Notice to readers

The way in which the following report refers to Family & Community Services (FACS) – Ageing, Disability and Home Care (ADHC), was correct at the time of publication. Any reference in the document to names by which ADHC was previously known (Department of Human Services, Department of Ageing, Disability and Home Care) should now be read as FACS and ADHC. If you are having difficulty accessing any of the content within the report, please contact the Research and Evaluation Unit on 02 8270 2381.

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Operational Performance Directorate
Ageing, Disability and Home Care
Department of Family and Community Services NSW
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Therapy Services in the Disability Sector: Literature Review

Final Report
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NSW Department of Ageing, Disability and Home Care
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<tr>
<td>AAC</td>
<td>augmentative and alternative communication</td>
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<td>AIHW</td>
<td>Australian Institute of Health and Welfare</td>
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<td>AMPS</td>
<td>Assessment of Motor and Process Skills</td>
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<td>ASD</td>
<td>autism spectrum disorder</td>
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<td>ASHA</td>
<td>American Speech-Language-Hearing Association</td>
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<tr>
<td>Botox</td>
<td>botulinum toxin</td>
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<td>CHADS</td>
<td>Child Health and Development Services</td>
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<td>DADHC</td>
<td>NSW Department of Ageing, Disability and Home Care</td>
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<tr>
<td>GMFM</td>
<td>Gross Motor Function Measure</td>
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<tr>
<td>ICF</td>
<td>International Classification of Functioning, Disability and Health</td>
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<td>IEP</td>
<td>individualised educational plan</td>
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<td>MOVE</td>
<td>mobility opportunities via education</td>
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<td>MPOC</td>
<td>Measure of Process of Care</td>
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<tr>
<td>NDT</td>
<td>neurodevelopmental therapy</td>
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<tr>
<td>OT</td>
<td>occupational therapy</td>
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<td>PEDI</td>
<td>Pediatric Evaluation of Disability Inventory</td>
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<td>PT</td>
<td>Physiotherapy</td>
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<td>RCSLT</td>
<td>Royal College of Speech and Language Therapists</td>
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<td>SP</td>
<td>speech pathology</td>
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<td>ToP</td>
<td>Test of Playfulness</td>
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<td>WHO</td>
<td>World Health Organization</td>
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INTRODUCTION

THERAPY SERVICES IN THE DISABILITY SECTOR

Background

This report was prepared for the NSW Steering Committee for the Provision of Therapy Services in the Disability Sector (Therapy Taskforce). The NSW Department of Ageing, Disability and Home Care (DADHC) established the Therapy Taskforce to oversee the implementation of Stronger Together: A New Direction for Disability Services 2006-2016. The Taskforce, in turn, commissioned this report to inform future directions under Stronger Together.

This report presents an overview of research and practice literature on therapy (speech pathology [SP], physiotherapy [PT], and occupational therapy [OT]), for:

- Children with a disability
- Adults with a congenital or developmental disability

Note: In this document the term ‘developmental disability’ includes intellectual disability, global developmental delay, congenital/developmental physical disability and autism. The term ‘therapy’ only includes SP, PT and OT.

SECTION 1  Introduction to the therapy professions

To set the context we introduce the scope and focus of each of the therapy professions (SP, PT, OT). We also discuss how staff work together in teams and explore the transdisciplinary team as ideal for providing therapy services to people with a developmental disability.

SECTION 2  Factors influencing therapy selection and ‘best practice’

In this section we present a framework to conceptualise the interaction of factors influencing models of service delivery. In following sections, aspects of the framework are explained in greater detail. We also discuss the general state of the evidence and determination of ‘best practice’ in this field.
SECTION 3  Philosophy, mode and setting for best practice therapy
In this section we discuss the philosophy and evidence surrounding person-centred and family-centred practice as a basis for any type of therapy provided in disability services. We also describe the different models of therapy service delivery and present examples from the literature providing evidence for each therapy type. Finally, we review the interaction between the therapy setting and the philosophy and mode of service delivery, consider how service delivery modes interact with setting to affect outcomes.

SECTION 4  Views and experiences of disability services: Perspectives of people with a disability, families and caregivers
In this section we examine the expectations of therapy of people with a disability, families and caregivers, their satisfaction with services provided, and how these two factors interact with the selection of the mode and setting of the service.

SECTION 5  Workload (caseload) management
In this section we discuss how therapists manage their caseloads, including decisions about the length and intensity of therapy.

SECTION 6  Demand management
In this section we discuss demand management and related organisational issues (e.g., service coordination, access) as they impact upon service delivery.

SECTION 7  Conclusions
In this section we draw together the implications for provision of therapy services (OT, SP, PT) in disability services and make suggestions for future practice in the design of these services.
SECTION 1:

INTRODUCTION TO THE THERAPY PROFESSIONS

1.1 A unifying focus: to improve the lives of people with a disability and their families

Speech pathologists (SPs), occupational therapists (OTs) and physiotherapists (PTs) share common aims in working with people with a disability. Collectively, they seek to improve the lives of people with a disability by:

1. Minimising and preventing impairment
2. Facilitating access to and participation in daily life
3. Improving educational and occupational outcomes
4. Improving general well-being and quality of life
5. Educating others about impairments, intervention and management

The therapists also share a conceptualisation of disability, functioning and health through awareness of common models. The World Health Organization’s (WHO, 2001) International Classification of Functioning, Disability and Health (ICF) provides a universal framework that influences all aspects of service delivery (Australian Institute of Health and Welfare, 2003). The conceptual framework of the ICF is now a familiar representation of the consideration of the many factors beyond the individual (see Figure 1).
Until relatively recently, the therapy professions traditionally ‘allied with medicine’ have followed the traditions of the medical model. As such, the diagnostic and intervention services offered and delivered by therapists have tended to focus solely upon the individual and his or her deficits and the remediation of those deficits. In the past three decades, there has been a growing awareness and acceptance of the social model of disability. Indeed, in each of the professions there is an increasing focus upon the ICF that has widespread application beyond disability services and across the health services. Thus, the ICF may be a unifying conceptualisation not only across the disciplines, but also across services provided in the healthcare and disability service sectors (Frare et al., 2007).

There is also a growing body of knowledge exploring how the ICF might be applied in clinical settings (e.g., McLeod, 2006; Steiner et al., 2002; Washington, 2007). The ICF guides the provision of services that address needs related to body structure and function, activity, and participation. The ICF also addresses the environment and personal factors impacting on functioning, activity and participation. Thus, the ICF facilitates “cross-disciplinary and multi-professional practices and communications” (Taylor, 2008, p. 40). Informed by the ICF and trained in both the social and medical models of disability, therapists share a number of common beliefs, views, attitudes, and philosophical approaches to working with people with a disability (Frare et al.,

![Figure 1 Interaction between Components of the International Classification of Functioning, Disability and Health (WHO, 2001, p.18)]
2007). However, each of the disciplines takes a slightly different focus, which enables the team, working together, to meet a number of varying needs of people with disabilities and their families. In this section of the review we present the focus of each profession and how these professionals work together in teams.

1.2 Focus of the individual professions
(SP/ PT/ OT and therapy assistants)

Speech pathology
Speech pathology is concerned with addressing people’s needs in communication and swallowing. Speech pathologists focus on the body structures and functions surrounding speech, voice, fluency, language, receptive communication, swallowing and other aerodigestive functions. Speech pathologists are also concerned with the person’s activity and participation, and the environmental and personal factors associated with communication and swallowing. These include the development of social skills, problem solving, literacy, and augmentative and alternative communication (AAC). In their work with people with developmental disability, speech pathologists provide communication, feeding, and swallowing assessment services and supports, while recognising the important role of the person and family in assessment, goal setting and intervention decisions (Speech Pathology Australia, 2003, 2007).

Physiotherapy
Physiotherapy is an holistic approach to disorders of movement and the optimisation of function related to breathing and movement from an individual or population perspective. The practice of physiotherapy encompasses a diversity of clinical specialities to meet the unique needs of client groups. The practice of physiotherapy includes assessment and treatment/prevention of injury, disease, or other health conditions with physical interventions, electrophysical agents, or prescribed exercise. Physiotherapy includes related education for empowering people with a disability, caregivers and the community (Australian Physiotherapy Association, 2004).
Occupational therapy

Occupational therapy focuses on enabling people to participate in the meaningful activities of everyday life. Occupational therapists address barriers to participation brought about by lack of skills and abilities, features of the activities, or lack of environmental supportiveness. The basic philosophy of occupational therapy states that engagement in meaningful occupations promotes health, well-being and quality of life. Occupation is both the means and the ends of occupational therapy (World Federation of Occupational Therapists, 2005).

Therapy assistants within each health profession

A therapy assistant (i.e., PT assistant, SP assistant, OT assistant) is a skilled technical worker who, under the supervision of a qualified therapist, assists in delivering direct therapeutic intervention (Goodale, Spitz, Beattie, & Lin, 2007; Kumar, Nyland, Young, & Grimmer, 2006). The extent to which the therapy assistant is involved in treatment depends upon many factors, including:

- the supervising health professional’s registration or certification act
- the guidelines of the professional association
- the needs and policies of the workplace
- the attitudes and direction of the supervising therapist
- the capacity of the therapy assistant
- the needs of the person receiving the service

(Kumar et al., 2006).

Professional associations in PT (Australian Physiotherapy Association, 2004), SP (Speech Pathology Australia, 2007) and OT (OT Australia, 2001, 2007) provide policy statements on the education, supervision, role, and code of conduct of therapy assistants, and guidelines for their employment. Members of the associated professions are expected to comply with these statements.
1.3 Therapists working together: therapy teams

In disability services, therapists rarely work in isolation. They usually work in teams that can be multidisciplinary, interdisciplinary or transdisciplinary in nature (see definitions below).

Current law and recommended practices require a collaborative process that involves a multifaceted team including families, caregivers, persons with disabilities, and professionals. These teams establish and coordinate services that are family-centered, culturally appropriate, comprehensive, and compassionate, and that produce meaningful life outcomes. Team approaches are considered best practice for serving individuals with special needs and their families. (American Speech-Language-Hearing Association [ASHA], 2005, p. 7).

Therapists also work in broader teams within the workplace, which may include case workers, social workers, psychologists, and others. Team functioning inevitably influences service delivery and there is now a substantial body of literature supporting the importance of good team functioning (e.g., Anderson, Hawkins, Hamilton, & Hampton, 1999; Cup et al., 2007; Maple, 1987; Orelove & Sobsey, 1996).

Three team approaches

Therapists typically work in one of three types of teams. These differ by the degree to which team members interact in the context of working with one another (Paul & Peterson, 2001):

- Multidisciplinary team: Therapists act within their own professional domains and interact only formally with other team members (e.g., in meetings).
- Interdisciplinary team: Team members act within their professional domains but collaborate actively and frequently in intervention planning and implementation (Guralnick, 2000).
- Transdisciplinary team: Team members overlap and cross over traditional roles. Boundaries between the roles of team members are blurred (Orelove & Sobsey, 1996; Wooster, 2001).

Little research has addressed which type of team is “optimal” and, in a recent study, MacKay et al. (2007) asserted that no single type of team works across populations and in all circumstances. Nonetheless, the characteristics of transdisciplinary teams
make them particularly suitable to services for people with developmental disability, and compatible with person-centred and family-centred services. Thus, in the following section we will explore transdisciplinary teams in greater detail.

The transdisciplinary team approach

Transdisciplinary teams work collaboratively, sharing responsibility for making decisions and planning, implementing and evaluating services. A transdisciplinary approach assumes that all team members (including the person with a disability and his/her family) contribute to an intervention plan tailored to the individual needs of the person and family. The characteristics of transdisciplinary teams include:

- interdependence across disciplines and with consumers
- integrated interventions with an emphasis on natural settings
- functional goals
- a holistic approach to the person/family and others supporting them
- family-centred and culturally appropriate practice

(ASHA, 2006; Koskie & Freeze, 2000).

The transdisciplinary approach is particularly well suited to meeting the needs of people with developmental disabilities (ASHA, 2005). In fact, a transdisciplinary approach has been the preferred service delivery type for people with developmental disabilities since the 1960s (York et al., 1990). ASHA (2006b) asserts that “although interdisciplinary teams are still prevalent, transdisciplinary teaming has characteristics that may be better suited to meeting the needs of persons with [an intellectual disability] and their families.” (p. 8, emphasis added).

Close collaboration among team members in the transdisciplinary approach provides the potential for effective and efficient communication and implementation of interventions (Friend & Cook, 2000; Koskie & Freeze, 2000; Maple, 1987). With a greater awareness of services across disciplines, therapists in transdisciplinary teams become more conversant with the interactions between different therapies. As all members of the team are collaborating and aware of the goals, one member of the team may be selected as the primary staff member for interactions with the person and family (Rainforth, 2002). In this model, since family members relate primarily with one staff member regarding all service delivery issues, a transdisciplinary approach may be less confusing.
Unlike any of the other teams, in the transdisciplinary approach the potential also exists for the ‘case manager’ to be the person with a disability or his or her parent or carer (Koskie & Freeze, 2000). Taking on a case manager role helps to achieve continuity of care over the long term and a focus on the individual’s needs in the process. Management of one’s own care needs also leads to self-advocacy, self-determination, independence and full participation (Koskie & Freeze, 2000).

While the characteristics of the transdisciplinary approach mean that it is ideally suited to working with people with a disability (York et al., 1990) those same characteristics also have potential professional practice implications that impact upon the approach (Giangreco, 1990; Giangreco, Edelman, & Dennis, 1991). Lahey and Currie (2005) identified several professional regulation issues and legal concerns that arise in malpractice claims.

1. **Role boundary overlap:** In transdisciplinary teams the professions overlap and role boundaries are blurred (Wooster, 2001). Team members may be called upon to implement procedures generally associated with another discipline (Koskie & Freeze, 2000; York, Rainforth, & Giangreco, 1990). When there are no clear external professional boundaries, team members must maintain their own role clarity in order to ensure that people benefit from each distinct discipline ‘scope’ of practice.

