Paediatric speech-language pathology service delivery: An exploratory survey of Australian parents

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Consideration of client values and preferences for service delivery is integral to engaging with the evidence-based practice triangle (E\(^3\)BP), but as yet such preferences are under-researched. This exploratory study canvassed paediatric speech-language pathology services around Australia through an online survey of parents and compared reported service delivery to preferences, satisfaction, and external research evidence on recommended service delivery. Respondents were 154 parents with 192 children, living across a range of Australian locations and socio-economic status areas. Children had a range of speech and language disorders. A quarter of children waited over 6 months to receive initial assessment. Reported session type, frequency, and length were incongruent with both research recommendations and parents’ wishes. Sixty per cent of parents were happy or very happy with their experiences, while 27% were unhappy. Qualitative responses revealed concerns such as; a lack of available, frequent, or local services, long waiting times, cut-off ages for eligibility, discharge processes, and an inability to afford private services. These findings challenge the profession to actively engage with E\(^3\)BP including: being cognisant of evidence-based service delivery literature, keeping clients informed of service delivery policies, individualizing services, and exploring alternative service delivery methods.

Keywords: Speech language pathology service delivery, parent perspectives, waiting lists, evidence-based practice, parent satisfaction.

Introduction
The evidence-based-practice triangle (E\(^3\)BP; Dollaghan, 2007) is defined as the balanced consideration of three factors when determining what constitutes the best alternatives for a particular client in a particular context. These factors are external research evidence, internal practice-based evidence, and the preferences of a fully-informed client (Dollaghan, 2007; Lof, 2011). Employing E\(^3\)BP allows clinicians to identify appropriate intervention for a client while engaging in family-centred practice and considering service-delivery constraints (Dollaghan, 2007). However, in the “real vs ideal” world of speech-language pathology, there is a need to incorporate a range of competing constraints (Hersh, 2010). At times, best evidence and family preferences may be overlooked in order to manage service delivery policies, prioritization of services, or an ethos of equal access to all despite limited resources (McCARTney, 2000; Wilson, Lincoln, & Onslow, 2002). This can result in waiting lists, restrictions on the amount of intervention, cut-off ages, and discharging clients prematurely (Baker, 2010).

There is limited research into paediatric service delivery practices around Australia and whether services match either evidence-based external recommendations or parent preferences. This study aims to address these gaps. The internal, practice-based evidence aspect of the E\(^3\)BP triangle, while important, is beyond the scope of this study.

Service delivery: Evidence and actual practice
Across many disorders, the best available external evidence suggests children with speech and language disorders typically require individual intervention with a trained clinician, at least once a week for many weeks (Baker & McLeod, 2011; Jones, Onslow, Packman, Williams, Ormond, Schwarz, et al., 2005; Law, Garrett, & Nye, 2004). Additionally, there is evidence for the efficacy of group and telehealth intervention which also advocates the need for regular therapy (Law et al., 2004; Lewis, Packman, Onslow, Simpson, & Jones, 2008). However, what actually happens in clinical settings? Little is known about typically-occurring Australian service delivery and
the majority of data available internationally focuses on therapy dose.

**Therapy dosage commonly received: International trends.**

A common service delivery pattern across Canada, the UK, and Europe has been for 75–85% of children to receive individual 30–60 minute sessions with a clinician once a week, although a wide range from once a year to 5-times a week is reported (Carroll, 2010; Keilmann, Braun, & Napiontek, 2004; Thomas-Stonell, Oddson, Robertson, & Rosenberg, 2009). In the US, the most common service delivery model for primary-aged children was one-to-two sessions per week for 20–30 minutes (Brandel & Loeb, 2011).

**Constraints on delivering therapy: External evidence and potential directions.** Many clinicians report not having sufficient time or resources to implement evidence-based intervention. For example, in Australia, only 55% of clinicians reported adhering to the published protocol for the Lidcombe fluency program, citing large caseloads as a primary reason for this failure (Rousseau, Packman, Onslow, Robinson, & Harrison, 2002).

There is a recognized shortage of speech-language pathologists in Australia (Department of Education Employment and Workplace Relations, 2009; McLaughlin, Lincoln, & Adamson, 2008). These service shortages have been noted in specific areas such as adolescent language impairment and mental health and juvenile offenders (Caire, 2009; Hollands, van Kraayenoord, & McMahon, 2005). Service shortages can result in long waiting lists as noted by Bowen (2010, p. 407):

> ... waiting lists for understaffed, under-resourced publicly funded services were and are long. The services themselves were and are often scant, with some children waiting 18 months to 2 years for assessment that might turn out to be comprehensive or cursory.

Average waiting times reported both internationally and in Australia, for receiving direct intervention, have clustered around 3–6 months, with some children waiting for as long as 2 years (Keilmann et al., 2004; O’Callaghan, McAllister, & Wilson, 2005). This discourages other health professionals from making referrals to speech-language pathology, with some Australian paediatricians reporting that they “don’t bother referring most cases, as therapy is unlikely” (Keating, Syrmis, Hamilton, & McMahon, 1998, p. 453). Staff shortages also lead to reduced therapy dosage. In the UK, children with communication disorders typically received a total of 6 hours of intervention (Law & Conti-Ramsden, 2000). This dosage did not produce significant outcomes for children (Law & Conti-Ramsden, 2000) and was identified as a “constraint imposed on [clinicians] by the ‘package of care’ model of service delivery” (Law & Conti-Ramsden, 2000, p. 909).

