

Outcomes-based early childhood intervention for young children with developmental disabilities and their families

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INTRODUCTION

The theme of this Convention is Pakiwaitara – stories of the land. Stories are of great importance for our development and functioning as individuals, communities and national groups. They shape the way that we think and act, providing an unconscious rationale for what we do.

My focus today is on the story of early childhood intervention, on how we as policy makers, service providers and parents understand what we are trying to achieve for young children with developmental disabilities and delays. I will also outline a way in which we can analyse and reconfigure the stories we tell about the work we do.

In my previous job, I was the manager of an early childhood intervention program, a state-wide program for deaf and partially hearing children in Victoria, Australia. This program was one of several available for deaf children, and one of my tasks was meet parents of newly-diagnosed deaf children who were in the process of choosing among the different service options. I was proud of the services we provided, and was keen to tell these parents all about our home-visiting services, our child-and-parent groups and our multidisciplinary staff. I was far more likely to describe the services we provided than what these services were there for, what the aims were, and what changes they could achieve.

This tendency to regard the services we provide (rather than what outcomes we achieve) as the most important feature of our programs is common among human service providers. But, as I will argue in this paper, unless we keep the ultimate outcomes that we are trying to achieve in mind at all times, we are less likely to provide effective services and achieve positive outcomes.

The first half of this paper will describe a general approach to the planning and delivery of services to children and families – outcomes-based practice. In effect, this is a way of analysing and clarifying the stories we tell ourselves about who we are and what our services are for. This model has been developed at the Centre for Community Child Health, building upon work previously undertaken by Early Childhood Intervention Australia (Victorian Chapter)(2005). The second half of the paper applies this model to a particular group of children – those with developmental disabilities and delays.

OUTCOMES-BASED APPROACHES IN HUMAN SERVICES

One of the most striking developments in the planning and funding of human services has been the exploration of shifting from input- and output-based models to outcomes-based approaches.

There are several reasons for adopting an outcomes-based approach to planning and service delivery:

- First, we cannot expect to achieve positive outcomes if we are not clear what outcomes we want.
- Second, the services we provide are less likely to be effective. If we are not clear about the outcomes we are aiming for, then we will be less likely to choose a methodology that is known to be effective in achieving desirable outcomes, we will be unable to judge the efficacy of the service we provide, and may persist with approaches and goals that are not achieving anything.
- Third, the available ways of funding services do not guarantee positive outcomes and do not give governments ways of measuring whether the services they are funding are having the effects they intended.

How is an outcomes-based approach different from the approaches we have been using? For the lack of any viable alternative, governments have funded services on the basis of inputs and/or outputs:

- **Inputs** are what is provided to enable an intervention or program to function. This includes funding, staffing, resources.
- **Outputs** refer to the amount of service provided, sometimes expressed in terms of the number of service delivery units.

However, neither inputs or outputs are necessarily related to achieving desired outcomes. Providing an adequate level of staffing and resources makes it more likely that positive outcomes will be achieved, but does not guarantee them: the staff may not successfully engage the children and parents or use the most effective intervention strategies. Similarly, having a providing families with a certain level of service does not guarantee that the service is the one best suited to meeting the child and family needs, or that it is of a sufficient quality to be effective. Inputs and outputs represent necessary but not sufficient conditions for successfully achieving outcomes.

Another problem with the output-based approach is that it encourages service providers to focus on the service to be provided rather than the ultimate aims, thereby **confusing the means with the ends**. In the context of business, Levitt (1975) has shown that industries that become product-oriented rather than consumer-oriented inevitably decline and lose their customers. They are under the illusion that continued growth is just a matter of continued product or service innovation and improvement. But the consumers do not care about the products or services in themselves, only in what they can do for them. Industries or services that lose sight of that are at risk of losing their customer base.

According to Levitt, industries that thrive *start* from the customers' needs and work backwards – they focus on what the customers want and need and then tailor what they produce or deliver to meet those needs. They spend less time on the producing or refining the product or service itself and more time on staying in touch with customer desires.

Human services, including early childhood intervention services, tend to focus more on the product (the services) they provide than the outcome; that is, they are primarily concerned to deliver high quality services and to improve the ways in which they deliver services. Another way of putting this is that they think that the principle aim of their service is to provide all the wonderful programs that they have been trained to deliver.

