours of narrative intervention to 16 hours – 14% increase in effect size

Speech therapy

What does it involve?
Typically involves clinician-directed drill play, such as auditory discrimination and picture naming alongside child-directed naturalistic play.

Pupils who will benefits from speech therapy include: Children who are highly unintelligible; Children who have verbal apraxia; Children who have a history of hearing loss (including ear infections and/or chronic fluid on their ears) Children who have a cognitive delay; Children who have orofacial anomalies (e.g.cleft palate); Children who have a disordered phonological system

Primary need:
- Speech sound delay
- Speech disorder
- Speech delay
- Childhood apraxia of speech

What does the research say?

Dosage of therapy for speech disorders is a complex issue and ultimately the recommendations will be decided by the pupil's specialist clinician following assessment. If you would like to read more on therapy dosage please see the following presentation: [How Much is enough? Dosage in Child Language intervention. (Gillam et al 2012)](#)

We have summarised the main finding from literature in the notes below to give you an idea of the types of therapy that may be used with your pupils and the expected dosage and duration.

Cycles Therapy (Prezas & Hodson, 2010; Hodson, 2007)

Dose Form:Experiential -play (drill play)
Dose: Time-based (60 min for each target phoneme or cluster within a pattern of a cycle)
Session Duration: 20 min individual
Dose Freq: 2x /week 2-6 hours/cycle
Total Intervention Duration: Cumulative Intervention Intensity. Cycles are time-based, therefore, each phoneme receives 1-6 hours of intervention/ cycle
Recommended Dosage and Duration: 3 cycles, equivalent to 35 sessions (44 hours) over 15 months. 2 cycles, equivalent to 30 hours over a 9-month period

PACT (Parents and Children Together) (Bowen, 2009; 2010)

Dose Form: Focused stimulation (drill play)
Dose: NR
Session Duration: 40 minute individual (2x 20 mins)
Dose Frequency Blocks and breaks: (10 weeks each)
Total Intervention Duration: 2-3 blocks of intervention (30-40 weeks) 21 sessions
Recommended Dosage and Duration: Bowen & Cupples (1999) 22 cases involved in non-RCT from referral to dismissal: 21 sessions (equivalent to approximately 17.5 hours) over 10.6 months (range 3 – 19 months)

Core Vocabulary (Dodd, Holm, Crosbie, & McIntosh, 2010)

Dose Form: Drill
Dose: 100 -170 (number of drills per session)
Session Duration: 30 individual

Dose Frequency: 2x/week
Total Intervention Duration: 16 sessions (8 weeks)
Recommended Dosage and Duration: Only used to address limited speech sound stimulability– up to 6 weeks (12 sessions).

Stimulability Approach (Miccio & Williams, 2010)

Dose Form: Play- based (drill- play)
Dose: 50-60 responses
Session Duration: 45-50 minutes individual
Dose Frequency: 2x/week
Total Intervention: Duration 12 sessions
Recommended Dosage and Duration: Only used to address limited speech sound stimulability– up to 6 weeks (12 sessions).

For specific information on Speech, Language and communication interventions not discussed above please consider this list of further reading:

- **Vocabulary instruction** and effects on reading comprehension (Baumann, 2009).
- **Print referencing** (Breit-Smith, Justice, McGinty, & Kaederavek, 2009)
- **Narrative language intervention** (Hoffman, 2009)
- **Morphosyntax intervention** (Proctor-Williams, 2009)
- **Phonemic awareness** (Ukrainetz, 2009)
- **Early communication** and language impairment (Yoder, Fey, & Warren, 2012; Zeng, Law, & Lindsay, 2012)
- **Speech sound disorders** in children (To, Law & Cheung 2012; Williams, 2012)
- **Emergent literacy** (Schmitt & Justice, 2012)
- **Reading** (Kamhi, 2012)
- **Aphasia** (Cherney, 2012; Enderby, 2012)
- **Dysphagia** (Logemann, 2012)
- **Stuttering** (Packman & Onslow, 2012)
- **Motor speech disorders** (Manes & Robin, 2012)
- **Voice disorders** (Roy, 2012)

Social Interaction and Communication Therapy

What does it involve?
When using social communication interventions we draw on a large evidence base to inform interventions for children. Therapy interventions are based on the pupils area of need as identified in the assessment process and are designed to improve the client's social interactions

During the therapy process, information and guidance is communicated to families/caregivers, and teaching staff about the nature of disorders of social communication and the course of treatment.

Pupils who will benefits from speech therapy include: Pupils who have problems with social interaction (e.g., speech style and context, rules for linguistic politeness), social cognition (e.g., emotional competence, understanding emotions of self and others), and pragmatics (e.g., communicative intentions, body language, eye contact).

Primary need:
- Social interaction
- Social Cognition
- Pragmatics

What does the evidence say?

As with all speech and language interventions there are many factors affecting the therapy dosage. Each child's assessment dosage should be decided by a specialist speech, language and communication therapist. The ultimate goal of therapy is to improve social interactions in order that the pupils are able to access curriculum activities at the same level as their peers. That Pupils feel they are in a safe environment where they are able to communicate their needs.