Equity across geographical areas and incorporation of logistical factors is also a pertinent issue when forming service delivery policies. Access barriers in rural areas have included limited or no services, long travel distances, high travel expenses, and limited public transport (Australian Government Productivity Commission, 2005; O’Callaghan et al., 2005; Verdon, Wilson, Smith-Tamaray, & McAllister, 2011). For example, parents in rural New South Wales (NSW) reported travelling an average of 143 km to attend therapy (Wilson et al., 2002) and 98.6% of rural localities surveyed in NSW and Victoria (VIC) were not serviced at the recommended frequency (Verdon et al., 2011). Tellingly, in England and Wales, equity in paediatric speech-language pathology services has been described as a “postcode lottery” (Bercow, 2008). This could well be the case in Australia, but to date no national investigation of access to speech-language services has occurred.

In the US, school-based clinicians reported they chose service delivery options based on students’ needs and disorder severity. However, analysis revealed that therapy intensity and service delivery varied very little across disorder types and severity, whereas caseload size was found in some instances to be a significant influence (Brandel & Loeb, 2011). Specifically, high-school aged children with severe disorders were unlikely to receive more frequent therapy than those with mild disorders. Further, the larger the caseload became, the more likely it was for pre-school aged children to receive less intense therapy, or therapy in a group rather than individual sessions (Brandel & Loeb, 2011).

Overall it appears that staff shortages, large caseloads, availability of services, and geographical location can influence the way EBP is administered in terms of waiting times and the amount and type of therapy offered.

One potential approach to managing large caseloads across diverse areas of Australia is computer or video-game based therapy. Recent findings in rural areas indicate that clients had better access to and more positive attitudes towards the use of technology-based speech-language pathology than clinicians expected they would (Dunkley, Pattie, Wilson, & McAllister, 2010). Unfortunately, rural speech-language pathologists reported having easy access to computers and email but not to other common devices accessible by clients such as DVDs and recording equipment (Dunkley et al., 2010). Parents’ and clinicians’ accessibility and willingness to engage with technology-based systems could motivate research into alternative and more sustainable service delivery options.

**Availability of services: Anecdotal evidence.** Anecdotes about availability of speech-language pathology services in Australia are readily found in the media. In
Grafton, NSW, waiting times had parents “up in arms” (Howard, 2010). In the Australian Capital Territory (ACT), several parents travelled to larger town centres in NSW to find shorter waiting times (Sherlock, 2008). Despite employing extra staff, school-based services in Victoria (VIC) continued to have waiting times of over a year (Craig, 2010). The first private clinic in Alice Springs in 5 years aimed to make intervention more accessible (Centralian Advocate, 2010). “Disturbing data” revealed that waiting times in Western Australia were 17 months long in December 2009; twice as long as 8 months previously (Thompson, 2010). These examples highlight the concerns of many parents across Australia and are informative in the context of a lack of available objective data; however, it is important to acknowledge that these anecdotal accounts are subject to editorial bias and sensationalism.

Parents’ service delivery preferences and satisfaction

The Australian context. At present, Australian legislation does not specifically recognize children with communication disorders as requiring minimum access to therapy. Each state and territory has differing policies and definitions, allowing children to go unidentified or under-supported (McLeod, Press, & Phelan, 2010). Again, a consistent picture is emerging from the limited available Australian data. Australian parents whose children were identified with speech concerns expected that services would be available to their child when required and were concerned when these expectations were not met (McAllister, McCormack, McLeod, & Harrison, 2011). Over 85% of parents from various locations around Australia have indicated that a lack of services was of concern and that waiting times, especially of 6 months or longer, were unacceptable (McAllister et al., 2011; O’Callaghan et al., 2005). Victorian parents of children with complex communication needs reported dissatisfaction with the quantity of services and transitioning between different services (Perry, Reilly, Bloomberg, & Johnson, 2002). To alleviate such concerns, parents suggested increased government funding, greater collaboration between schools and clinicians, increasing the number of clinicians in rural areas who will travel to clients, and greater regularity of services (O’Callaghan et al., 2005; Perry et al., 2002). Despite these preliminary findings, to date no Australian research has investigated parents’ service delivery preferences or satisfaction on a national scale.

The international context. Parent perspectives on service delivery in other western countries, such as the UK and Ireland, appear similar to Australia. A third of parents in the UK felt that there was a shortage of speech-language pathologists, which limited access to intervention (Bercow, 2008). Many parents described a decrease or complete “disappearance” of services as their children grew older (Bercow, 2008). In interviews, parents of children in UK government-funded services believed there would be superior, long-term outcomes and fewer demands on resources if therapy started earlier in life (Band, Lindsay, Law, Soloff, Peacey, Gascoigne, et al., 2002). They were often unaware of behind-the-scenes decisionmaking by clinicians, leaving them feeling disempowered in the therapy process (Band et al., 2002). Parents believed that if frequent therapy sessions were not possible, the reasons for this should be explained to them (Band et al., 2002).