But that is to confuse the means with the ends. All our technical expertise and various forms of service are only a means to an end – to make some kind of change in the child and family. The question is what kind of change are we seeking? And exactly how does the services we provide achieve that change? Thus, we need to be clear about what we are trying to achieve as well as having a clear evidence-based model of how those goals can be achieved.

As a result of the deficiencies of the current output-based funding models, there have been increasing calls for human services to adopt a results-based or outcomes-based accountability approach to service planning and delivery (Centre for the Study of Social Policy, 2001; Chinman, Imm and Wandersman, 2004; Friedman, 2000, 2005; Schorr, Farrow, Hornbeck and Watson, 1994; Utting, Rose and Pugh, 2001).

This has been matched by efforts within the early childhood intervention field to identify child and family outcomes as a basis for shifting to an outcomes-based approach (Bailey and Bruder, 2005; Bailey, Bruder, Hebbeler, Carta, Defosset, Greenwood, Kahn, Mallik, Markowitz, Spiker, Walker and Barton, 2006; Bailey, McWilliam, Darkes, Hebbeler, Simeonsson, Spiker and Wagner, 1998; Bruder, 2001; Conn-Powers and Dixon, 2003; Harbin, Rous and McLean, 2005; Parrish and Phillips, 2003).

What does an outcomes-based approach involve?

Outcomes-based approaches 'start with the end in mind', that is, they begin by identifying the outcomes to be achieved and work backwards from there (Anderson, 2005; Friedman, 2000, 2005; Moore, 2006a). This approach is also known as backward mapping (Elmore, 1979-1980; Harris, 2005).

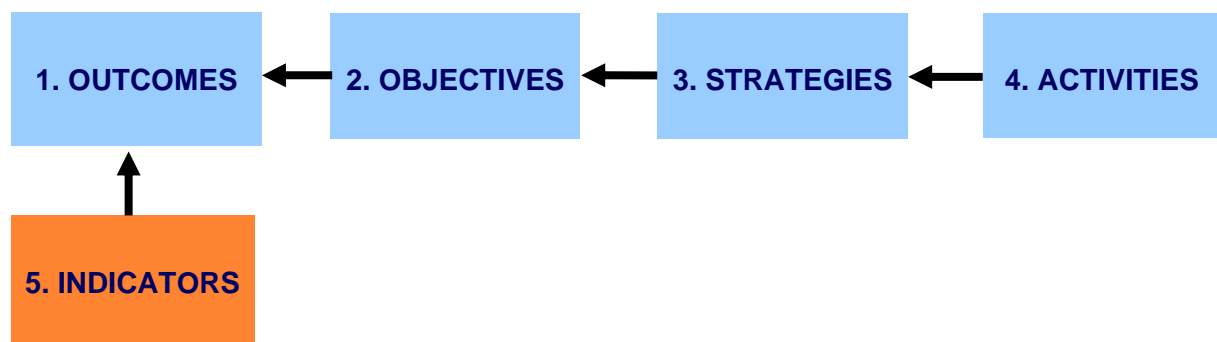
There have been a number of models developed to help service providers and systems adopt an outcomes-based approach (Centre for the Study of Social Policy, 2001; Chinman, Imm and Wandersman, 2004; Friedman, 2000, 2005). These various models all have certain features or steps in common. These have been incorporated into the following model developed at the Centre for Community Child Health, building upon work previously undertaken by Early Childhood Intervention Australia (Victorian Chapter)(2005).

Adopting an outcomes-based approach involves the following steps:

- Step 1: Identify the outcomes sought
- Step 2: Translate these outcomes into specific objectives
- Step 3: Select strategies for achieving these objectives
- Step 4: Translate the strategies into specific activities or programs
- Step 5: Identify indicators to measure the progress made
- Step 6: Deliver the services and activities
- Step 7: Monitor the delivery of services and activities
- Step 8: Evaluate the impact of services and activities
- Step 9: Review the outcomes, strategies and service delivery

The first five steps are illustrated in Figure 1.