The broad impact of social communication disorders necessitates service delivery models and individualised programs that lead to increased active engagement and build independence in natural learning environments. When developing a therapy program, speech and language therapists consider service delivery options that include both direct

and indirect ways to mediate social exchanges. Clinician-mediated interventions may be useful for teaching new skills, but are more limited in promoting generalisation of those skills. Where appropriate, intervention settings include environmental arrangement, teacher-mediated interventions, and peer-mediated interventions (Timler, 2008).

It has been suggested that successful programmes for children with ASD are those in which the 'dose' is intensive (a significant number of hours per week and rigorous levels of structure and instruction are introduced into the child's world (Eldevik 2009)).
In order to be successful Mable aims make changes through the school support system and family system in order to treat communication difficulties successfully (Oono et al 2013)

Collaborative Working:

Collaborative working involves professionals from various backgrounds working towards a common goal through shared decision-making (1).

Collaborative work between SLTs, teachers and TA's ensures that holistic, functional management of a child can be achieved. The professions inform and influence each other as without SLT academic progress is limited, however without support from TA's and teachers a child's speech, language, communication development is limited. Aside from parents, teachers are the people a child spends most time with. So by working with teachers and parents, SLT interventions can be implemented in a variety of settings, helping facilitate further support.

The SEND code of practice encourages inclusion of pupils, the policy recognises that this is achieved through high quality provision and collaborative working (2).

Mable Offer

Mable provides a one-to-one telepractice sessions to schools where teaching staff accompany the children to observe real-time practice. This allows teachers and TA's to watch intervention taking place so, with further training, they can apply the principles during their work with children.

Mable's flexible service delivery allocates discussion time for teaching staff into every session. The aim of this is to facilitate the SLT's knowledge of the child's academic progress and to train the teaching staff. Teaching staff are able book a time slot for one-to-one coaching at their convenience during breaks, PPA or out of school hours. As a member of teaching staff spends time with a child using Mable, they unlock specialist learning modules. These modules facilitate a deeper understanding of SLCN, which can be applied to any classroom environment and to specialist one-to-one work and contribute to CPD.

In terms of continued professional development and training, Mable offers high-quality specialist webinar training to teaching staff. This empowers teaching staff with SLCN training whilst not requiring any valuable time to be missed from the classroom.

What Does the Evidence Say?

Studies have shown that both SLT's and teaching staff see the value of collaborative working in providing effective provision for children (3). However, the current method of

working has areas for development, which the SLT's at Mable are constantly working towards achieving.

- New research has suggested that TA's are focused on task completion rather than aiding child development. This was found to be due to a lack of high-quality training in intervention and the quality of TAs' communication with pupils (4). A lack of training and preparation time of TA's contributes to the ineffectiveness of the current deployment.
- Collaborative working enables a transfer of knowledge and skills among professionals, consistency for a child and helps address both the curriculum and therapy (1).
- There is the potential for TA's to provide up to six months additional progress in a child (4). This is considerable and should be supported through effective joint work.
- A key barrier to collaborative working is the formal organisational structures surrounding the professions including: time-constraints, funding, methods of prioritisation, workload demands (5).
- For joint working to be effective, the SLT's service provision needs to be flexible and adaptable to the school setting. Each profession needs to have a clear understanding of the others roles (6).

References:

(1) Glover, A, McCormack, J, & Smith-Tamaray, M 2015, 'Collaboration between teachers and speech and language therapists: Services for primary school children with speech, language and communication needs', **Child Language Teaching & Therapy**, 31, 3, pp. 363-382, CINAHL Complete, EBSCOhost, [viewed 7 December 2016].
(2) Department of Education (2015), **Special educational needs and disability code of practice: 0 to 25 years** - Statutory guidance for organisations which work with and support children and young people who have special educational needs or disabilities. [Online] Available from: <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/398815/SEND_Code_of_Practice_January_2015.pdf> [viewed 7 December 2016].
(3) Hartus, D. (2004), 'Teacher and speech-language therapist collaboration: being equal and achieving a common goal?' **Child Language Teaching and Therapy.** 20, pp. 33-54,[viewed 7 December 2016].
(4) Sharples, J., Webster, R. & Blatchford, P. (2015), **Making Best Use of Teaching Assistants: Guidance Report**. [Online] Available from: <https://v1.educationendowmentfoundation.org.uk/uploads/pdf/TA_Guidance_Report_Interactive.pdf> The Education Endowment Foundation: London, UK. [viewed 7 December 2016].
(5) McCartney, E. (1999), 'Barriers To Collaboration: An Analysis Of Systemic Barriers To Collaboration Between Teachers And Speech And Language Therapists'.

International Journal of Language & Communication Disorders, 34, 4, pp. 431–440. [viewed 7 December 2016].

(6) Baxter, S., Brookes, C., Bianchi, K., Rashid, K., & Hay, F. (2009), 'Speech and language therapists and teachers working together: exploring the issues', **Child Language Teaching & Therapy**, 25, 2, pp. 215-234, [viewed 7 December 2016].