2. **Responsibilities:** Because each professional retains responsibility for the outcomes associated with delegated functions, professionals who delegate to or train a colleague to perform a procedure maintain the responsibility for the outcomes (Australian Physiotherapy Association, 1999; OT Australia, 2001; Speech Pathology Australia, 2000). Thus, they must ensure the colleague’s competency through high quality training and monitoring. Monitoring can be a delicate issue among colleagues of equal status.

3. **Scope of practice:** Professional regulatory bodies deem that some functions cannot be shared across disciplines. For example, the title and practice of physiotherapy is restricted under the *Physiotherapists Act* (2001, No 67) to those registered to practice within a particular State. Therefore physiotherapy services, per se, are not suitable for a transdisciplinary approach. Of course, because there is undeniable overlap among the professions the difficult question of what constitutes “physiotherapy” practice arises. Legal issues also arise for speech pathologists with regard to swallowing and eating. Professional practice...
guidelines (e.g., Speech Pathology Australia, 2007) are available to clarify responsibilities and roles and to guide practitioners in the ethical implementation of transdisciplinary services.

4. Changes in the make-up of the team over time: Transdisciplinary teams are arranged on an ad hoc basis according to the needs of the person with a disability and his or her family (Koskie & Freeze, 2000; Maple, 1987). Thus, in responding to the person’s changing needs, the make-up of the professional team might change over time. Such changes might be necessary particularly at moments of transition (e.g., starting school, growing into adolescence, leaving school, starting employment, retirement) when a new constellation of needs arises. While having access to a wide range of professionals may make intervention more effective and easier for some families, others may find the ad hoc nature of the team unsettling or confusing if it changes over time.

Certainly, all professionals must comply with profession-specific service mandates relating to scope of practice and role release. However, the professions overlap and all share a set of ‘core competencies’ (Verma, Paterson, & Medves, 2006). The similarities across the professions mean the impact of providing a service in any of the common types for service delivery is similar across professions (e.g., duty of care, vicarious liability, professional preparation, code of ethics).

All three disciplines are health professions with traditions and practices stemming from both the medical and social models of disability. Unifying frameworks for disability (e.g., the ICF, WHO 2001), assessment and intervention mean that the disciplines could together strive for a shared framework in service delivery that both promotes the aims of the service and furthers each of the professions.
SECTION 2:

FACTORS INFLUENCING THERAPY SELECTION AND ‘BEST PRACTICE’

2.1 Conceptual framework for therapy service delivery

In this section we review literature about best practice; the selection of philosophy, mode and setting for therapy; and client and family views of therapy. All of this is considered in relation to ‘caseload management’ (for individual therapists) and ‘demand management’ (for organisations).

A range of factors influence provision of therapy to people with developmental disabilities. As an introduction to this document and the literature supporting the various therapy options available, we provide an overview of these factors and relationships between them in Figure 2.

- Disability organisation’s mission, goals and philosophy: social model of disability, person-centred and family-centred practice, policies, demand management, occupational management, staff development and support
- Therapists and team: scope of practice, competencies, evidence-based practice, caseload management, transdisciplinary team
- Person and family: rights and responsibilities, skills, function, needs, preferences, environment
- Setting: external organisation, home, out-of-home placement, school, clinic, organisational policies, environment
- Mode of therapy service delivery: direct therapy, indirect therapy, consultative therapy; therapy to individuals/ groups

It is also clear that in any organisation providing services to people with a disability, the interaction of the person/ family, the setting for service delivery, the mode of therapy, and the therapist, will influence each other. Each factor will also be greatly influenced by the overall organisational management structure supporting the services. Beyond the framework, a disability therapy service is also influenced by
State and National legislation and funding requirements, community values, attitudes, beliefs, and other cultural and societal forces. While these factors are referred to throughout, they are not explicitly reviewed in this document.

Figure 2  Framework for related factors in service delivery

Note: The arrows on the figure above represent the dynamic interaction between the factors. Each factor will have an impact on all of the other factors, and thus will impact upon the ‘mode of therapy service delivery’.
2.2 Best practice in therapy service provision (PT/ OT/ SP)

A ‘best practice’ is defined as a method that is based on experience and research that has been shown to reliably lead to a desired outcome (Higgs, 2000). Therapy staff are compelled to maintain best practice by staying up-to-date with and using all available information in delivery of the service, and monitoring outcomes (Australian Physiotherapy Association, 1999; OT Australia, 2001; Speech Pathology Australia, 2000).

The state of the evidence base

There is an extant literature base in the form of research reviews, research reports, and professional practice documents available to guide therapists in designing and implementing some interventions in specific populations. Much of this is captured in systematic database collections (see ‘evidence-based practice’ below), and there are also several journals dedicated to the dissemination of quality peer-reviewed research in the field of developmental disability (American Journal of Mental Retardation, Journal of Intellectual & Developmental Disabilities, Disability & Society, and Disability & Rehabilitation, to name a few).

It is beyond the scope of this document to review all of the documents that therapists might access in seeking to implement evidence-based practice in providing therapy to all people with developmental disability. Therapists may draw from the literature relating to the general population and more specific literature addressing the needs of smaller sub groups of the population. In order to illustrate the efficacy of different modes of therapy (i.e., direct/ indirect/ consultative) and therapy settings, we will provide specific information and implications from studies for each. In the relative absence of a broad base of detailed research on the efficacy of therapy for people with a developmental disability, we also look to the literature relating to the general population or other sub-groups for relevance to people with a disability, since research on the effectiveness of interventions for children and adults in general will hold some relevance and provide useful information that can be applied to designing interventions for children and adults with a lifelong disability.

Finally, where possible we have included findings from systematic reviews of the literature. Systematic reviews are useful where there is a body of research that might be systematically compared and synthesized into a ‘meta-analysis’ of the therapy (Pring, 2006). Physiotherapy easily outstrips other disciplines in the number of
randomised controlled trials of therapy, enabling more useful systematic review than
disciplines where there are fewer controlled studies that are comparable.

Evidence-based practice
To translate the literature (e.g., articles in journals) into evidence-based practice (i.e.,
clinical services), therapists in clinical settings must be supported to gain access to
the literature (e.g., Fell & Burnam, 2004) and apply findings to change practice (e.g.,
Grimmer, Bialocerkowski, Kumar, & Milanese, 2004). Therapists need skills in
locating and critiquing the literature, drawing from it clinically relevant implications,
and applying findings in day-to-day practice. Schlosser (2003), co-founding editor of
the journal Evidence Based Communication, Assessment and Intervention,
recommended practitioners follow Rosenberg and Donald’s (1995) evidence-based
practice model:

- Develop a clinical question that may be answered in the research
- Search for evidence
- Appraise the available evidence
- Implement the useful findings into practice.

A number of free and subscription web-based evidence summary and evaluation
databases have also been developed to increase awareness and critical evaluation
of the evidence relating to therapy. Databases freely available to therapists (and the
general public) include OTseeker (http://www.otseeker.com/), PEDro
SpeechBITE is to be launched for public access in May 2008. Each database
provides information on research of relevance across all disciplines.

Practice literature versus efficacy studies
Although there is a growing body of practice literature available to guide therapists in
their work with people with a developmental disability (e.g., Hagglund & Heinemann,
2006; Rennie, 2001), to date there is still a paucity of research evaluating the efficacy
of the several different treatments available. For example, there are few controlled
studies comparing the effects of interventions on different populations of children and
adults with lifelong disabilities. In part this is due to the ethical and logistical
difficulties in engaging in clinical research with heterogeneous populations of people
with a disability. Efficacy studies conducted in ‘research’ or ‘ideal’ conditions are
difficult to interpret in clinical situations where those conditions cannot be replicated.
Clinical research needs to reflect what happens in the ‘clinic’ and implementation research is required across a range of interventions.

As reported in this document, in many areas reviews of published controlled trials have reported inconclusive or contradictory findings. Steultjens et al. (2004) and others have highlighted that in clinical practice therapists routinely evaluate characteristics of clients and their symptoms, and the environment, and use clinical reasoning to formulate individual goals and treatment plans. The studies included in systematic reviews and meta-analyses, however, are of homogenous groups of clients given standard treatments; a protocol that contradicts client-centred and family-centred practice (Ballinger & Wiles, 2001; Gresham, 1998; Steultjens et al., 2004). In clinical practice, smaller studies or a series of case studies may provide valuable information that can be applied to the relevant sub-group of the population of people with a disability (e.g., by age, condition, or function). However, caution is required in generalising these findings to larger populations of people with a disability (Pring, 2006) – as in this review.

Nonetheless, there is an ever increasing body of knowledge relating to provision of therapy to particular populations of people with developmental disability (e.g., Rennie, 2001). Our understanding of specific difficulties related to given diagnoses (particularly Down Syndrome and Autism) and in specific clinical areas (e.g., provision of AAC systems, management of challenging behaviour) is also growing. With an increasing awareness of the need for therapists to apply the best available evidence in providing clinical services, it is expected that the knowledge base will continue to expand in relation to specific diagnostic categories and functional interventions (ASHA, 2005).

**Combining practice knowledge with evidence-based practice and cultural knowledge**

Best practice integrates ‘practice wisdom’ with the ‘best available evidence’ from systematic research and knowledge of local and individual circumstances. Practice wisdom is the proficiency and judgement that therapists acquire through practice, which contributes to future therapy decisions (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2005). As Higgs (2000) explained, a broad knowledge of the person’s culture is also required. When all three elements (practice wisdom, available evidence, knowledge of cultures) are present, “we can claim to be adopting credible practice which is not only evidence-based, but also patient-centred and context relevant” (Higgs, 2000; p. 63).
Therapists apply the principles of evidence-based practice and best practice to answer clinical questions on a day-to-day basis. In selecting a treatment method for an individual, therapists ask the following questions:

- Does the therapy impact upon the individual?
- Does the therapy have the potential to impact positively upon other people (e.g., caregiver, family, educator)?
- Will the therapy meet the individual’s current needs and future needs?
- Will the therapy potentially benefit the individual and others through the development of transferable skills and skills in solving their own problems and managing lifelong disability, such that it impacts on the future demand for service?
- Will therapy methods promote carry-over and generalisation of skills, impacting on future demand for services?
- Will training and collaborative consultation effectively replace or complement and extend the impact of individualised direct treatment options?

In the next sections of this report we will explore the literature informing the philosophy, modes and setting for therapy, thereby answering some of these questions.
SECTION 3:

PHILOSOPHY, MODE AND SETTING FOR BEST PRACTICE THERAPY

3.1 Service Philosophy:
Person-centred and family-centred practice as ‘best practice’

Person-centred and family-centred practices involve negotiating goals and targeting outcomes that are identified by and relevant to individuals with a disability and their families (McGonigel, Woodruff, & Roszman-Millican, 1994). People with a disability and their families are actively involved in generating and implementing interventions and building the skills required to address their own needs in the future. Services acknowledge the person's own knowledge, skill, variability, resources, preferences, and needs in relation to therapy. Since each therapy has strengths and limitations, person-centred and family-centred practice involves implementing a range of services tailored to the individual's needs and preferences.

Family-centred practice

There is a growing body of evidence supporting the implementation of family-centred service delivery models as being 'best practice' in the field of developmental disability (e.g., Dunn, 2000; Dyke, Buttigieg, Blackmore, & Ghose, 2006; S King, Teplicky, et al., 2004; G King & Meyer, 2006; J Law, Garret, & Nye, 2003; Raghavendra, Murchland, Bentley, Wake-Dyster, & Lyons, 2007). However, in practice, few actually meet the criteria of families “driving” teams or strengths-based intervention (Dunst, Boyd, Trivette, & Hamby, 2002; Dunst, Johanson, Trivette, & Hamby, 1991).

The family-centred model is just one of four service models on a continuum of services known collectively as family-oriented services. Family-oriented services share the common view that the family is the unit of intervention and that families function within an ecological system (Dunst et al., 2002). There are four types of family-oriented services: professional-centred, family-allied, family-focused, and family-centred. These four models vary in their consideration of the expertise of each
party in the interaction (Dunst et al., 2002). Only family-centred models embrace all of the principles of family-centred practice (Dunst et al., 2002), including:

- the family deciding on their own level of involvement in decision-making,
- the family having ultimate responsibility for the child’s care,
- the family being treated with respect,
- having the needs of all family members considered, and
- encouraging the involvement of all family members.

(Rosenbaum, King, Law, King, & Evans, 1998).

Services cannot be categorised as being either ‘family-centred’ or ‘not family-centred’. Indeed, some practices within so-called ‘family-centred’ services may not be family-centred at all (e.g., holding case-conferences during school hours may suit the school personnel and health professionals, but not working families). Rather, practices within the service may fall on a continuum from profession-centred to family-centred. Where some practices are not family-centred, strictly speaking the service might be considered ‘family-oriented,’ not ‘family-centred’. In implementing the principles above, services aiming to be family-centred also need to be guided by family-centred paradigms in all aspects of service delivery and in the adoption of models to conceptualise disability and health (Dunst et al., 1991).

There is some evidence to suggest that family-centred practice has a positive impact on how professionals interact with families. When professionals adopt a collaborative and family-centred approach, they tend to increase their participation with families through actively involving people in interventions to build their own capacities (Dunst et al., 2002). Highly family-centred models are differentiated from less family-centred models by practitioners’ use of more participatory strategies with families in the design and delivery of therapy (Dunst et al., 2002). The use of participatory practices has also been associated with parents’ sense of empowerment in early intervention services in Australia and the US (Dempsey & Dunst, 2004).