In Ireland, parents of children with intellectual disability attending speech-language pathology services were concerned that intensive therapy was not consistently accessible beyond adolescence (Carroll, 2010). Some parents believed that group therapy fostered social skills while others believed that their child required individual attention. One third of parents preferred more frequent sessions and 75% reported they did not want to become more involved in therapy (Carroll, 2010).

Complementing these findings, parents in Germany, whose children attended therapy more frequently and for longer periods, reported greater satisfaction than those parents whose children attended less frequently (Keilmann et al., 2004). Around three-quarters of children in Germany were given homework, with 60% of parents reporting positive attitudes towards this (Keilmann, 2010). German parents also viewed homework as easier to complete the longer children had been in therapy (Keilmann et al., 2004).

Overall it appears that parents are more satisfied when their children are receiving frequent services over a long period of time, regardless of their child’s age. Unfortunately some of the parameters used to define service delivery are poorly described, making comparison difficult. It is reasonable to expect, however, that if such factors as therapy frequency, length of therapy period, service availability for older children, or homework can influence parents’ satisfaction levels internationally, similar influences may be found in Australia.

Purpose of the present study. This study was designed to be exploratory in nature and reveal results which would fuel hypotheses for future research and therefore no pilot was conducted. The study aimed to canvas parent reports of experiences related to the following research questions:

1. What is the nature of speech-language pathology service delivery in Australia? This includes variations according to demographic variables such as state, location, SES, and type of practice attended and issues such as homework and access to computer-based technologies.

2. How do parents’ preferences for service delivery compare to actual experiences?
(3) What is parents’ overall satisfaction with speech-pathology service delivery and what are their suggestions for improving it?

(4) How do the reported service delivery experiences compare to evidence-based recommendations for service delivery?

Given the exploratory nature of this study, formal research hypotheses were not formulated.

**Method**

The research was approved by The University of Sydney Human Research Ethics Committee. Parents were recruited to the survey through advertisement on the university website and an emailed flyer which was sent to a national paediatric listserv, individual paediatric speech-language pathology practices, community-based parent groups, and specific disability interest groups from around Australia. A reminder email was sent out after 10 weeks. Adults of 18–70 years of age who were the parent or primary caregiver of a child (0–18 years of age) living in Australia with a speech or language disorder and whose child was currently waiting for/currently receiving/previously receiving speech-language pathology services were invited to complete the survey. Respondents were 154 parents representing 192 children.

**Survey design**

Following an unproductive search for existing surveys on service delivery to use as a model, a survey was designed to canvass service delivery issues in the Australian context. The online survey contained 50 questions, some of which had sub-questions. There were 42 forced-choice questions, 31 multiple choice and 17 binary choice questions. Eight questions required a prose response either to clarify reasons for forced-choice responses or elicit qualitative comments. Drop-down boxes had a blank in the first row to avoid response bias from failure to respond. Open questions were worded in a neutral manner to avoid biased responses. Parents of children who were waiting for services were only required to answer questions on demographics, waiting times, and satisfaction. Although we discuss satisfaction throughout this article in line with other similar studies, the survey itself asked parents to describe their satisfaction based on how happy they were.

The online survey took ~20 minutes to complete. An online survey was selected for cost-effectiveness and to ensure parents' responses remained confidential and free of bias associated with submitting surveys via their speech-language pathologist or a third party.

The survey consisted of the following, and can be provided on request by the authors.

(A) An introduction page.

(B) A demographics section included questions about the families’ place of residence, how many children they had involved in speech-language pathology services, and their ages, diagnoses, and any additional disabilities.

(C) Received services sections covered service delivery factors such as length of wait for assessment and therapy, frequency, type and amount of therapy, breaks from therapy, and time until discharge.

(D) Preferred service delivery sections asked parents if they had alternate preferences for service delivery to those they were receiving.

(E) Satisfaction sections asked parents how satisfied they were with overall services received and whether they were satisfied with aspects of service delivery, such as session frequency.

(F) A final comments section asked parents for any further comments on availability and improving services.

**Coding and reliability**

Free-text responses were coded for main themes by the first author and a researcher independent to the study. Inter-rater reliability was 91% and coding discrepancies were resolved by discussion until consensus was reached. Socio-Economic Status (SES) was coded into high, medium, and low by comparing parental postcode with percentile SES for individual postcodes around Australia and collapsing these into three groups (ABS, 2006). Inconsistent responses were excluded from analyses, for example; two responses for one question when the parent only had one child.

**Data analysis**

Analysing responses for all children went against the assumptions of between-subject independence necessary for the selected non-parametric analyses; however, not including responses for all siblings within a family resulted in a loss of 20% of the survey data. Therefore, analyses were run twice and compared: inferential statistics were performed once on a data set containing responses pertaining to parents’ first child only, and then again on a second data set containing the responses for all children. Unless specified, all $p$-values reported have been drawn from the second data set containing all children’s data and are only reported where both data sets produced a significant result. $p$-values of $\leq .01$ were considered statistically significant to adjust for multiple comparisons and the preliminary nature of the study.