FIGURE 1: Starting with the end in mind



Step 1: Identify the outcomes sought

Outcomes are desired conditions of well-being for children, families, and communities. They answer the questions, ‘What is it that we want for children and families?’ Common outcomes include healthy children, economically self-sufficient families, and children ready to learn.

The first step in adopting an outcomes-based approach is to ask the question, *What do we want for our children?* The resulting statements are likely to be broad: most communities will have aspirations for their children that exceed the results that are currently measurable. But they have the great advantage of focusing on what people *want* for their children, before they get into the question of what is to be delivered or measured.

In identifying outcomes, it is important to distinguish between the services received and the benefits gained from them:

'A family outcome is not the receipt of services, but what happens as a consequence of providing services or supports. For example, sharing information with parents and about their child's condition is a service; if parents understand that information and use it to describe their child's condition to others, advocate for services, or respond effectively to their child's needs, a benefit has been experienced and family outcome has been achieved. Evaluating service quality or satisfaction reflects whether consumers like and appreciate the services received, but does not necessarily mean that benefit has been received.' (Bailey, Bruder, Hebbeler, Carta, Defosset, Greenwood, Kahn, Mallik, Markowitz, Spiker, Walker and Barton, 2006, p.228)

Outcomes may focus on children, families and/or communities. These are likely to be interdependent: 'positive outcomes experienced by the family serve to promote the child outcomes and outcomes achieved by the child benefit the family.'

Framing outcome statements: In framing outcomes, the questions to ask are: *What is the overall effect that is being sought? What will be the end result? What is the ultimate purpose of the strategy? Why are we doing it?*

Outcomes should be framed in terms of the overall effect or state that is being sought, eg. *All children will be healthy and develop well, or All families will have positive social support networks.*

Outcome statements should not refer to or describe services to be provided (Friedman, 2005). One of the most important characteristics of a well constructed outcome statement is that it is not about data and not about services. The need for data is addressed by indicators, and services are best considered as means and not ends. Friedman gives the following example: *All preschool children receive high quality child care.* He points out that this is a strategy, not an outcome.

Outcome statements apply at national, state, agency and individual levels.

- **National level.** In Australia, a National Agenda for Early Childhood (Department of Families, Community Services and Indigenous Affairs, 2007) was endorsed by the Australian government in 2005. Its stated aims are a mix of outcomes for children and services, and it does not appear to be being used as the basis for an outcomes-based approach to planning and funding early childhood services.

In Aotearoa New Zealand, the Ministry of Social Development (2004) has developed 35 indicators of the social wellbeing of children and young people. These capture different aspects of the 10 selected social outcome domains, which in turn represent key dimensions of social wellbeing.

**Examples of outcomes for children and young people
(Ministry of Social Development, 2004)**

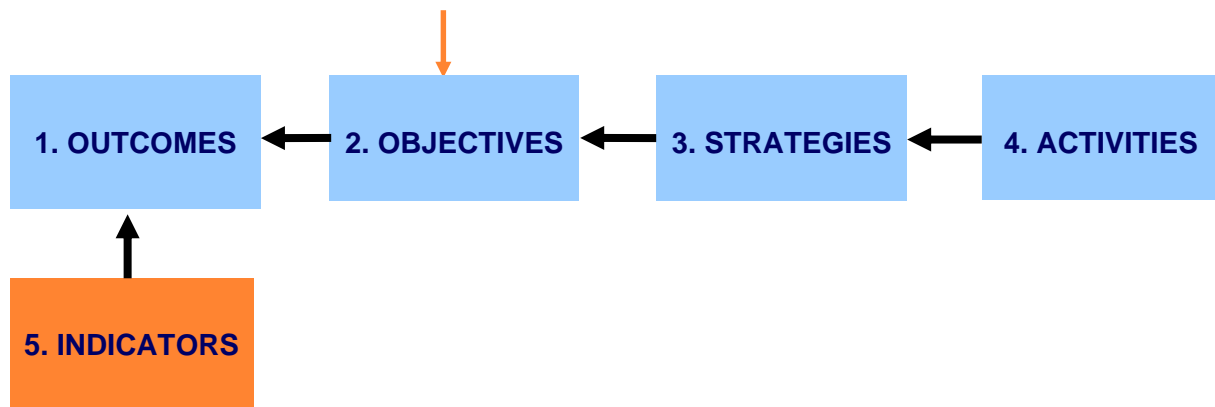
Health	All children and young people enjoy good physical and mental health with access to good-quality health care
Care and support	All children and young people enjoy secure attachment to parents and caregivers in a nurturing relationship where they are valued, respected and supported.
Economic security	All children and young people enjoy a secure standard of living that means they can fully participate in society. All young people achieve the transition to economic independence.
Education	All children and young people obtain the knowledge and skills to enable them to be full participants in society.
Culture and identity	All children and young people are able to participate in the culture and values important to them and their families and to feel secure with their identity.
Environment	All children and young people live in, and have access to, healthy natural and built environments.