Despite working in person-centred and family-centred practice settings, individual therapists’ attitudes towards parents in therapy may not be family-centred. Some therapists express the desire that parents take part more in therapy, be more effective in implementing therapists’ recommendations and even receive mandatory training to do so (Campbell & Halbert, 2002). These statements reflect a discord
between practitioners’ actions and their expressed belief in the family-centred model. As Campbell and Halbert (2002) indicated:

When practitioners view family participation as a series of statements about what parents with children in early intervention should do, providing services in ways that fully implement principles and practices of family-centred intervention is not likely to happen. (p. 223)

The service recipient’s perception of the service provider’s behaviours has been found to differentiate profession-centred services from family-focussed and truly family-centred services (Dunst et al., 2002). Australian research suggests that child disability services that have aligned themselves with a family-centred philosophy are generally perceived by staff and caregivers to have implemented this in practice, but that there are areas for improvement (Raghavendra et al., 2007). (Families’ specific experiences will be discussed in Section 4: Views and experiences of disability services.)

Finally, Mahoney, Boyce, Fewell, Spiker, and Wheeden (1998) cautioned that the child can become lost in the manner in which the family-centred model is implemented. Therapy staff need to consider how being family-centred is not at the expense of being person-centred, and determine ways of working for the principles of each approach to be integrated in the philosophy and practice of the therapy service (Owen, Gordon, Frederico, & Cooper, 2002).

**Person-centred practice.**

Person-centred practice prevails as the current ‘best practice’ philosophy in adult disability services. Its implementation is strongly encouraged (if not mandated) by legislative, policy and funding frameworks (see The Centre for Developmental Disability Studies / DADHC, 2004). Generally speaking, case study evidence supports the value of person-centred planning practices, but high-quality, systematic evaluations are lacking (Mansell & Beadle-Brown, 2004).

As with family-centred practice, there are indications in the literature that the practical implementation of person-centred practice is not uniform across services, nor staff within services. Deeley (2002) found the prevailing person-centred ideology coexisted with the ‘outdated’ paternalistic ideology within services for adults with developmental disabilities, and that this created conflict between administrators and staff and among staff. Not surprisingly, and as with the introduction of family-centred practice, there was found a relationship between length of service and the adoption
of person-centred philosophies, with longer-serving staff more likely to be retaining paternalistic ideologies of their time (Deeley, 2002).

Deeley (2002) cites client-related factors that limit the implementation of person-centred practice. First of these is the clients' limited ability to engage in the process. (The counter-argument to this being that the belief that clients are not capable is itself paternalistic, and it is the responsibility of the service to enable their engagement.) The person’s lack of desire to engage in the process has also been cited as a barrier, particularly where they have been conditioned to a paternalistic system where they have not previously been engaged (Deeley, 2002).

Mansell and Beadle-Brown (2004) add service-related factors that limit person-centred planning, including:

- Insufficient resources to make and implement plans;
- Standardised assessment, prioritisation and rationing systems that prevent individualisation of programs to a person’s needs;
- Removal of funding decision-making powers from staff directly involved with clients;
- Lack of support for person-centred planning practices in administrative systems;
- Poor translation of plans into practice (i.e., ‘lip-service’ and ‘paperwork trails’);
- Staff lack of knowledge, skill and willingness to engage in person-centred planning.

Finally, given widespread resource limitations, person-centred planning risks transferring the burden of care to informal supports, in the name of emphasising natural networks (Mansell & Beadle-Brown, 2004).
3.2 Direct, indirect, and consultative modes of therapy service delivery

<table>
<thead>
<tr>
<th>Mode of Therapy</th>
<th>(to individuals or groups, in isolation or combination)</th>
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<tbody>
<tr>
<td>Direct therapy</td>
<td>+/-</td>
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<tr>
<td>Indirect therapy</td>
<td>+/-</td>
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<tr>
<td>Consultation (expert or collaborative)</td>
<td>+/-</td>
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Service delivery may be broadly defined according to the *relationship between the person with a disability and the therapist* (Dunn, 2000). We have identified three modes of service delivery:

**3.2.1 Direct therapy service**: an individual or group service delivered by the therapist working directly with the person with a disability/ family

**3.2.2 Indirect therapy service**: therapeutic strategies provided by the therapist to be conducted by another person for the benefit of the person with a disability

**3.2.3 Consultative service (including both expert consultation and collaborative consultation)**: a service provided by a therapist with the aim of addressing problems encountered due to a disability, and a person’s skills to solve such problems, rather than features of the disability itself.

The person with a disability and his/ her family might be in receipt of all three service types in addressing goals that meet his/ her needs. Figure 3, below, illustrates the relationship between the therapist and the service recipient (often the person with a disability and family) in each type of service provision.
More detailed descriptions of each of the service delivery types and the advantages and disadvantages of each are outlined in this section of the review.

### 3.2.1 Direct therapy services

A direct service is one in which the therapist personally delivers a service to individuals or to groups of individuals. Direct service delivery does not necessarily require a ‘withdrawal’ or clinic-based model; therapists may provide a direct service in a range of settings (e.g., clinic, school, home, community). Despite recommendations to move towards collaborative models of service delivery (see ASHA, 1991), therapists continue to favour direct models that involve ‘withdrawal’ of the person from natural environments (ASHA, 2006a). Anecdotal reports suggest that most
therapy in the disability services is currently delivered as direct services and associated with working with individuals on a ‘withdrawal’ model.

The aim of direct therapy services is to increase or maintain skills or abilities and function (Bundy, 1991). Direct services are the most appropriate option where the intervention strategy requires expert knowledge and technique that cannot be passed on to another (Case-Smith & Cable, 1996; Dunn, 2000); when the client’s performance is rapidly changing or variable, requiring continual adaptations to therapy (Case-Smith & Cable, 1996); or when the situation is life threatening or the person has physical or medical conditions that require close monitoring and continual adaptation (Case-Smith & Cable, 1996; Dyson, Duckett, & Allen, 2000). The primary advantage of a direct service is that the therapist can continually apply clinical judgement to monitor and adapt intervention to suit the needs of the individual or group (Dunn, 2000).

In general, direct therapy is more effective if:

- it is tailored to the individual’s needs and revised according to progress,
- it is provided in sufficient intensity and duration, as to see a treatment effect,
- it is delivered in natural settings,
- it is designed to promote ‘generalisation’ and ‘transfer’ of skills across settings,
- it is based on functional goals that are set with the person/family in a family-centred manner, and
- it takes account not only of the individual but the person in the environment and the environment in implementation and design.

Studies comparing outcomes of ‘therapy’ versus ‘no therapy’ support the view that therapy service provision holds real and tangible benefits for people with a disability (Hagglund & Heinemann, 2006; Royal College of Speech and Language Therapists [RCSLT], 2005). None-the-less, many approaches to direct therapy (either to individuals or groups of individuals) lack conclusive evidence of their efficacy or the amount of therapy required to gain a treatment effect. Even where treatment effects have been shown, the mechanism of the effect is often not fully understood. However, there are examples within the literature that highlight the functional benefits of therapy that provide a useful evidence base for therapists in the disability sector.
Systematic/ narrative reviews of the evidence for direct therapy

As direct therapy has received the most attention in research literature, there are a number of published reviews available aiming to guide therapists in their practice (e.g., Butler, Higgs, Herbert, & Moseley, 2007; Pennington, Goldbart, & Marshall, 2003; RCSLT, 2005). Rather than review the literature separately we will present the findings of the reviews, acknowledging that not all studies would have met the criteria for inclusion in the reviews, and that important clinical information may be gleaned from both included and excluded studies.

Augmentative and alternative communication (AAC)

Schlosser and Sigafoos (2006) conducted a ‘narrative review’ of single-subject design studies of AAC interventions for people with developmental disabilities to inform practitioners in decision-making about interventions. They highlighted several design, measurement and procedural issues that limited the certainty of evidence arising from a comparison of findings from studies to date. They also summarised evidence for various instructional goals in AAC (aided, unaided, and aided vs. unaided AAC) and rated the certainty of the evidence and the participant type (e.g., autism, severe/ profound intellectual disability).

Sensory integration therapy

Vargas and Camilli (1999) conducted a meta-analysis of published studies of the effectiveness of sensory integration. Included in the analysis were sixteen studies comparing sensory integration with no treatment, and sixteen studies comparing sensory integration with alternative treatments. Consistent with an earlier meta-analysis (Ottenbacher, 1982), overall sensory integration was found to be effective when compared with no treatment and as effective as alternative treatments. However, this study also highlighted trends in the research, finding that more recent studies demonstrated significantly smaller effects than earlier studies.

Physiotherapy for people with cerebral palsy

In a randomised trial, Ketelaar, Vermeer, ‘t Hart, van Petegem-van Beek and Holders (2001) investigated the effects of a functional therapy program on the motor abilities of children with cerebral palsy using the Gross Motor Function Measure (GMFM) and the Pediatric Evaluation of Disability Inventory (PEDI) as the assessment tools. Sixty-one children age 2-7 years were randomized to receive treatment based on functional outcomes or on principles of normalisation of movement. Both groups improved similarly on the GMFM, a measure of ‘basic gross motor abilities... in a
standardized environment” (p. 1543). On the PEDI, a measure of “gross and fine functional motor abilities… [that] better reflects the physical and social environments” (p. 1543), the improvement was greater in the children in the functional physical therapy group.

Taylor, Dodd and Zoghi (2007) conducted a systematic review of 5 controlled studies looking at the effects of strength training on children (aged 8-18) with cerebral palsy (spastic diplegia). The authors concluded that there was insufficient evidence to conclude that strength training can increase muscle strength, improve functional activity or improve psychological functioning in people with cerebral palsy. There was no evidence that strength training had any negative effects on spasticity.

Butler et al. (2007) recently studied the quantity and quality of evidence of the effects of neurological paediatric physiotherapy interventions by searching PEDro for systematic reviews and randomised controlled trials. The search revealed 106 relevant records, with the number of records doubling between 2000 and 2007. Further, the high quality of the recent studies is providing stronger evidence of the effectiveness of physiotherapy intervention in this population.

**Neurodevelopmental therapy (NDT) for children with cerebral palsy**

Brown and Burns (2001) systematically reviewed the current evidence for NDT for children identified as having cerebral palsy and infants classified as ‘high risk’ for neurological dysfunction (e.g., low birth-weight). This review provided an update to the meta-analysis of Ottenbacher, Biocca, DeCremer, Jedlovec, and Johnson (1986), which found a small but positive treatment effect for children with cerebral palsy. Reviewing seventeen studies, Brown and Burns (2001) found inconsistent results and generally poor methodological quality. They concluded there was insufficient evidence to determine if NDT was effective for children with cerebral palsy. On the whole the evidence did not support the use of NDT with high-risk infants.

**Hippotherapy (horseback riding) for children with cerebral palsy**

Snider, Korner-Bitensky, Kammann, Warner and Saleh (2007) conducted a systematic review of the literature on horseback riding as therapy for children with cerebral palsy. The authors found that hippotherapy was effective for improved gross motor function when compared with regular therapy or time on a waiting list. They also found that there was improved symmetry in the trunk and hips.
Intramuscular botulinum toxin injections (Botox therapy)

Ade-Hall and Moore (2000) systematically reviewed evidence for the use of Botox injections in the treatment of lower limb spasticity of children with cerebral palsy. In the three published randomised controlled trials identified, the Botox intervention was found to be positive, but not statistically different to that of placebo injections (one study) nor casting (two studies). These studies were small, short-term, involved only single injections and may not reflect clinical practice. Adverse effects were uncommon and mild.

Wasiak, Hoare and Wallen (2004) systematically reviewed the evidence for the use of Botox injections in the treatment of upper limb spasticity in children with cerebral palsy. Two eligible published randomised controlled trials were identified. One compared Botox with a placebo injection, and found promising results for effects on muscle tone and grasp and release. A second, more recent, study found no significant treatment effect when compared with no intervention.

Since these reviews, Speth, Leffers, Jannssen-Patten and Vies (2005) have evaluated the effectiveness of intramuscular botulinum on upper limb impairment of children receiving intensive therapy over a nine-month period. They found that those who received botulinum had a better outcome.

Speech pathology for children with cerebral palsy

Pennington et al. (2003) reviewed twelve studies of speech pathology for children with cerebral palsy (excluding papers in which children with cerebral palsy could not be distinguished from other participants or there were no controls). They concluded that there was as yet insufficient evidence of the benefits of speech and language therapy for children with cerebral palsy to show a treatment effect over no treatment, however, there was no evidence that speech and language therapy was harmful or not beneficial and no indication that there should be changes in therapy. The authors highlighted the lack of research in this clinical area and need for further rigorous research. Future studies particularly need to include detailed descriptions of participants and their communication partners, and to study the development of valid and reliable measures of speech and communication for children with cerebral palsy, methods currently used in treatment (focus groups and surveys of clinicians), effectiveness of generic treatments (pragmatic trials). Rigorous single-case experimental designs, feasibility studies, and long-term follow-up of subjects is required, as well as qualitative research to explore person and family perceptions of therapy.
**Occupational therapy for children with cerebral palsy**

Steultjens et al. (2004) systematically reviewed the published literature on occupational therapy interventions for children with cerebral palsy. The seventeen included studies evaluated sensorimotor treatment, functional skill training, parent counselling, assistive devices and comprehensive occupational therapy (treatment incorporating all of the above modalities). Overall, there was found to be insufficient evidence to evaluate the effectiveness of these occupational therapy modalities. Again the quality of evidence and lack of evidence replicating and supporting earlier findings prevented overall conclusions being made despite some individual studies reporting positive effects.

**Physiotherapy for people with intellectual disability**

Andriolo, El Dib and Ramos (2005) reviewed two studies of the effects of aerobic exercise for adults with Down Syndrome. In the meta-analyses only maximal treadmill grade was improved in the intervention group. The authors concluded that there was insufficient evidence to support improvement in physical and psychological outcomes and that further well-conducted research needs to be conducted.