For two categorical variables such as satisfaction and state, Chi squared tests of independence ($\chi^2$)
were performed. The majority of categorical variables were further collapsed to produce valid expected frequencies. Continuous variables such as age were converted to appropriate categories, such as “pre-school age”. For interval variables compared with nominal variables of two levels or more, for example age and satisfaction, Mann-Whitney U (U) and Kruskal-Wallis one-way ANOVA (H) analyses were performed, respectively.

The variables satisfaction, SES, state, and provi- sion of services in schools were run against all other variables in the study. Comparisons related to the research questions and plausible variation of service delivery across different populations were also run, for example “Is waiting time associated with type of practice attended?” Only irrelevant relationships were excluded from inferential analyses, for example “Is waiting time associated with computer access?” In many cases only the states New South Wales (NSW), Queensland (QLD), and Victoria (VIC) could be included in inferential analyses as including the other states; who had fewer responses per state, violated the necessary conditions for \( \chi^2 \) analysis.

## Results

### Demographics

One hundred and sixty responses were received. Of these, six were discounted due to incomplete or double submissions. Thus, 154 responses were included in analyses. Of these, 26 parents had two children and six parents had three children in speech-language pathology services. The 192 children ranged from under-2 to 18-years-old and ranged from; 0 – 4 months (13%), 5–7 years (31%), 8–12 years (30%), or 13–18 years (5%). Six per cent of children in the survey were still waiting for assessment or therapy, while 27% had been discharged.

As shown in Table I, parents represented all the states and territories of Australia, although 81% came from NSW, QLD, or VIC. Parents lived in a range of town and community sizes. Socioeconomic status (SES) distribution was high (36%), middle (42%), and low (20%). The distribution of parents across states and SES was comparable with population distribution (ABS, 2006, 2010), with the exception that fewer parents from VIC and more parents from South Australia (SA) answered the survey than may have been expected.

### Diagnoses

Children were reported to have a range of speech and language disorders, most commonly including specific language impairment, language delay, or disorder (40%); childhood apraxia of speech (35%); articulation or phonological disorder (21%); auditory processing disorder (10%); or literacy impairment or dyslexia (11%). Twenty-six per cent of children were reported to have two or more diagnoses. Thirty-nine per cent of parents reported that their child had a long-term disability or developmental difficulty such as Autism spectrum disorder or Down’s Syndrome. Eight per cent of children were reported to have more than one disability.

### Waiting times

The most common length of waiting time for initial assessment across the country was 2–6 months (\( n = 44, 23\% \)), followed closely by 1–4 weeks (\( n = 43, 23\% \)), and 1–2 months (\( n = 40, 21\% \)), with a range of less than 1 week (\( n = 8, 4\% \)) to longer than 1 year or still waiting (\( n = 29, 15\% \)). Following initial assessment, children most commonly waited up to 1 month for therapy to commence (\( n = 78, 42\% \)), although 12% (\( n = 23 \)) waited 6 months or longer, with a range of less than 1 week (\( n = 22, 12\% \)) to longer than 1 year or still waiting (\( n = 18, 10\% \)).

Waiting times differed across state and service provider (see Figures 1 and 2). Waiting times of longer than 12 months were more common in QLD compared to NSW or VIC (\( \chi^2 (4, n = 147) = 14.441, p = .006 \)). Families who encountered a long wait for

### Table I. Number of parents by State/Territory and size of population centre (\( n = 152 \)).

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>NSW</th>
<th>VIC</th>
<th>QLD</th>
<th>WA</th>
<th>TAS</th>
<th>SA</th>
<th>NT</th>
<th>ACT</th>
<th>Total</th>
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<td>n %</td>
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<tr>
<td>Capital city</td>
<td>29</td>
<td>19</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>50</td>
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<tr>
<td>Regional city</td>
<td>16</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>15</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>39</td>
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<tr>
<td>Large country</td>
<td>8</td>
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<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>17</td>
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<td>Small country</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Rural/remote</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>42</td>
<td>20</td>
<td>13</td>
<td>40</td>
<td>26</td>
<td>9</td>
<td>6</td>
<td>152</td>
</tr>
</tbody>
</table>

NSW, New South Wales; VIC, Victoria; QLD, Queensland; WA, Western Australia; TAS, Tasmania; SA South Australia; NT, Northern Territory; ACT, Australian Capital Territory.

Population centres varied according to definitions from the Australian Bureau of Statistics. Parents selected their own category after being given an example.
assessments were likely to also encounter a long wait for therapy ($\chi^2 (4, n = 186) = 55.604, p < .000$).

**Session service delivery**

The majority of children in the survey attended private practices ($n = 73, 44\%$) or community health services ($n = 51, 30\%$), with the remaining receiving services from school/pre-school ($n = 17, 11\%$) or another service ($n = 26, 13\%$). The type of practice attended was not found to significantly differ based on state ($\chi^2 (4, n = 127) = 9.105, p = .059$) or child's age ($\chi^2 (6, n = 154) = 14.7, p = .02$). Children in capital cities attended private practices more frequently than those from small towns or rural and remote areas ($\chi^2 (4, n = 151) = 15.224, p = .004$), and children from lower SES areas attended private practices less often than children from high-SES areas ($\chi^2_{\text{Yates}} (1, n = 97) = 45.186, p < .000$). Three-quarters of children attended sessions at the service provider's clinic and 16% at school/pre-school.

Eighty-eight per cent of children ($n = 147$) received individual therapy, 13% ($n = 22$) were given parent training or a home program, and 7% ($n = 12$) received group therapy. Thirty-four per cent of parents ($n = 28$) were not receiving the session type they most preferred for their child. Forty-three per cent of parents ($n = 42$) were involved in making a decision about therapy goals for their children. Forty-six per cent ($n = 23$) of parents attending private or university practices were given a choice in goals, while only 29% ($n = 8$) attending community health or hospital-based services were; however, this difference was not significant ($\chi^2_{\text{Yates}} (1, n = 78) = 1.07, p = .154$).

Received and desired session frequencies are outlined in Figure 3 and differed significantly ($\chi^2_{\text{Yates}} (1, n = 130) = 15.916, p < .000$) such that no one currently receiving one or more sessions per week wanted fewer, while many of those receiving sessions less frequently than once per week wanted more. Fifty-three per cent of families attending private or university practices attended therapy once a week or more often, while only 27% of those attending community health or hospital-based services attended once a week or more often ($\chi^2_{\text{Yates}} (1, n = 134) = 8.649, p = .003$). The longest duration of ongoing therapy

![Figure 1. Length of waiting time for assessment by State (n = 186).](image1)

![Figure 2. Length of waiting time for assessment by Service Provider (n = 165).](image2)

![Figure 3. Comparison of session frequency received (n = 191) and preferred (n = 147).](image3)
for a child, not including breaks, ranged in length from one-to-four sessions ($n = 28$, 15%) to over 2 years ($n = 34$, 18%). The most common length of session was 30–44 minutes ($n = 87$, 51%). Provided and preferred session length differed significantly ($\chi^2$ Yates (1, $n = 97$) = 41.186, $p < .000$), with 18% ($n = 28$) of parents reporting their child received sessions shorter than 30 minutes, while only 9% ($n = 9$) desired this length. Reported session length did not significantly differ according to child’s age or session frequency.

**Parent preferences**

Some parent preferences have been noted above, alongside their respective inferential statistics. Stand alone results include that 80% ($n = 79$) of parents indicated they would like their children to receive individual sessions. Only 4% ($n = 4$) of parents indicated that they would prefer parent training or a home program. The most commonly preferred session frequency was once per week (46%, $n = 62$), while the most commonly preferred session length was 30–44 minutes (51%, $n = 87$).

**Breaks and discharge from therapy**

Thirty-two parents (44%) indicated that they had at least one child who was on a break from therapy. Seventy-three per cent ($n = 27$) of parents reported they did not contribute to the decision for their child to have a break from therapy, while 76% ($n = 28$) believed their child should not currently be on a break. The most common length of break was 1–3 months ($n = 14$, 38%), with a range of 1–24 months. Breaks from therapy which were 24 months long (or longer) were still considered as a break as there was not sufficient information to determine if parents’ views matched those of their clinicians and the active client list at their service.

Fifty-one parents (52%) indicated that they had at least one child who had been discharged from therapy. Total time in therapy before a child was discharged is outlined in Figure 4, while age at discharge is shown in Figure 5. Children were most commonly reported to be discharged at age 5–6 years across all states and territories. The most common reasons for breaks and discharge were “Child had improved” ($n = 20$, 35%) or service delivery issues ($n = 25$, 43%), such as reaching the service’s upper age limit ($n = 10$, 17%). Sixty per cent of parents believed that their child’s discharge was inappropriate for reasons such as “Child had not improved enough” or “Concern for the future”. Six per cent of parents ($n = 3$) whose children had been discharged reported that they were never formally discharged but simply not contacted again or did not know the reason for discharge.
Parent survey on paediatric service delivery

Homework

Regular homework was given to 76% \((n = 74)\) of children currently receiving therapy. Amount of homework ranged from none \((n = 2, 3\%)\) to 5 + hours per week \((n = 7, 9\%)\) or ongoing, regular practice (as in reminders required for fluency programs, \(n = 15, 19\%\)). One-to-two hours per week \((n = 35, 45\%)\) was the most common amount. Families in rural and remote areas received less homework than those in larger towns or capital cities \((\chi^2 (2, n = 96) = 9.26, p = .01)\). More families from VIC, compared to NSW or QLD, received greater than 2 hours of homework per week \((\chi^2 (2, n = 69) = 18.357, p < .000)\). Fifty-two per cent \((n = 49)\) of children on a break or discharged were given a home program to complete and 85% \((n = 40)\) of these were reported as completed.

Computer use

Ninety-seven per cent \((n = 138)\) of children had access to a computer at home and 92% \((n = 127)\) of these had broadband internet. Forty-two per cent \((n = 60)\) of children had access to a video game console.