Excluding studies involving people with Down Syndrome, Chanias, Reid and Hoover (1998) conducted a meta-analysis of 21 studies to determine the effects of exercise on health-related physical fitness of adolescents and adults with intellectual disability. They found large exercise effects for muscular and cardiovascular endurance, moderate effects for muscle strength and small effects for flexibility. They found that program length (≥9 weeks) positively influenced muscular and cardiovascular endurance outcomes, program type influenced muscular strength outcomes and program frequency (≥3 per week) positively influenced flexibility outcomes.

Since the review by Chanias et al. (1998), Lotan, Isakov, Kessel and Merrick (2004) have published a further study. They describe the population of children with an intellectual disability as one at risk of developing heart-related diseases at a young age. The researchers conducted a study of 15 children with intellectual disability with a motor functioning level of between 7 and 14 months. Using a treadmill daily for 2 months, they found a significant improvement in physical fitness and a highly significant improvement in functional ability. These results were not maintained a year after the intervention. The authors concluded that such a program did not entail long-term budgetary expenditure as it can be administered with the assistance of
untrained staff working under supervision and should be considered as an on-going program in this at-risk population.

**Therapy for people with autism**

Parents of people with autism report accessing on average up to seven different types of therapy for their child depending on the degree of severity of autism (Green, Pituch, Itchon, Choi, O'Reilly & Sigafoos 2006). The most common therapies accessed were speech therapy, visual schedules, sensory integration, and applied behaviour analysis. The authors found that many of the treatments accessed lacked empirical support and recommended further research on how parents make decisions about therapy for children with autism. Roberts and Ridley (2004) reviewed the literature relating to best practice in therapy for children with autism, and concluded that:

> the success of all these programs is clearly dependent on the establishment of a good parent-professional relationship. In particular the ability of health professionals, social and support workers to enhance the well-being of children with autism and their families by addressing the needs of the entire family, facilitating family choice and control of supports, and helping families to navigate the complex service system. (p. 68).

**Social interaction interventions**

McConnell (2002) reviewed 55 studies of interventions to improve the social interactions of young children with autism. This review indicated that while individual direct therapy had comparable outcomes to indirect (peer-mediated) interventions, neither were sufficient to achieve positive outcomes across settings. Ecological interventions alone were also able to gain positive outcomes.

**Sensory and motor interventions**

Baranek (2002) reviewed the evidence for a range of specific interventions falling under the umbrella of ‘sensory and motor interventions’ for children with autism. For the most part these interventions were found to lack empirical support, with the evidence being largely of low quality (uncontrolled descriptive rather than controlled experimental studies) and at times conflicting. When measured, beneficial effects have typically been found to be short-lived. Findings included that: there was no evidence for sensorimotor handling techniques with this population; there were potential adverse side effects for auditory integration training; and sensory integration and related interventions were relatively safe. Given most interventions were
delivered as direct, withdrawal services and there was limited evidence for effectiveness, Baranek concluded that the potential risks, costs and benefits need to be weighed up for each individual by the therapist in conjunction with the family. Any intervention implemented needs to be closely monitored for effectiveness and discontinued if ineffective for the individual (Baranek, 2002).

To date, there are no studies investigating physiotherapy intervention in the management of autism. However, people with autism may display what have been termed ‘associated symptoms’ that include gross and fine motor deficits (Ming, Brimacombe, & Wagner, 2007). Ming et al., (2007) identified gross and fine motor deficits in 154 children with autism spectrum disorder (ASD) and concluded that “the prevalence of motor impairment is high, especially in the younger age group, in this cohort of children with ASD. Treatment of the motor deficits had not been preferentially provided to these children with subtler motor deficits, suggesting proper recognition of these fine motor deficits is warranted.” (p. 569). It is possible that the lack of research or description of physiotherapy practice with people with autism reflects both a research and practice bias, as children with autism display gross and fine motor deficits but are not more likely to receive therapy for this than children with autism without gross or fine motor deficits (Ming et al., 2007).

Speech pathology for children with speech or language disorders

J Law et al. (2007) reviewed 25 studies relating to speech and language therapy interventions for speech or language delay or disorder. The studies tended to focus on a single aspect of therapy (e.g., speech, phonology, expressive or receptive language). The authors concluded that the review provided some support for the effectiveness of speech and language therapy for children with speech and language difficulties. There is stronger evidence that therapy is effective for children with expressive difficulties and not receptive difficulties. Accordingly, there is less evidence of effectiveness for children with receptive difficulties, and these children are more likely to have long-term difficulties. Studies comparing treatment implemented by trained parents versus therapists showed no significant difference in outcomes. Sub-group analysis showed that interventions lasting longer than eight weeks “may be more effective than those lasting less than eight weeks.” (p. 15). The authors also concluded that research supports the use of peers as language models in therapy.
**Direct therapy to groups**

Direct therapy involves relatively frequent contact between the therapist and person with a disability until the goal is achieved (Dunn, 2000). However, the demand for services outstrips the service resources (Rainforth, 2002; RCSLT, 2006), which, in part, has driven the need to identify more effective ways of delivering services (see Australian Communication Quarterly, 2005). The design of direct services to groups is one strategy that has been utilised to deliver therapy to greater numbers of people with a disability (ASHA, 2006a). However, evidence for the overall efficacy of group-based interventions therapy is scant. Further research is also needed to explore the relative merits of individual and group-based direct service.

Where the goals and needs of an individual closely match those of a group, there is some evidence that group-based intervention offers benefits associated with the interaction of group members that are not matched in one-to-one therapies. The application of direct services in groups is influenced and limited by:

- The scope or purposes of the group activity
- The size of the group
- The group membership (e.g., age, disability, or need)
- The capacity for the therapist to respond to the needs of the individual within the group
- The individual’s potential to benefit from the group
- Organisational logistics (e.g., day, time and setting)

Group-based direct services generally are implemented with groups that have the same diagnosis or who are of a similar age. Groups are also used when teaching skills to people who have similar learning goals (e.g., learning to use AAC systems; learning meal preparation skills). Constructing a successful intervention group requires matching of goals and needs of the individual with those of the group.

**Benefits of a group-based therapy:**

1. **Time-efficiency (economies of scale):** If the group therapy is effective in meeting the individual’s goals, direct therapy implemented with groups can be perceived as being more time-efficient than therapy delivered to each of the individuals separately (ASHA, 2006a; Boyle, McCartney, Forbes, & O’Hare, 2007). However, the therapist is also engaged in organisational
matters such as preparation of materials, and relating to the selection of group members, so this time saving might only be seen after repeated occasions of group service delivery.

2. **Caseload management**: Direct therapy may be made promptly available to multiple people with similar needs utilising a group setting. Group therapies may therefore offer a means of ‘caseload management’ for therapists providing multiple similar services to people with similar needs.

3. **Positive impact of the group dynamic**: The most often cited strength of group-based direct service is that attendees benefit from the dynamics of the group, although such anecdotal reports have not been empirically investigated. The perception is that group members provide one another with peer support and peer learning. Thus, groups are often used when the target activity is social or when interpersonal skills are targeted. Group members (and families and carers) may also develop support networks with those they meet in the group context while developing individual skills.

Unwin and Sheppard (1995) reported that parents rated the processes and outcomes of a group therapy program for children with Minimal Motor Dysfunction as being more important than the structure of the group, and expressed a high level of satisfaction with the outcomes despite structural difficulties (Unwin & Sheppard, 1995). The structural elements identified included resource limitations which necessitated venue sharing and restricted the time available for discussion with the Minimal Motor Dysfunction Unit staff.

Boyle et al. (2007) reported that parents whose children attended speech therapy groups felt that their child benefited from the peer support of the group, whereas parents whose children attended individual sessions felt that the child was advantaged by the individual attention. The authors highlighted the following quotes as illustrating widespread positive views of parents for all types of speech therapy service delivery (Boyle et al., 2007, p. 58):

> I think working in small groups was a good thing for him as well. [SP assistant] managed to make it fun for learning. She did it through games and different things which made it fun for them. I think that builds their confidence when they are in a smaller group.
[My child] was the opposite, she was 1:1, she wasn’t in a group with it. But the teachers had been doing things with her, like learning support in the school… But in this study she was absolutely brilliant with it, I think because it was all made fun.

I feel that it went really well. There’s nothing that I feel that could change with it at all. It was an [SP assistant] that [my child] saw and I was quite happy with that. I was certainly happy with the work that the [SP assistant] was doing with [my child].

Limitations of a group-based therapy

1. **Matching ‘group’ goals to ‘individuals’ in the group:** The main limitation of group-based intervention is that the group is established to meet the needs of the majority of group members. Therefore, some individuals in the group may have needs that are not addressed by the overall goals of the group. While each individual is assessed for suitability for inclusion in a group, generally some aspects of the group therapy are not relevant to each individual and some needs of all individuals may go unmet. For example, a child attending a group therapy for language skills might also have individual needs relating to speech or augmentative communication that need to be addressed for successful participation in the group-based therapy. The child’s augmentative communication needs may have to be addressed in another forum (e.g., individual therapy).

2. **Individual variation among the group members:** Individual variation might mean that responsiveness to the therapy, or progress within the group therapy, will differ. This in turn can impact upon the progress of the group.

3. **Logistical constraints (timetabling):** Group-based services are frequently time-limited. Group programming often requires individuals to move through the program at the same pace. Missed sessions may or may not be able to be made up.

4. **Constraints of the setting for group therapy:** Except for naturally forming groups (e.g., the group home group, the school class group), group therapy is generally delivered in one setting; that setting will not reflect the usual environment of all group members. The need for people
to congregate in a particular setting in order for the group to go ahead means that additional measures (e.g., direct, individual services) must be added to the group intervention to ensure that group-based intervention leads to generalization (i.e., carry-over of skills) from one environment to another for all group members.

**Individual versus group therapy**

Little research has directly compared the benefit of group versus individual interventions. However, there is some evidence to suggest that direct group services might be as effective as direct individual services.

Bumin and Kayihan (2001) tested the effectiveness of two different sensory integration programs for children with spastic diplegic cerebral palsy. Forty-one children with spastic diplegic cerebral palsy and a mean age of 7 years were randomly allocated to three conditions. Children received individual PT training, small group (n = 4) PT training, or a home program (control). The results indicated that both the individual and group treatments had a measurable effect as compared to the control group (home program), and there was not an appreciable difference in effect between the individual and group treatments.

Boyle et al. (2007) compared outcomes for primary school aged children receiving individual and group speech therapy delivered either by a speech therapist or speech therapy assistant. They found no significant differences between individual and group treatments on any of the language outcome measures. (See also findings under indirect therapy services, below.)

**3.2.2 Indirect therapy services**

In an indirect therapy the health professional first conducts and interprets an assessment and designs a therapy program. Then they train others to implement the intervention and monitor the person’s response to the therapy. **Note:** Therapy assistants only work directly with the person (i.e., they do not develop programs to be carried out by others or train others to implement programs). However, because they work under the supervision of a therapist in carrying out a task developed by the therapist, therapy assistants are actually providing the therapist’s indirect service.
The development and maintenance of skills or functions that require massed practice or repetition are particularly good targets for indirect service. Because the person learning to implement the intervention generally may be more readily available than a therapist, there is growing recognition that indirect therapy is a viable and effective adjunct or alternative to direct therapies (Dreiling & Bundy, 2003). Although few studies have compared the effectiveness of direct and indirect therapy, some evidence suggests that indirect methods are as effective as direct individual therapy for helping people with a disability to acquire skills.

Home programs are particularly common in early intervention (Marshall & Sheppard, 1981). The belief is that the potential for positive therapeutic effects and improved carry-over and generalisation of skills is increased (Marshall & Sheppard, 1981; Mazzitelli, Melo, & Piemonte, 2007). Some indirect approaches have been shown to be effective (e.g., the Hanen program; Coulter & Gallagher, 2001). However, the evidence for training parents is not always positive. For example, Chiarello and Palisano (1998) found that providing extra training to mothers (i.e., in the home as well as in the clinic) resulted in more directive, rather than more pleasant, interactions between mothers and children.

Indirect therapy may provide opportunities for increased intensity of therapy activities and the conduct of therapy in everyday environments (McConachie & Diggle, 2007). However, indirect therapy relies on the resources of family members or significant others to implement the intervention faithfully. The therapist must be sure that those involved have appropriate training and supervision to correctly carry out and monitor their intervention (Australian Physiotherapy Association, 1999; OT Australia, 2001; Speech Pathology Australia, 2000). Therapists also must ensure that asking families to take on a role that they would normally assume does not mean that other important family roles are neglected. The parental role must supersede the therapist role if a parent does not have the resources to play both.

While research studies might evaluate the impact of ‘ideal’ conditions for indirect therapy treatments, clinicians may find it difficult to replicate the level of service required to make indirect therapy effective (McConachie & Diggle, 2007). For example, while quality training is key to the effectiveness of indirect therapy, the reality is that in practice parents and teachers receive little training in implementing home or school programs beyond an introduction to the aims and methods to be used. Anecdotal reports suggest that many teachers and parents find ‘off the shelf’ or even individualised home or school programs onerous to implement as they are
largely left to conduct the activities without the support of the therapist and are expected to do so in addition to their usual responsibilities at home or school. It is for this reason, and their questionable efficacy, that home or school programs have lost favour in many therapy services, or are only used as adjuncts to direct therapy.

The following studies show the effect of indirect therapy when designed and developed in ideal conditions including adequate levels of training for the person implementing the indirect therapy.

Example 1  **Indirect therapy - parent mediated therapy in autism**

Diggle, McConachie and Randle (2002) found only two randomised controlled trials examining the efficacy of parent mediated therapy for children with autism spectrum disorder. These two studies evaluated different duration of intervention as being effective and their results cannot be compared. The authors concluded that “the principle of involving parents and increasing relevant skills, allowing generalisation of programmes for children within the home, and supporting parents’ confidence is self-evident, though potential disadvantages are not well explored. The research currently available does not allow conclusions to be drawn about best practice.” (p. 10). No research is available to compare different methods of training parents or helping them to develop skills, and short-term courses as an add-on to the child’s schooling are not likely to be sufficient to ensuring parents develop the ability to solve problems as they arise. The authors emphasized the need for urgent research and outlined numerous implications for future research.

McConachie and Diggle (2007) conducted a systematic review of parent-implemented interventions for young (1-6 year old) children with autism spectrum disorders. From a review of twelve eligible published and unpublished studies, they concluded that there is sufficient evidence in the literature to support that parent training can and does improve the social communication of young children with ASD as determined by measures of language and behaviour. They also found parent training to have a positive impact on parents’ knowledge, skills, depression, stress, and parenting of siblings of the child with ASD.

Example 2  **Indirect therapy - language therapy in schools: use of therapy assistants**

In a randomised controlled trial Boyle et al. (2007) compared outcomes for primary school aged children receiving (i) direct individual therapy delivered by a speech therapist, (ii) indirect individual therapy delivered by a speech therapy assistant,
(iii) direct group therapy delivered by a speech therapist, (iv) indirect group therapy delivered by a speech therapy assistant, and (v) community-based speech therapy as a control for economic confounds. They found that “there were no significant post-intervention differences between direct and indirect modes of therapy on the one hand, or between individual and group modes on the other on any of the primary language outcome measures.” They concluded that speech language therapy assistants “can act as effective surrogates for [SPs] in the delivery of services within primary schools to children with primary language impairment who do not require the specialist skills of an [SP]” (p. iv).

Example 3  Indirect therapy – intervention to parents with an intellectual disability to improve children’s language development

In a randomised controlled trial Feldman, Sparks and Case (1993) trained 28 parents with an intellectual disability in language stimulation techniques. Their interactions with their children were compared with a control group of 38 families with children of a similar age with mothers who did not have intellectual disability. Prior to the training the parents with an intellectual disability showed significantly less positive mother-child interactions. Following the home-based parent training, the training group exhibited no less positive interactions than the control group, and the infants scored significantly higher than the control group on tests of language and social development, and maintained the effects for 82 months following training. Furthermore, the control group, when they received the training later on, replicated the treatment effects. The authors concluded that home-based training of mothers with an intellectual disability increased the positive maternal-child interactions and facilitated language development in their children.

Example 4  Mobility intervention by school staff

Low (2007) included 39 children in a year long mobility program in school (MOVE curriculum - mobility opportunities via education) that focused on practicing sitting, standing and walking daily in the classroom. Physical therapists trained and assisted staff in carrying out the program 2-3 hours per week for one year. Following this indirect therapy, the majority (79%) of children made gains in functional mobility.

3.2.3 Consultative Services

Rather than being “corrective” in nature, as in direct or indirect therapy, consultation focuses on enabling people with a disability to participate and succeed despite the limitations imposed by the disabling condition. The focus of consultative services is
on solving problems confronting people with disabilities and significant others in their lives. This makes it very compatible with family-centred practice. Thus, consultation is worthy of further attention in relation to therapy services to people with a developmental disability.

Consultation can take many forms. The two most common are expert consultation and collaborative consultation.

**Expert Consultation**

As the name implies, expert consultants use knowledge and skills to develop solutions to problems. For example, an occupational therapist might design a kitchen or bathroom accessible for a wheelchair user or ensure access to a building or community facility.

Although little literature has examined its effectiveness, education of people with a disability and their families and other caregivers is a common component of expert consultation. Rindflesch (2007) examined the practice of patient education within the practice of physiotherapy and found that therapy and education were inseparable and that therapists use education as a means of empowerment.

**Efficacy of expert consultation involving training of staff**

Unfortunately, most studies evaluating efficacy of therapists training staff working with people with a disability measure participant’s knowledge or behaviours following training (e.g., Dobson, Upadhya, & Stanley, 2002; Melville et al., 2006), and not the outcomes of the training for the person with a disability. Thus, it is not always clear that increased knowledge in staff working with a person leads to either behaviour change or therapeutic benefit for the person with a disability. Measuring indirect outcomes of the training is problematic because any changes occurring cannot necessarily, or conclusively, be attributed to the training, as other factors beyond the staff training may have changed within the individuals or the environment to precipitate the change.

A useful example of a study evaluating the efficacy of staff training as a therapy (for an individual with a disability) is a recent pilot study by Smidt, Balandin, Reed and Sigafouos (2007) in which the authors examined the clinical outcomes of training direct support staff in effective communication strategies (including AAC) for adults with an intellectual disability and challenging behaviour. The 4-week training program was delivered by a speech pathologist to staff in three group homes. The training
focused on staff attitudes and beliefs towards challenging behaviour, communicative interactions, and the importance of working as a team in the management of challenging behaviour. Along with changes in attitudes, beliefs, and behaviours of staff, the residents’ change in rate of challenging behaviour was also measured. Results indicated that staff increased their use of AAC and praise and decreased their use of inappropriate language to the residents, and there was an associated decrease in the resident’s challenging behaviour in the short term. The authors concluded that staff training based on providing information and addressing attitudes and beliefs about challenging behaviour and strategies for communication may potentially benefit both staff and residents.

**Collaborative Consultation**

Collaborative consultation is the more common type of consultation used in practice with people with developmental disabilities. However, it is the service delivery least familiar to health professionals (Dunn, 2000).

Collaborative consultation is a team process that can be delivered with the person with a disability, the family or other service providers. Frequently, the therapist works with consultation partners other than the person with the disability (e.g., a parent seeking assistance in functions related to parenting a child or adult with a disability) (Dunn, 2000). Thus, generally, people with disabilities benefit “indirectly” from collaborative consultation through the partners’ increased abilities to interact with them in varying capacities. However, because the heart of collaborative consultation is helping others solve their own problems, it also is possible for the person with the disability to be the consultation partner.

In collaborative consultation, the therapist’s primary role is not to impart knowledge, but to facilitate the process. Team members work together to define the problem and to generate and implement solutions. Each team member offers expertise and makes a contribution so that the outcomes of collaborative consultation are greater than what could be achieved by any individual. Each team member also gains knowledge and skills from the interaction. Through collaborative consultation partners learn a process to identify and manage their own problems. Thus, they may experience less need for repeat or long-term direct therapy. (Schein, 1999)

Indirect therapy shares some characteristics with collaborative consultation and the two are sometimes confused. A key differentiating factor between indirect therapy and collaborative consultation is that in the latter the therapist assists the consultee
to solve problems they encounter in their own daily life and roles that stem from the nature of a disability (Schein, 1999). Often this involves adapting activities or incorporating particular strategies into everyday routines. In doing so, the consultee benefits, gaining skills and changing attitudes and behaviours (Kemmis & Dunn, 1996). In contrast, indirect therapy is generally done in a structured situation by someone (a therapy partner) acting in the therapist’s stead, and with the aim of the therapy changing the person.

The different aims, process and outcomes of collaborative consultation require different skills and importantly, attitudes from the therapist. Bruder (2000) asserted,

[the] most important reason for the lack of implementation of family-centred early intervention may be the attitudes of those in early intervention who still see themselves as ‘expert’ and the family as the ‘client’ (p. 110).

Collaborative consultation leads to caregivers or significant others playing their own roles more effectively and efficiently. The benefits are, therefore, widespread across a range of interactions between the recipient of consultation and the person with a disability (Dunn, 1990). Consultation may have a very broad impact beyond that obtained through either direct or indirect therapy (e.g., Dunn, 1990; Bundy, 1991). For example, the therapist may impact on the social environment through changes to others’ attitudes achieved through the consultation process. In this way, the intervention benefits the recipient, the person with a disability (even if they are not the direct recipient), and people with a disability who may encounter the situation in the future.

Unlike indirect therapy, consultation also places relatively little burden on the recipient, as it does not require them to make additional efforts in providing ‘therapy’ but rather subtle changes in their approach. In fact, the recipient of consultative services benefits from having their problems addressed and developing new skills in their existing roles and functions. Consultation tends to target participation in daily roles, activities and meaningful occupations rather than the completion of extra ‘tasks’ or ‘activities’ (Kemmis & Dunn, 1996).

Unfortunately, in practice, consultation is often treated as a ‘tag-on’ to direct intervention rather than as a bona fide approach on its own. Not surprisingly, there is limited research comparing consultation with other service delivery types. Further, existing research generally compares the effectiveness of equal amounts of time
spent in consultation and direct service (e.g., Dunn, 2000; Kemmis & Dunn, 1996), which may not reflect everyday practice. We review available literature in this section.

**Therapy to children in school**

Research comparing types of service delivery in school-based services suggests that there are similar outcomes for children with a disability when direct service and consultation types are used (Dreiling & Bundy, 2003; Dunn, 1990; Kemmis & Dunn, 1996). However consultation yields outcomes in a wider range of functionally-relevant needs than does direct intervention (Dunn, 1990). Teachers (consultation partners) also attributed more of the (target) children’s gains to therapy where individualised educational plan (IEP) goals were addressed through collaborative consultation rather than by direct, pull-out services (Dunn, 1990).

G King et al. (1999) examined the outcomes of primary school age children receiving school based therapy (SP/OT/PT) delivered by direct, indirect, and consultative models of service delivery and found that there were clinically and statistically significant improvements in the participants’ outcomes (speech, school productivity, mobility) that were maintained up to six months after therapy. They concluded that speech pathology, occupational therapy, and physiotherapy were useful for children with a mix of special needs, and that the consultative approach was viable and effective in this group.

**Language development in the classroom**

Hadley, Simmerman, Long and Luna (2000) compared the outcomes of traditional speech therapy in the classroom (i.e., withdrawal model) with collaborative consultative speech therapy involving a speech therapist and the classroom teacher. Four classrooms were selected involving children of mixed language backgrounds and academic ability, two receiving the ‘control’ condition of traditional speech therapy and two receiving collaborative consultation therapy. The classroom-based collaboration between the speech pathologist and the teachers had some additional benefits over the traditional therapy. These benefits were evident in the children’s performance on standardised language tests, and were not affected by the children’s language background. The authors concluded that this study added to the growing body of research outlining the benefits of collaborative consultation as a legitimate and valuable form of therapy in the classroom setting.
Throneburg, Calvert, Sturm, Paramboukas and Paul (2000) compared the effects of different modes of speech therapy service delivery for improving children’s vocabulary in the classroom. They found that the collaborative consultation mode yielded significantly greater gains than a school program delivered by a teacher or a direct therapy delivered by a speech pathologist. The authors concluded that collaborative consultation was the most effective mode of service delivery for language interventions focusing on vocabulary. This study has potential implications for working on vocabulary for children who have lifelong disabilities and who use AAC systems.

**Improving motor ability of children with cerebral palsy at school**

Anderson et al. (1999) focused upon the impact of transdisciplinary teaming in comparison to traditional, withdrawal direct therapy. The school-based treatment method involved collaborative consultation with transdisciplinary team members at a school setting, aiming to improve the motor abilities of three primary school aged children with cerebral palsy. A multiple-baseline design across individuals was used to compare motor outcomes and showed a treatment effect for all children. The authors noted that the amount of time needed for the ‘transdisciplinary team’ to meet to design the environmental strategies for increasing motor abilities did not take very much time after the first meeting (average fifteen minutes per week).

**Selection of modes of therapy**

**Relative costs of the different modes of therapy**

Funding opportunities and methods for determining the cost input and output in health services has changed considerably over recent decades. Movement away from ‘funding based on past health funding allocations’ to an ‘output-funded’ and more recently ‘outcome-funded’ model has changed the way in which services are delivered (Dyson et al., 2000; Mueller & Neads, 2005). In addition, research in the health sciences has moved from measurement of therapy processes towards measurement of functional outcomes (Hagglund & Heinemann, 2006). This has enabled exploration of clinical outcomes when compared across different service types. The focus of therapy practice literature has also moved beyond direct therapy services to a more balanced approach that includes indirect and consultative services as an addition to, or replacement for, direct therapy services (e.g., RCSLT, 2005).
Direct individual services are more therapist-time-intensive per person/family than direct group services, and as such, direct individual services are the most costly (S King, G King, et al., 2004). Indirect services may not be less time-intensive, or costly, than direct services. Due to the nature of consultative services, where therapists work with others to solve problems, administrators sometimes see it as a way of increasing therapy caseloads. However, Rainforth (2002) cautioned that consultation should not be viewed primarily as a means to reduce the time and cost of service delivery. In fact, at least initially, consultation occupies considerable therapist time. Only once the consultative relationship is established, and as each partner develops skills over time, does the consultation method take less time than direct therapy (Dreiling & Bundy, 2003).

There is little research examining the cost-benefits of the different types of service delivery to determine benchmarks for costs or allocation of resources to the different types. As outlined above, obvious costs for direct individual therapy are relatively higher than direct group therapy, and indirect therapy. However, cost-effectiveness depends not only on the cost of the therapy but also on efficacy. An apparently more costly therapy may be the most cost-effective in addressing needs over the long term. To date, there is little information relating to the relative cost-effectiveness or efficacy of one form of service delivery over another. What is known is that optimum frequency, duration and intensity of therapy needs to vary according to the goals to be achieved (Bower, Michell, Burnett, Campbell, & McLellan, 2001; Andrade, Kramer, Garber, & Longmuir, 1991).

**Combining different modes of therapy (direct/indirect/consultative)**

Therapy staff in disability services provide all three types of therapy services (e.g., Case-Smith & Cable, 1996). This clinical practice aligns with the literature that indicates that a direct therapy service (aimed at the individual) might be of limited effectiveness if indirect and/or consultative services (aimed at the individual within the environment) that best support the direct therapy are not also provided. For example, providing a direct service to a person with dysphagia to assess swallowing and prescribe dietary modifications might address the immediate medical danger to the person but fail to address environmental factors necessary to maintain the person’s safety, wellbeing and enjoyment of meals over the long term. Several such clinical examples are provided below.