Computer-based homework had been given to 17% \((n = 25)\) of families. Most parents \((n = 138, 93\%)\) of children 3 years or older indicated they would be willing to help their children with computer-based homework because they were familiar with using technology or helping their children with regular homework. A lower proportion \((77\%, n = 14)\) of parents with children under 3 years indicated they would be willing to use computer-based therapy with their children, with those parents less keen reporting their child was “too young”.

Satisfaction

Sixty per cent of parents \((n = 92)\) were happy or very happy with their overall speech-language pathology experiences, while 27% \((n = 42)\) were unhappy or very unhappy and 13% \((n = 19)\) felt neutral. Reasons for the satisfaction ratings given in qualitative responses included service delivery factors \((n = 79, 51\%)\) such as availability of services; clinician factors \((n = 37, 25\%)\) such as a caring clinician; and child factors \((n = 20, 13\%)\) such as therapy progress. Upon further investigation of qualitative responses, 46% \((n = 41)\) of all parents who reported some degree of satisfaction with overall speech-language pathology experiences still reported dissatisfaction surrounding availability of services.

Satisfaction was found to vary significantly by state, with parents from QLD more frequently unhappy than parents in NSW or VIC \((\chi^2 (4, n = 151) = 16.973, p = .002)\). Parents from high-SES areas expressed greater satisfaction than those from lower-SES areas \((\chi^2 (4, n = 188) = 17.553, p = .002)\). Parents waiting longer from initial assessment to commencing therapy expressed greater dissatisfaction \((\chi^2 (2, n = 185) = 16.458, p < .000)\). Parents receiving sessions less than once a week were less happy that parents whose children attended more frequently \((\chi^2 (2, n = 162) = 10.888, p = .004)\). Satisfaction did not vary significantly by type of service provider, size of town, length of wait for initial assessment, session length, longest therapy block provided, whether parents were given a choice in therapy goals, or children’s speech-language pathology diagnoses or additional disabilities.

Additional findings

The availability of local services was rated as insufficient or unavailable by 89% \((n = 120)\) of parents. Ten parents from rural and remote areas described travelling hundreds of kilometres to access services. Five from large metropolitan areas such as the NSW Central Coast reported leaving their areas and travelling to capital cities to find satisfactory services. The most common suggestions parents gave for improving services are presented in Table II and included more services and clinicians, shorter waiting times, more affordable services and rebates, and greater flexibility.

Discussion

This study is the first survey to canvass service delivery across Australia and seek the opinions of parents

Table II. Percentages of parents who advocated specific changes to speech-language pathology service delivery models \((n = 135)\).

<table>
<thead>
<tr>
<th>Specific changes suggested for service delivery</th>
<th>%</th>
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<tbody>
<tr>
<td>More services, including: More frequent sessions, longer sessions, longer blocks, shorter breaks between blocks,</td>
<td>46</td>
</tr>
<tr>
<td>more follow-up, more services in rural and remote areas</td>
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<tr>
<td>Greater numbers of clinicians</td>
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<td>Shorter waiting times before initial contact</td>
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<td>Medicare or health funds should provide greater subsidies for services</td>
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<td>Private services should be more affordable</td>
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<td>Parents, teachers, and clinicians should collaborate and form mutual goals</td>
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<td>Clinicians should be employed in every school and day care centre</td>
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<td>Smaller towns, rural, and remote areas need clinicians who stay longer than a year</td>
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<td>More flexibility in service delivery including location, times of sessions, and therapy style</td>
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<tr>
<td>More research into and more clinicians specializing in Childhood Apraxia of Speech</td>
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*Qualitative responses were coded for up to five main ideas.
whose children have been involved in speech-language pathology services. Service delivery experiences, preferences, and satisfaction were surveyed.

While many aspects of speech-language pathology experiences and contact around the country were regarded positively, parents were dissatisfied specifically with waiting times and a perceived lack of local, frequent services; “The waits for public speech pathology services are unacceptable. I have not even attempted to access public service this time around. The cost of a private provider is high and we have been forced to make some difficult choices” (Resp #11, Regional city, NSW).

A discussion of the three main research questions is presented below and comparison to external research evidence, the fourth question, is made within each section.

**Service delivery experiences**

Waiting times varied across locations, but parents often reported waiting for months; a finding consistent with previous research (O’Callaghan et al., 2005) and anecdotal accounts in the media. Long waiting lists are of concern, particularly when they distress parents, are contra-indicated by treatment literature; as in paediatric stuttering (Lewis et al., 2008), or are associated with negative long-term outcomes for the child (Johnson, Beitchman, & Brownlie, 2010).