Health professionals trained in both the ‘medical’ and ‘social’ models of disability are aware that a sole focus on the ‘diagnosis’ and ‘presenting problems’ within the
individual with a disability will (a) neglect the influence of the environment and opportunities or barriers within the environment to increase activity and participation, (b) not provide a strong basis for making decisions about intervention that is effective and improves the person’s quality of life and engagement with the community, and (c) significantly limit the usefulness and scope of therapy services.

Populations of people with developmental disabilities are heterogeneous with a range of idiosyncratic or individual needs. It can be argued that services to people with a disability, who have complex and multiple needs, need to be flexible in delivering all three types of service delivery to different degrees for different people. Thus, it is the combination of the different service delivery types that is likely to be the most suitable for meeting the needs of people with a disability. Although the combination effects of the three service delivery types have not been rigorously assessed, the practical implications are evident in a range of clinical situations in current arrangements in disability services. Four examples of how therapy modes might be combined to best effect for functional outcomes are outlined below.

**Example 1  The management of communication and provision of AAC systems**

<table>
<thead>
<tr>
<th>DIRECT</th>
<th>INDIRECT</th>
<th>CONSULTATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of sub-skills relevant to the design of AAC systems.</td>
<td>Training others in how to teach the person and others to use and program the system and provision of opportunities for communication.</td>
<td>Assisting others to solve problems and build skills to engage the person using AAC; addressing environmental barriers and opportunities.</td>
</tr>
<tr>
<td>Determination of current &amp; future communication needs.</td>
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Goal: Functional use of augmentative & alternative communication

In the example above, to provide only a direct therapy neglects the fact that other people need to support the person’s use of an AAC system. Communication is a social interaction. Since others are always involved consultation can identify and resolve barriers to enable the person to achieve long-term success in communication. Conversely, neglecting consultation where communication partners develop skills to engage the person in communication might construct ‘incompetence’ in the person (see Duchan, Kovarsky, & Maxwell, 1999), by perpetuating a reliance on others.
Example 2  Management of dysphagia

Goal: Management of dysphagia and nutrition

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<tr>
<th>DIRECT</th>
<th>INDIRECT</th>
<th>CONSULTATIVE</th>
</tr>
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<tbody>
<tr>
<td>Assessment of the individual (skills of swallowing and feeding, health and social parameters). Recommendations and information to guide safe mealtime practices. Compensatory strategies.</td>
<td>Training others to implement compensatory techniques (e.g., positioning, food modification, feeding techniques). Environmental modification.</td>
<td>Working with family/caregivers involved at mealtimes to promote understanding and resolve problems with feeding. Creating a social environment for safe and enjoyable mealtimes.</td>
</tr>
</tbody>
</table>

In the example above, the expertise of the SP is crucial in direct therapy. Indirect therapy is used to achieve effective management every mealtime when the SP cannot be present. Consultancy will (a) improve compliance, acceptance, and efficacy of the direct and indirect services provided, (b) promote maintenance of the benefits of therapy over time, (e.g., food acceptance), and (c) have positive ‘flow on’ effects to other individuals in the same environment.

Example 3  Management of mobility in people with a developmental disability

Goal: Functional mobility

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<th>DIRECT</th>
<th>INDIRECT</th>
<th>CONSULTATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess mobility, equipment or training needs. Provision of equipment. Recommendations regarding safe movement and transfers.</td>
<td>Provide others with therapeutic strategies and monitor change.</td>
<td>Altering the environment or day-to-day activities to increase safety and function in mobility (e.g., preventing falls, maintaining good health).</td>
</tr>
</tbody>
</table>
Direct intervention is indicated for initial assessment of a person’s current mobility and determination of appropriate strategies to improve function. Direct intervention strategies may include provision of training; recommendations regarding safe movement and transfers; and provision and training in the use of appropriate equipment. Training others in appropriate therapeutic strategies to implement with the person and monitoring progress constitutes indirect therapy. Consultative intervention can achieve lasting change in the environment, activities and general health status to improve overall function.

Example 4 Participation in community activities

<table>
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<tr>
<th>DIRECT</th>
<th>INDIRECT</th>
<th>CONSULTATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct assessment of the person’s skills and interests.</td>
<td>Training others in strategies to teach and practice new skills with the person, including in the context in which they will be used.</td>
<td>Assisting other participants to develop skills to involve the person. (e.g., identifying barriers to participation and assisting other team members to develop new skills to modify their interaction or assist the person.)</td>
</tr>
<tr>
<td>Provision and training in the use of adaptive equipment.</td>
<td>Trialling of compensatory and learning strategies with the person.</td>
<td></td>
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</table>

A combination of direct, indirect and consultative intervention is indicated to achieve participation in community activities. Direct therapy is best to assess a person’s skills and establish the most effective compensatory and learning strategies. It is also indicated when adaptive equipment is introduced. Indirect therapy is appropriate to train others to teach and practice new skills with the person. This enables the person to receive more practice (‘therapy’) than can be provided directly and, where practice occurs in context, can assist generalisation of skills. Consultative intervention with other participants modifies the social environment and develops their skills to involve the person in a functional way. Without consultation, other participants are likely to limit the person’s ability to implement their new skills in functional participation. Conversely, consultative intervention can increase everyone’s participation.
3.3 Settings for therapy

Clinic Settings
Often the choice to offer a clinic-based service is one of familiarity, comfort and convenience for the service and therapists (McWilliam & Bailey, 1994; McWilliam & Sekerak, 1995). The majority of therapists in schools operate a ‘pull out’ or ‘withdrawal’ model of therapy, whereby the health professional sees the child away from the classroom and in individual appointments (ASHA, 2004). Health professionals working in community settings have also expressed a preference for clinic-based services over those conducted in natural settings. This is particularly true for therapists with more years of experience and therapists who have worked in both health and disability service systems. Although direct service can occur in natural settings (e.g., school or home), owing to its isolation from natural settings (e.g., home, school, workplace, community) and the people in those settings (e.g., teachers, peers, employers), providing a clinic-based service favours the direct mode of therapy.

However, given that the environment exerts a significant influence on activity and participation (WHO, 2001), it is not possible to observe a person’s true performance (body function or skill) or participation without direct observation of the ‘person in the environment’. Without considering a person in the context of the environment during assessment (either directly or indirectly), interventions for increasing activity and participation cannot be designed meaningfully.

Natural settings (home, school, community)
It is generally suggested that direct service in natural settings is more effective than ‘pull-out’ or clinic-based services, particularly regarding the generalisation of skills and achievement of functional outcomes (Anderson et al., 1999; Campbell, McInerney, & Cooper, 1984; Giangreco, 1986; Karnish, Bruder, & Rainforth, 1995). In school settings this might mean seeing children in their classrooms or on the playground and in interaction with teachers and other students. In the community, natural settings might include the workplace, home, leisure areas or any spaces where people with disabilities interact with family, friends, colleagues, and other community members.
There are many factors contributing to the selection of therapy setting and therapists must carefully weigh up the relative benefits and limitations of each. We consider here literature about factors contributing to the selection of therapy setting.

**Person/ family needs and preferences**
As person-centred and family-centred therapies represent best practice (see section 3.1), selection of the setting for service delivery (clinic, home, or community setting) should reflect and further the goals, needs and preferences of the person with a disability and family. On the one hand, services delivered at home or in school suit many families because they remove the need to transport the person with a disability to the clinic. Some families, however, find that home visits are intrusive and prefer travelling to a clinic. The clinic might also provide a ‘neutral’ space for the person/family in being away from the home and away from the school or other community setting.

**Impact on the person’s day-to-day routine**
Services might also be delivered in a community setting, such as the school or workplace. At school or work, the options are either for a ‘withdrawal’ service (person is taken out of class/work to receive a service in another room), or a service based in the natural setting. Each has advantages and disadvantages and it is up to the clinical reasoning of the therapist to evaluate these. For example, withdrawal services mean that the person is withdrawn from their usual occupation and therefore misses out on the learning/work that would otherwise occur in that setting, and also that families, carers, teachers, and employers are less likely to be involved in the service.

**Impact of the therapy setting on others**
Classroom-based and workplace-based services often involve the teacher, aide, employer or peers in service delivery. In some environments integrating therapy into activities already taking place is onerous, intrusive, or beyond the accepted or familiar roles of others in the environment. Likewise, some people may find engaging in a consultative service to be challenging in demanding subtle changes to their style. Thus, identifying the ‘best’ setting for service delivery demands consideration of many factors within the person with a disability, the family, and the staff working with him/her. Whatever the setting, these factors need to be considered or addressed in order for therapy to be effective.
Impact of the setting on performance

The clinic setting will always be limited by its lack of naturalness in not being a ‘part of everyday life’ of the person with a disability. Ecological and systems models inform us that performance is dependent on context (M Law et al., 1996; WHO, 2001). While prediction of performance is a premise of all standardised assessments, only a very few (e.g., Assessment of Motor and Process Skills [AMPS]; Fisher, 2006; Test of Playfulness [ToP]; Skard & Bundy, 2008) are situated in the context of everyday performance. This can limit the evaluation of needs and efficacy of interventions based on that evaluation. Thus, assessment reflecting a variety of contexts is required for a true understanding of a person’s function.

Information may be gathered from direct observation and assessment of the individual in, or outside the usual context. Family and other caregivers (e.g., teachers and care workers) can provide vital information about performance over time and in many different contexts and in relation to many different personal factors (e.g., fresh/sleepy mornings versus tired/alert evenings; at home versus in the classroom; with a carer versus with a stranger). As valuable as it is, information gathered outside of standardised testing may be biased and difficult to interpret. The application of such testing depends on the knowledge and expertise of the examiner. Thus, current developments in standardised assessments for administration in context are extremely valuable.

Generalisation of skills

When therapy is integrated into everyday activities and routines, skills are learned in the places where the person will need to use them (e.g., therapy aiming to alter behaviour in the community occurs in the community). This mitigates problems associated with difficulties in skill transfer from the ‘clinic’ setting to natural settings. A number of single-case design studies have shown greater positive effects of therapy delivered in natural settings, irrespective of whether the intervention was provided by therapists or others (Anderson et al., 1999; Campbell, Mclnerney, & Cooper, 1984; Giangreco, 1986; Karnish, Bruder, & Rainforth, 1995).

Conversely, clinic-based therapy is not immediately conducive to the carry-over or generalisation of skills from the clinic to the home or other settings (Gresham, 1998). Therefore, staff providing services within a clinic setting need to build strategies to enhance generalisation of the therapy provided in order for it to occur (e.g., using materials or people from home within the clinic, programming for maintenance or generalisation beyond the clinic). The limitations on functional outcomes of clinic-
based therapies may therefore lead to the conclusion that therapy in a natural setting, although potentially more expensive per session, may be more efficient to achieve some outcomes (e.g., social skills training; Gresham, 1998).

**Service provider factors**

By gathering clients in a single, well-equipped setting, clinic-based services enable clinicians to see a greater number of individual clients without engaging in indirect therapy or consultation by saving on travel time and costs. The therapist also has more control over the environment (availability, size, distractions, consistency, etc.). Conversely, the isolation and relative lack of control in other settings (particularly the home) can raise occupational health and safety concerns. Conducting therapy outside the clinic environment may also raise concerns for the privacy and confidentiality of the client.

The clinic setting may be preferred if a person needs access to bulky, specialised equipment or materials that are only available in the clinic or are difficult to transport to the person. Thus, services such as trials of seating, AAC systems, or specialised computer access can be more conveniently delivered in clinics. On occasions where a service requires a quiet room for testing of individual’s skills (e.g., on standardised tests where performance affects scores), the clinic might also be preferred to provide a space free of distractions. In these instances, however, the disadvantage of not being able to observe the impact of the environment on performance needs to be weighed against the advantages of the clinic setting.

In clinic settings, other team members and support staff are more likely to be available for collaboration. Conversely, therapists working in diverse settings can find that opportunities for consultation with other therapists for problem-solving and professional development can be limited, resulting in feelings of professional isolation (Rainforth, 2002). Wills and Case-Smith (1996), however, found that therapists were able to overcome such isolation through use of collaborative consultation to build mutually supportive partnerships with teachers in the schools in which they work.
SECTION 4:

VIEWS AND EXPERIENCES OF DISABILITY SERVICES: PERSPECTIVES OF PEOPLE WITH A DISABILITY, FAMILIES AND CAREGIVERS

The person with a disability and their families/caregivers are the raison d’etre of disability services. The primary focus of therapy services is to enable people with a disability to achieve their goals and have a satisfying and fulfilling life. Accordingly, the person and family are placed in the centre of the framework outlined in Section 2. In this section we will review the views and experiences of people with a disability, families, and caregivers.

There is a vast body of literature regarding ‘satisfaction’ with disability services, although this is heavily weighted toward the perspective of families and caregivers over people with a disability. While many (though certainly not all) of these studies have been qualitative, small in size, and restricted to clients of a single service, the consistency of general findings in study after study supports the generalisation of their findings. We will summarise those findings in this section.

**Person or family experiences and satisfactions with the ‘person-centred/family-centred’ service**

Two studies surveying parental satisfaction (Nolan, Orlando, & Liptak, 2007; Unwin & Sheppard, 1995) are most informative as to what parents consider important in a service. Nolan et al., (2007) developed a survey using Presler’s (1998) framework of eight components of family-centred care coordination for parents of children with complex physical and developmental disabilities. Respondents prioritised access to care; involvement in decision-making; communication between providers and systems; and information about treatment options, programs and services as the most important. Respondents in Unwin and Sheppard’s (1995) study also identified placing greater value on parent input as important. When asked what they liked most about the service the most frequent response was “the understanding and support..."
from the [service] staff” (Unwin & Sheppard, 1995, p. 200). Access issues identified included ‘offering services out of school hours’ and ‘provision of parking’.

One of the few studies in Australia to assess family-centred practice was conducted at the Novita Children’s Services in South Australia (Raghavendra et al., 2007), and used the Measure of Process of Care (MPOC; S King, Rosenbaum, & G King, 1995). Surveying both parents/ caregivers and staff, Raghavendra et al. (2007) found that generally both groups rated the family-centred approach of the service as positive. However, while families viewed the service as respectful and supportive, they were less satisfied with provision of information. Continuity of care was also perceived as an area that would benefit from improvement (Raghavendra et al., 2007).

Raghavendra et al., (2007) reported that the principle factors influencing parent satisfaction with the child disability service were ‘family centred culture’ at the organisational level and ‘parent perceptions of family-centred services’. That is, satisfaction was strongly influenced by family-centred service orientation and practices (M Law et al., 2003; Raghavendra et al., 2007). Parents of children with more complex problems (who were more likely to attend a greater number of services) were less satisfied that services were family-centred, while services provided at fewer locations increase family satisfaction. However, provision of family-centred services at each of the multiple locations reduced the negative effect of multiple service sites (Raghavendra et al., 2007). Findings of this study again support that family-centred practice should be considered the ‘best practice’ approach to meeting the needs of children with disabilities.

**Views and experiences of the different modes of therapy service delivery (direct, indirect, consultative)**

Expectations of what therapy is will influence the views of the person with a disability and their family, and their experiences of the therapy services provided. To date, the predominant view among families, and indeed service providers, has been that ‘therapy’ means ‘direct therapy’ (traditional therapy) and excludes indirect or consultative therapy (both as an alternative and as an adjunct to traditional therapy).

Two important factors may influence the person/ family and therapist’s views that therapy is ‘direct therapy’:
1. Historically therapy services have been provided as direct therapy, and the provision of ‘therapy’ has been associated almost solely with ‘direct therapy’ (Llorens, 1973; Rourk, 1996). Thus, over time, the person/family may have learned from ‘the system’ (and from service providers themselves) that therapy is only ‘real therapy’ when it is provided directly to an individual by a therapist. Within the service culture, other forms of therapy have been seen as alternatives to therapy, rather than being legitimate forms of therapy themselves.

2. Training programs for therapists perpetuate this as they emphasise the development of skills for providing direct therapy and spend relatively less time on indirect therapy or collaborative consultation. A simple analysis of the three approaches reveals little overlap in the skills that are associated with each. For example, direct therapy relies upon good diagnostic abilities and knowledge and skill to implement therapy techniques. Indirect therapy further requires competence in teaching others. Additional skills needed for consultation are competence in engaging in and facilitating collaborative teamwork, active listening and enabling another person. Teaching and listening are involved in all three but they must be honed to a fine art for either consultation or indirect service. Indeed, the primary difference between the different service types is in the degree of emphasis upon ‘empowering others’. Thus, a preparation focussed on direct therapy does not necessarily equip a therapist with adequate skills to conduct indirect and consultative service delivery.

Furthermore, valuing a therapist’s skills in direct therapy over indirect or consultative therapy and emphasising their role as an ‘expert’ (as in direct therapy) reduces the therapist’s capacity to view others as capable of taking on roles in therapy (Bruder, 2000; Schein, 1999), as is required in consultative and indirect therapy. This means that therapists systemically have difficulty engaging with others in a truly collaborative consultation model.

Despite the prevailing culture within disability therapy services favouring provision of ‘direct’ therapy over indirect or consultative therapy, the evidence shows that when people are in receipt of the various forms of therapy they report similar levels of satisfaction with all three modes (e.g., Boyle et al., 2007). Parents, teachers and others describe similar levels but different sources of satisfaction according to
therapy type (Boyle et al., 2007). Overall, families perceive that services are appropriate when associated with positive outcomes, not necessarily when being of a specified service delivery type (Boyle et al., 2007; Sloper, Greco, Beecham, & Webb, 2006).

These findings suggest that the person’s individual needs and preferences might influence selection of the mode of therapy, but also that when the person has had a positive experience with a therapy, the mode is not a dependent variable for parent satisfaction. As indicated above, what is more important in influencing person and family satisfaction with a therapy is the ‘person- or family-centredness’ of the therapy mode. For all modes of therapy (direct/ indirect/ consultative), parent and service provider satisfaction is enhanced by responsive and respectful services provided within a family-centred culture (Raghavendra et al., 2007; Dyke et al., 2006; M Law et al., 2003).

While there is little information available on what proportion of direct versus indirect therapy services might be viewed as optimal for the person/ family, there is some indication that even low rates of direct service may provide a valued service. Greco, Sloper, Webb and Beecham (2006) reported that key-workers (case managers) who estimated that they spent as little as 25% of their time in direct contact with people with a disability and their families were found to be delivering a valued service.

**Sources of dissatisfaction with therapy**

**Difficulty accessing relevant information**

As indicated above, access to relevant information about disability and services has a significant influence on parental satisfaction with a disability service. This is not surprising, given that gaining information is vital to the family’s ability to provide appropriate and continuing support to a child with a disability (Dale, 1996). Redmond and Richardson (2003) reported that families become frustrated when (a) services do not provide comprehensive information, (b) the process of gaining information is ‘difficult’ or ‘haphazard’, and (c) they receive conflicting information. Other parents, informal contacts, and even overheard conversations are often rated as being a better source of information than the service providers responsible for providing it (Redmond & Richardson, 2003). The provision of and satisfaction with information has also been found to have substantial implications for demand management, which will be discussed in Section 6 of this report.
Eligibility for services

Families of children with multiple or complex disabilities report that eligibility for services can be complex and problematic, and that this can impact upon their access to a service (Redmond & Richardson, 2003). Families also report frustration that services are poorly coordinated. Poor service coordination might result in the family experiencing a long waiting period followed by provision of multiple services offered simultaneously. Once services are procured, travelling to services and/ or fitting into the family routine services that are less-than-adequately matched to the family’s needs is a source of stress. For some, the stress is so great that receiving services meant to assist them is not worth the struggle (Redmond & Richardson, 2003).

Unmet needs as carers and family members

Families also report that services to address their needs as carers and family members (i.e., consultative services) are inadequate (Redmond & Richardson, 2003). When there is a (real or perceived) ceiling on the total amount of services available, carers and family members may feel duty-bound to prioritise direct services to their son or daughter over the services that might assist them to manage the person’s disability in the context of the family routine. Optimising the relational aspects of services (i.e., consultative and family-centred service delivery) may help to fill some of this gap by enabling the individual to receive ‘therapy’ and the family to receive ‘support’ simultaneously (Redmond & Richardson, 2003). Peer supports, provided at a time when carers are ready, are also viewed as constructive, serving carer’s needs for both support and information (Redmond & Richardson, 2003).

Engaging with multiple professionals

Todd and Jones (2003) reported that parents of children with an intellectual disability experience a number of problems in their interactions with health professionals. These parents (usually mothers) did not always feel that their aims and goals for their son or daughter, or their roles as parents, were viewed as legitimate. Their early life interactions with therapists (e.g., disclosure of diagnosis) were found to influence how they viewed services. Over time, the parents adopted ‘battle’ mentalities in working hard to overcome service barriers and influence their son or daughter’s therapy experiences. The implication of this study is that parents’ experiences in the past impact upon their engagement with health professionals in advocating for their son or daughter’s needs. With the optimal situation being to have parents engage in collaborative partnerships in ‘family-centred’ frameworks of service delivery, services need to explore the experiences and needs of parents and ways to better support families across the lifespan (Todd & Jones, 2003).
The literature to guide funding and resource allocation and caseload management in provision of therapy services in the disability sector is scant (Dyson et al., 2000; Murchland & Wake-Dyster, 2006).

Although indirect and consultative modes of therapy potentially offer benefits for caseload management over time (enabling provision of a broader service to a greater number of people), underutilisation in favour of direct service delivery could be driving up demand for occasions of service from therapists (Rainforth, 2002). While professionals may use a range of therapy types (direct, indirect, and consultation), the literature suggests that therapists use the type of therapy they prefer, rather than selecting therapy to match client preference or person characteristics (McWilliam & Bailey, 1994; McWilliam & Sekerak, 1995). As each discipline has its roots (and a large proportion of its current training and practice) in the medical model, therapists’ actions tend to be less person-centred, family-centred and strengths-based than is required.

**Duration and intensity of therapy**

As intervention plans (including length and intensity) are designed on an individual basis, it is not possible to prescribe specific time-frames for intervention. Overall, the literature supports that the frequency, duration and intensity of therapy needs to vary according to diagnosis and the goals to be achieved, but there is evidence to suggest that generally people with severe and multiple disabilities need intervention for a longer period of time to achieve the same results as people without a developmental disability (Andrade et al., 1991; Bower et al., 2001; Chaniás et al., 1998).

Studies directly comparing different intensities and durations of treatment have shown mixed results. Studying children with spina bifida, Andrade et al. (1991) found significant and lasting advantages to intensive treatment. Bower et al. (2001), on the other hand, found that in children with cerebral palsy short term gains in motor
performance after 6 months of intensive intervention were not maintained 12 months after the cessation of that intensity of therapy when compared to children receiving regular treatment.

Even within one client group, the duration and intensity of programs needs to vary with the goals to be achieved. For example, in a systematic review of 21 controlled studies of the benefits of physical activity programs for intellectually disabled adolescents and adults, Chani as et al. (1998) found that programs with higher frequency (at least three times per week) resulted in greater increase in flexibility. Longer programs (> 9 weeks), on the other hand, produced larger effects in cardiovascular fitness and muscle strength.

Nonetheless, in many service settings, duration of therapy is pre-determined, (e.g., 6 visits; 6 weeks; 3 months) and goals are written to fit this time frame. These structures reflect attempts to constrain resources rather than a person/family-centred philosophy that might maximise the impact of those resources. However, adopting a training or collaborative consultation may be another way for therapists to manage increasing demand while ensuring that the person's intervention plan meets the time constraints of the service and also achieves the best ongoing benefit to the person/family. (See also next section on demand management.)

The amount of time that a therapist spends in direct contact with a family needs to be tailored to the family’s individual level of need (Greco et al., 2006). The proportion of time that therapists spend in direct contact with the person/family varies substantially with service delivery philosophy and type (Murchland & Wake-Dyster, 2006). Models that determine caseloads purely by number of contact hours with individuals or groups (e.g., Braithwaite, Hindle, Phelan, & Hanson, 1998; Duckett, Gray, & Howe, 1995) should be viewed with caution, since these account only for direct services, and may not reflect best practice. When indirect services are included in accounting for the therapists’ therapy time, the proportion of indirect services offered within a service is evident (Murchland & Wake-Dyster, 2006).

The intensity or complexity of needs of the person/family can influence funding allocations in therapy service (Dyson et al., 2000). However, this concept has not been consistently applied to caseload management (e.g., having a caseload where people have multiple needs reducing the overall caseload numbers). In the absence of literature to guide therapists in caseload management, therapists adopt a flexible approach in balancing their caseload according to the level of complexity of the
person/family’s service needs (e.g., fewer occasions of service and more immediately addressed needs, as opposed to multiple occasions of service and longer-term needs).

In addition, therapists may also make caseload decisions based on the expected changes in the person/family’s needs over time, according to lifespan development. For example, there may be times of transition when the demand for services is higher (e.g., when starting school, moving to high school, entering adolescence and adulthood, leaving school, entering the workforce, living away from home) that impact upon caseload management. Thus, the therapist’s caseload should move dynamically in response to the changing needs of people with a disability and their families over their lifespan.
SECTION 6:

DEMAND MANAGEMENT

Demand management and caseload management are closely aligned in seeking to maximise the service within available resources. Demand management, based on economic theory (Vickery & Lynch, 1995), is a relatively new concept in the field of human services. It is receiving increasing attention in response to the need to (a) deliver a timely service across multiple sites and in the face of increasing demand, and (b) maintain quality, evidence-based practice that is in compliance with clinical guidelines (Bryant, 2007).

The aim of demand management is to deliver “the right amount of the right care by the right provider in the right setting at the right time” (Mohler & Harris, 1998, p. 103). Bryant (2007) noted that demand management is built upon the assumption that people are “rational actors” who make decisions about services on the basis of weighing up (the risks and benefits of) the available options, and “that identifying the reasons that people demand healthcare services, and shaping demand through education and incentives, will bring supply and demand into equilibrium” (p. 273). Demand management and service coordination have reciprocal positive effects in effectively managing human services (KPMG, 2004). Effective demand management, combined with effective service coordination, will improve access to services and improvements in managing resources within the service.

Effective demand management involves identifying how people make decisions about services, and engaging in dialogue with them to influence the demand and ensure that the system is cost-effective, accessible, and of a high quality (Vickery & Lynch, 1995). To achieve its maximum potential, demand management must consider the health behaviours in which people engage before they even seek care (Mohler & Harris, 1998). Thus, demand management is a person/ family-centred approach to delivery of services, which combines ‘empowerment’ (self-care and health promotion), education, and professional support (Bryant, 2007).
The process of demand management involves creating a standardised and transparent approach to measuring and effectively managing (and influencing) demand (Bryant, 2007). Systems and processes designed to support clinicians in their practice are an integral component of demand management. A framework for demand management includes methods for measuring, influencing, and implementing demand management. Procedures relate to the ‘intake’ of clients, the ‘flow-through’ of clients, and the ‘discharge’ of clients; with referral out of the service possible at all stages.

- Strategies in intake include: pathways for initial client contact, initial assessment of needs, and prioritisation of needs.
- Strategies in flow-through include: waiting list procedures (e.g., review and recall), use of individual and/or group therapy sessions, indirect therapy, and consultative models of service delivery, and caseload management (e.g., balancing more complex/long term needs with simple/easily addressed needs).
- Strategies in discharge include: planning for discharge, review and recall, and discharge criteria, policies and procedures.