Reported session length and frequency, which were commonly 30–45 minute sessions provided around one-to-four times per month, were comparable to previous international studies (Carroll, 2010; Keilmann et al., 2004; Thomas-Stonell et al., 2009). Many children accessed direct services less frequently than is recommended in treatment literature; with few children receiving, for example, the two-to-three sessions per week recommended for children with speech sound disorders (Baker & McLeod, 2011) or daily sessions for children with Childhood Apraxia of Speech (Ballard, Robin, McCabe, & McDonald, 2010). In these instances, sessions did not appear to be longer to make up face-to-face time. Interestingly, the most common length of therapy before discharge was 1–3 months, while the most common session frequency was once or twice a month. Although many children across the study received longer or more frequent sessions, this suggests that there are children around Australia who receive between one and six sessions before discharge from speech-language pathology services. The available evidence, that “6 hours of therapy is not enough” (Law & Conti-Ramsden, 2000, p. 908), would suggest that those families from the survey who reported attending a limited number of sessions or attending infrequently, are unlikely to witness significant changes in their children’s speech and language skills.

When individual sessions were not possible, it does not appear that homework or alternative methods of service delivery such as telehealth, computer-based therapy, or use of therapy aides were utilized extensively. External evidence suggests that such alternatives can provide ongoing support to supplement mainstream options or produce results which are just as efficacious (Law et al., 2004; Lewis et al., 2008).

With respect to the homework experience, 76% of Australian children receiving speech-language pathology services were given regular homework. This is comparable to Germany, where 75% of children receive homework (Keilmann, 2010). Australian families living in small country towns or rural and remote areas were, however, less likely to be given homework than families in larger towns, which is concerning given that families in smaller towns also reported attending fewer face-to-face sessions. These findings could highlight concern for the overall dosage of intervention children are receiving, be it face-to-face or home-based.

Families from small towns and rural and remote areas appear to travel further and have fewer options for intervention than those from large or capital cities; “Our nearest city (600 km) does not have enough [private] professionals and they have very long waiting lists, or have closed their books ...” (Resp #25, rural/remote QLD). This is consistent with previous research (Wilson et al., 2002). Unsurprisingly, families from higher SES areas and capital cities attended private practices more commonly than those from low SES or rural and remote areas. This may be due to a combination of affordability and having more service options available in larger cities.

The discharge experience reported by Australian families warrants attention. The most common age of discharge in Australia was 5–6 years, which is concerning given that it is well established that children with speech and language disorders are at risk for literacy difficulties and academic failure when they reach school age (Nathan, Stackhouse, Goulandris, & Snowling, 2004; Young, Beitchman, Johnson, Douglas, Atkinson, Escobar, et al., 2002). Furthermore, a large number of children were discharged due to service delivery reasons rather than therapy progress.

**Service delivery preferences**

Service delivery was incongruent with parents’ wishes and perceived needs. Parents wanted shorter waiting times and more frequent and longer sessions. They wanted greater support between assessment and intervention, as has been previously reported (Donaldson, McDermott, Hollands, Copley, & Davidson, 2004). They were also keen for alternative methods of service delivery to be offered if that would fill a gap; “On-line training for parents once a child has been assessed face-to-face could help the wait” (Resp #114, capital city, NSW). However, parents expressed a strong preference for individual sessions once therapy commenced which matches previously reported mixed feelings over group sessions (Carroll,
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Satisfaction

Parents’ reported levels of satisfaction revealed over 50% were happy or very happy with speech-language pathology services; however, there were some observed demographic differences. Greater dissatisfaction in QLD was possibly due to a higher proportion of parents in QLD coming from rural and remote areas compared to the distribution in other states. However, QLD parents from large regional towns or small capital cities were, in some cases, equally as dissatisfied as parents from rural and remote areas, despite having access to more providers and shorter travelling distances. Parents from high SES areas were more frequently happier with services than those from lower SES areas, which may be mediated by factors such as waiting times or attendance at public vs private providers.

Determining the reasons for the differences in satisfaction between specific groups is beyond the scope of this study. However, these reasons should be further investigated so that factors decreasing satisfaction can be addressed in service delivery planning.

More than half of parents indicated dissatisfaction with the discharge process or their child’s age at discharge. Again, it would appear that parent’s perspectives are not being duly considered, but deprioritized in the name of policy.

Regarding overall satisfaction, it is important to note that the relevant survey question was not specifically aimed at service delivery and parents took into account other factors when answering this question, such as satisfaction with the treating clinician or therapy progress which may have inflated the overall satisfaction figure. Additionally, qualitative responses revealed shifts in satisfaction over time as parents changed providers “I was very happy with my private provider but very very unhappy with the Area Health Service provision” (Resp #11, regional city NSW).

Influences on satisfaction

Parents’ satisfaction was significantly related to waiting time following assessment. This may be due to an increased awareness of the severity of their child’s difficulties following an assessment at which point they may more readily identify that their child needs therapy. Parents attending infrequent services were less happy with services than those parents attending once weekly or more, in accord with previous research (Band et al., 2002; Perry et al., 2002).

Parents wanted services to seem more individualized “Spaths [sic] who can write confident and convincing reports not repeat a whole lot of jargon from other professionals” (Resp #93, capital city, VIC), and were dissatisfied when this sincerity was perceived as lacking. There was also a feeling that clinicians did not genuinely engage with families, also reported in the UK (Band et al., 2002). This sentiment is linked to the finding that less than 50% of parents felt engaged in the goal-forming process. Interestingly, these data are consistent with the finding that fewer than half of Australian clinicians (42%) believe that parents should have the final say in goal selection (Watts-Pappas, McLeod, McAllister, & McKinnon, 2008), which suggests clinicians’ attitudes could play a role. Parents suggested “Being offered ‘options’, perhaps a yearly contract/plan which truly has family input” (Resp #15, small country town, NSW) as a clear preference.

Some parents expressed confusion over discharge; “I don’t really feel the kids were ever ‘discharged’, they were kind of left – i.e., no more appointments booked” (Resp #44, large country town, NSW). Parents were more satisfied if the service delivery policies were transparent, as in the UK (Band et al., 2002), and follow-up support was offered. Similarly, Hersh (2009) reported that adult patients with aphasia were similarly more accepting if they were warned that discharge was inevitable, if they had contributed to the decision-making process, and felt follow-up support was available.

Parents were angered that their children had become ineligible for public services at a certain age, particularly if they had endured a long waiting list only to reach the upper limit of services soon after. “By this time I was so pissed off with the public system that we continued therapy with the private speech pathologist until both our private health cover and spare funds ran out—about 1 year” (Resp #120, regional city, NT). This is similar to parents in the UK who feared they would lose services over time (Band et al., 2002; Bercow, 2008).
Limitations

Although the survey sample represented Australian families from all states, SES, and locations, it cannot be considered a random or representative sample of the population. Additional demographic factors which may influence perceptions of or opinions on speech-language pathology services such as parental education or cultural background were not explored here. The voluntary nature of completing surveys predisposes the sample to those families particularly pleased or upset at their experiences and who are thus motivated to share their experiences. Those families with lower computer literacy levels or limited computer access may also have faced additional challenges in completing the survey. Children reported as having Childhood Apraxia of Speech were over-represented in this sample (35%) compared with an estimated 1% population prevalence in the US (American Speech-Language-Hearing Association, 2007). CAS prevalence has not been systematically investigated in Australia. Although the Australian Dyspraxia Association was asked to pass the survey link onto its members, the high response rate is perhaps also related to the motivation bias discussed above. Lastly, the survey was passed onto potential respondents by organizations and clinicians. The extent to which these professionals advocated on our behalf could be influenced by a range of positive and negative personal or professional issues. These issues aside, the use of an internet survey to seek parental experiences and preferences nationwide warranted a recruitment approach that was not only far-reaching but multifaceted.

Implications

Parents are concerned for the many long-term consequences their children will potentially face “... time spent on my child now not only saves the community from dollars later on, it also affects my child, and her whole life, it is personal, not just some spreadsheet” (Resp #15, small country town, NSW). Given the strong evidence on the long-term consequences of speech and language disorders, there are inevitably significant personal and economic ramifications if children are not provided with necessary therapy (Johnson et al., 2010; Ruben, 2000). Consequently there are several areas which the profession should consider with regard to service delivery policies and practices, discussed below.

The adoption of an EBP philosophy requires that external evidence on service delivery be followed as closely as possible. The long waiting lists and infrequent services reported in this study fail to uphold this process (Dollaghan, 2007). There is a clear need for clinicians and managers to be cognisant of the external evidence for therapy dosage when planning service delivery and when advocating for their clients during policy reform at both local and national levels.

Our study identified many suggestions from parents on ways to improve speech-language pathology services. Certainly two suggestions which can be further explored are; adopting flexible individualized service delivery approaches and maintaining transparent service delivery policies within the context of a genuine partnership with parents. If we suspect that clinicians are not fully informing clients about service delivery and therapy evidence, analysis of contributing factors and development of realistic solutions is a priority (Dollaghan, 2007). Additionally, when parents are informed about service delivery constraints they are in a position to act as advocates for the profession.

Utilizing alternative service delivery models should be explored further. Given the geographic constraints of service delivery in Australia we may need to start promoting these methods as mainstream rather than thinking of them as alternative. However, while the current evidence on telehealth is promising it is not always equally cost-effective (Lewis et al., 2008). Further research may help to establish how best to make such options effective and sustainable.

A high proportion of children had access to computer, broadband internet, and video-console technology. Similarly, 79% of Australian children are reported to regularly use the internet at home and school and 69% to play online games (ABS, 2009). Children’s access to and enjoyment of computer-based activities is a direction that speech-language pathology should investigate further.

Future research and policy formation

This research highlights concern for the evidence-based provision of paediatric speech-language pathology services in Australia, especially with respect to services being timely, equitable, and family-centred. This study could be replicated in a larger-scale study which has a representative, stratified sample across states and SES populations, and which probes other variables such as parent education. A larger sample would lend itself to more complex statistical analyses investigating how multiple variables can affect satisfaction, or service delivery options. There are a number of arising issues which could be pursued further in research such as investigating benchmarks for waiting times, differences between school and non-school administered services, and discharge planning. In order to build on the preliminary findings presented here, we advocate that the future of paediatric speech-language pathology service delivery requires a government-funded national and comprehensive inquiry similar to the UK’s Bercow Review (Bercow, 2008). Subsequent to that review, there is also an urgent need for the development of national legislation (McLeod et al., 2010) which recognizes the needs of children with
Prevalence of different types of speech, language and communication disorders and speech pathology services in Australia

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