Structuring a service according to the principles of demand management requires taking steps to ensure that the service is delivered within available resources and with maximum outcome benefits (Bryant, 2007).

**Restricting supply**

So-called ‘supply-side’ strategies for reducing demand include gatekeeping, conducting reviews of utilisation, and implementing service or benefit restrictions. These strategies have been found to have only a very small impact on demand, while simultaneously having a significant negative impact on consumer satisfaction (Mohler & Harris, 1998). The biggest achievement of these ‘access hurdles’ is to test the patience of people with a disability, their families and caregivers (Mohler & Harris, 1998). As this creates conflict between services and clients, it inhibits the development of collaborative working relationships and thereby potentially negatively impacts outcomes, which in turn affects future demand. In fact, Todd and Jones (2003) found that negative experiences in early interactions with services led to parents adopting a ‘battle mentality’ in dealing with services later.
Influencing demand

Organisations seek to influence rather than simply respond to demands for service. One aim of such intervention is to generally reduce, or at least limit increases in, demand. A second, and equally important, aim is to eliminate ‘inappropriate demand,’ which is defined as both demand for a service when it is not required and lack of demand for a service when it is indicated (Mohler & Harris, 1998). Adequately informing clients when to appropriately access a service, how and when to implement a service, and how to help themselves before (as well as during and after) accessing a service has been found to both increase satisfaction and decrease resource use (Mohler & Harris, 1998).

In disability services, this might mean that organisations find ways to support people with a disability and their families in planning for and working towards life goals before problems arise (i.e., barriers). For example, there is increasing recognition in the literature that moments of transition are critical in the lifespan of the person with a disability (e.g., Hanline, 1988; Hanline & Halvorsen, 1989; Kemp & Carter, 2000; Prigg, 2002). However, under current management systems transitional services are coming too late (Kemp & Carter, 2000; Prigg, 2002). Recent studies suggest that people need to be developing skills for adulthood from very early in childhood (Kemp & Carter, 2000; Prigg, 2002). When people who have disabilities move from paediatric to adult services, they move from a coordinated system of family-centred care into a disjointed system of person/family centred care. Yet, they are given little time or support for preparing for transition either before the time of transition or shortly afterwards.

To assist in reducing demand, efforts may also be put to address barriers to activity and participation present in the community (e.g., attitudes, knowledge, and beliefs about disability) and increasing opportunities. Increasing collaborative consultation with community members (e.g., schools, employers, generic service providers, etc.), either in relation to specific persons with a disability or general issues, can achieve this goal. Such pre-emptive strategies can help prevent potential barriers that may otherwise arise as the person with a disability moves through life and participates in the community.

Mohler and Harris (1998) asserted that “managing demand is managing the flow of information” (p. 106). Integrated referral systems are a method of intake that attempts to allocate resources according to the person’s relative needs in the context of multiple services and/or sites. Dedicated referral systems (e.g., external, centralised
systems staffed either by non-trained/ non-therapy staff; or by trained staff with a background in a therapy) have been used to influence demand management, through providing a centralised and standardised information hub with information about all services available. The aim is to inform better decisions about what and when therapy might be needed.

**Changing perceptions of ‘what is therapy?’: informing service users**

If the person/family have not experienced collaborative consultation and other alternatives to direct, clinic-based therapy, they will not request these services. Acceptance of indirect therapy and consultative therapy is often only gained after a positive experience. Often, families who receive an effective indirect or consultative service are only enlightened as to the widespread benefits of the service at the end of the process, or some time later when longitudinal benefits emerge. Similarly, when therapists realise that - over time - they may have a wider impact on a greater number of people using the consultative model, they often experience their own ‘paradigm shift’ in their philosophy towards therapy.

In order for the person/family to fully understand and use the full range of therapy services, and to be satisfied with the services provided, it is important to address issues affecting provision of information about, acceptance and use of alternative therapy service models. Therapists need to describe the different types of therapy (i.e., direct, indirect, consultative) available in meaningful and positive ways. Otherwise indirect or consultative services will continue to be viewed as a ‘second-class service’. Until alternatives are equally valued, provision of indirect or consultative services will not reduce the person/family’s demand for direct therapy. In order for the provision of indirect or consultative services to assist in demand management, caseload management, and improved person/family satisfaction, a change in organisational culture towards therapy service provision is needed.

**Supporting staff to provide all modes of therapy**

At an organisational level, services need to support therapy staff in engaging in all three types of service delivery (direct, indirect, and consultative). If a therapist’s work in providing an indirect or consultative service is not ‘counted’ as ‘therapy’, it will be devalued. If staff accounting for their time can only count direct, hands-on, and face-to-face occasions of service, they will prioritise these services over services that do not involve the face-to-face contact with a person/family. If therapists must meet a minimum number of ‘direct’ therapy hours they will prioritise this over indirect or consultative services.
Thus, if a service focuses upon output measures of productivity (i.e., hours of therapy provided), it needs to include outputs of indirect therapy and collaborative consultation; for example, including hours of indirect therapy or service provided to others for the benefit of the person with a disability. To this end, the Novita Children’s Services (formerly the Crippled Children’s Association of South Australia) have used the ICF to develop a framework to define services provided (Murchland, 2003). Being based on the ICF, the framework is inclusive of services that are delivered in indirect or consultative modes to meet the needs of persons with a disability.

Likewise, if a service focuses on outcome measures of productivity (i.e., results for clients), it needs to include broad outcomes of therapy that reflect quality irrespective of method of service. For example, rather than merely measuring individual’s skills, measures of functional outcomes (performance in the context of everyday environments), and client satisfaction with information provided and total services are appropriate irrespective of service delivery model and reflect factors of importance to service providers. The Australian Institute of Health and Welfare (AIHW) recommends services focus on participation and quality of life in measuring service outcomes (AIHW, 2001).

Different knowledge and skills are required under different models of service delivery (Dudgeon & Greenberg, 1998; McColl, 1998). Organisational policies need to support all staff in developing and maintaining their skills in indirect and consultative therapy. This includes therapy staff and any other staff engaged with the therapists in indirect or consultative therapy models. Therapists who feel they do not have the skills to implement consultation, in particular, have a responsibility to update their skills through their continuing professional development or postgraduate units of study. This needs to be supported at an organisational level if it is to be encouraged on a broad scale as a familiar and effective model of service delivery.

Within organisations, outcomes might also be measured regarding the effectiveness of the different types of therapy, allowing comparisons across the types of service provided. Such information has the potential to contribute to the overall evidence base for therapy, and to inform the interpretation of the extant published literature in the local context.
Supporting other agencies in indirect and consultative services

Other staff that need support in engaging with therapists in providing indirect therapy or being part of the team engaged in collaborative consultation include associated staff within the disability service (e.g., therapy assistants, case managers, community nurses, house managers) and staff from other agencies working in cross-agency consultation (e.g., teachers). The level of support may range from providing good access to information about the service, information about how to interact with the therapists to get the most out of the therapy service, and addressing expectations prior to engagement with the service to receive direct, indirect, or consultative services. Additional support for staff from other agencies includes providing information about disability so that cross-agency staff become more effective partners in interacting with persons with a disability, and direct, indirect or consultative services are more effective.

Developing clear pathways for referral

Clearly defined and broadly communicated eligibility (referral) criteria and pathways for access to a service help to ensure that (a) referrals are appropriate and inform prioritisation of caseloads, and (b) that the service can meet the person’s referred need. Information relevant to eligibility and prioritisation must be collected as part of the referral process (Caffrey & Todd, 2002).

Open dialogue with referral partners

Some referrals are more appropriately dealt with by generic services, but not received by those services due to their lack of knowledge of working with people with developmental disabilities. Forwarding such referrals to those organisations and providing them with support enables demand management whilst maintaining relationships with the other service providers (Caffrey & Todd, 2002). Providing adjunct collaborative consultation in this way is therefore an efficient way to manage demand for therapists’ time and to create optimal interventions for persons with a disability (Melville et al., 2006).

Improving access to services

A family-centre service offered by Child Health and Development Services (CHADS) in the ACT added a one-day per month Physiotherapy Drop-In Service at a location easily accessible to families. The purpose of the service was to provide early identification of problems, information, advice and appropriate referral of children with musculoskeletal or motor problems. Because of the increasing utilisation of the
service another centre was established on the other side of the city (Rigney, 1999). Without a rigorous evaluation of the impact of drop-in centres in influencing demand or improving functional outcomes for disability, they remain yet another option in creative service delivery management that might be of benefit in increasing access to services where short term goals might be met more readily than in more controlled services.

It is not known if drop-in clinics might also serve as an initial contact in terms of service coordination in the demand management framework of the service. If drop-in clinics are effective in reducing demand for other services within the system, it is possible that they may also be used to increase the capacity of people with a disability and families to take on their own case management.

**Across agency demand management**

To date there is little research to inform demand management across agencies. Interpretation of such research would also be difficult, given variations in community and service structures locally and legislative frameworks between states and internationally. Practical questions to be considered at the service level include:

- How can separate agencies be practically engaged in the provision of a range of service delivery options (including direct, indirect, consultative, individual and group)?
- How far can the services move toward collaboration across services and in a range of different settings?
- How will staff across service settings collaborate and what will be the role of communications technology in this (e.g., teleconference, email, internet discussion groups, chat rooms)?
- How will sufficient administrative and technical support be offered to support teams in maintaining opportunities for meeting and communicating in relation to the person with a disability/ family?
- How can multiple sites for services still provide a person/ family-centred service where people need to access services across multiple sources?
- How will services across separate but collaborative teams be coordinated?
- How are responsibilities for case management or coordination allocated and balanced across the teams?
- How will the aims, purposes and policies (including access) of different service agencies be defined and clarified?
How can services develop a shared framework for effective teamwork between them (not just within each separate team) and use unifying frameworks and concepts of disability (e.g., ICF) to enhance cohesiveness of response across the services, while acknowledging their different models of care (e.g., medical model in health care settings and social model in community settings)?

How can collaborative teamwork acknowledge that people with complex disabilities also have complex medical, social and personal needs that will often mean they are receiving services from multiple sites?
SECTION 7:

CONCLUSIONS

Best practice combines the best available evidence with clinical reasoning and awareness of local and individual cultural factors. The literature indicates that, for the most part, therapy is effective. However, the quantity and quality of the available empirical evidence for therapies is variable. Most investigations to date suggest different forms of therapy are equally effective across a range of settings and when implemented by a range of personnel (i.e., direct or indirect). Findings regarding the optimum intensity and duration of therapy vary according to the person’s needs and the goals to be achieved.

The following key findings need to guide provision of therapy to people with developmental disabilities.

- Therapy staff across the disciplines share a common framework of understanding of disability in the WHO’s ICF. **Transdisciplinary teamwork** is generally regarded as best practice for these therapists to work together.

- Therapy staff should follow an **evidence-based practice model**, guided by well-formed clinical questions answered with the best available evidence. Therapists need to be supported in accessing and critiquing the evidence base and making changes to improve practice.

- The person and family are integral to the process of goal-setting and decisions about treatment options. **Family-centred and person-centred practices** are well-supported as best practice in the therapy literature. However, despite extensive supporting literature published over an extended period, clinical practice often falls short of this best practice. Therapists’ attitudes are critical to the delivery of family-centred and person-centred therapy.

- **Direct, indirect and consultative modes** of service delivery are all valid treatment options, meeting a broad range of goals and influencing demand management.
Direct therapy, individual or group, is best suited for interventions to increase or maintain skills, and when therapy requires expert knowledge and supervision that cannot be passed on to another.

Indirect therapy is well-suited for interventions to provide massed practice in everyday contexts.

Collaborative approaches to therapy are preferred over ‘expert’ (including many direct and indirect) models. Collaborative consultation aims to solve everyday problems and build self-management skills.

Most practice and effectiveness research relates to direct therapy. Available research, however, suggests indirect and consultative services are at least equally effective. In practice these interventions (particularly collaborative consultation) are under-utilised and they should be considered viable adjuncts or alternatives to traditional direct therapy services.

Not only the person with a disability, but the person’s interaction with the environment and the environment itself (physical and social) are considered potential ‘targets’ for therapy in meeting selected goals.

Irrespective of any general findings in the literature, all therapy must be tailored to the individual’s needs. Therapy is generally more effective if it is individualised, delivered in natural settings, builds in generalisation and targets functional goals.

Self-efficacy, self-advocacy, and empowerment are important in the design and delivery of therapy. Services need to be accessible and coordinated across organisations, sites and interventions. Families are generally relatively dissatisfied with the provision of timely and accurate information.

Principles of demand management are used to influence demand, increase information and access to services, and ensure effective service coordination and delivery. This includes the management of ‘inappropriate demand’ – defined as both the demand for services that are not necessary and lack of demand for services that are indicated.

To effectively manage caseloads and demand, and to achieve optimum outcomes for persons with a disability, therapists need to be supported in the provision of all forms of therapy service delivery through organisational structures, policies and procedures. Measures of productivity need to reflect that different services are appropriate in different circumstances, and that functional outcomes are of the highest priority. Different skills are required for different therapies, and therapists generally require more training and experience with collaborative consultation.
Further research is urgently needed to examine the effectiveness of intervention targeting most areas of function in people with developmental disabilities. Staff in disability services may contribute much in furthering the knowledge of how different treatment options influence outcomes for individuals with a disability. A disability service that supports their staff in research is strengthened by (a) a growing evidence base to support interventions, and (b) increased skill and competency of staff in conducting and evaluating interventions. Therapists working within disability services could make an important contribution to research comparing approaches and intensities (rates and durations) of intervention. Involving some therapists in disability in collaborative clinical research (with academic institutions) will advance the state of the science and art of therapy with people with a disability.
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