- **State level.** In Australia, the Victorian Government has developed an Outcomes Framework comprising 35 key aspects of children’s development, and has begun to provide regular reports based on this framework (Victorian Department of Human Services, 2006). The DHS Statewide Outcomes for Children Branch is developing a comprehensive, across government, monitoring system – the Victorian Child and Adolescent Monitoring System (VCAMS) – to build on this reporting framework.
- **Agency level.** All agencies providing services for children and families have some stated service aims and goals, although these are not necessarily couched in outcomes-based terms, nor are the services delivered strictly based on an outcomes-based approach.
- **Individual child / family level.** Within human services in general, program planning and delivery have mostly been service- or output-based rather than outcomes-based. However, there are precedents within some services (such as the early childhood intervention sector) for outcomes-based planning and service delivery.

Step 2: Translate these outcomes into specific objectives

The second step in an outcomes-based approach is to translate outcomes into objectives.

FIGURE 2: Translating outcomes into objectives



Objectives are the specific targets that need to be met in order for an outcome to be achieved. They address the question, ‘What do you want to achieve? To make progress to the expected outcomes, what do you need to achieve? Objectives need to be measurable, achievable and realistic. (Another term that often appears in the literature is **goals**. These are the same as objectives, and only the latter term will be used in this document.)

Whereas outcomes are broad statements about the conditions of well-being we are seeking for children, families, and communities, objectives are the specific targets that need to be met in order for these outcomes to be achieved. Each outcome can have one or more objectives.

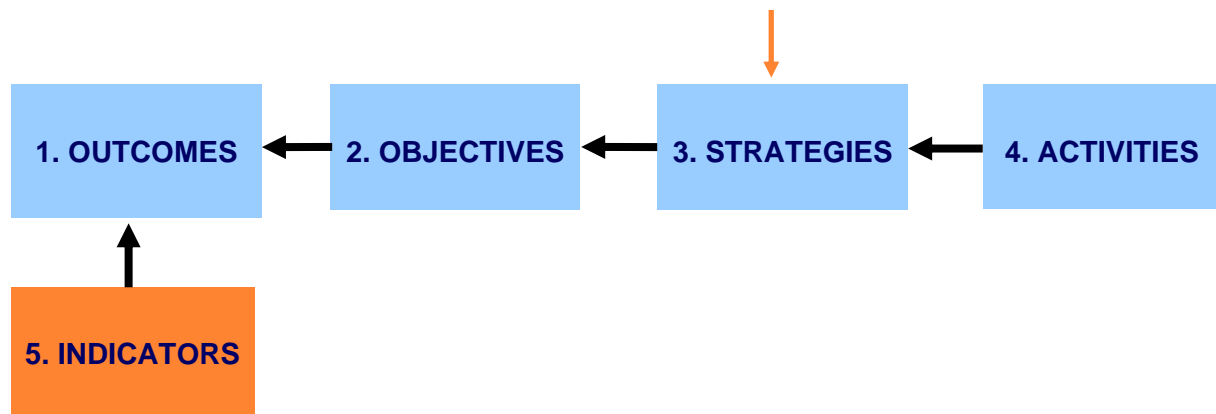
Framing objectives: In framing objectives, the questions to ask are: What specifically needs to be done to achieve the broad outcomes that have been identified? What specific steps need to be taken to achieve the outcomes?

Objectives need to be measurable, achievable and realistic. To ensure this, they should be worded as *To increase ...*, *To decrease ...*, or *To establish....* Terms such as *strengthen* and *enhance* are to be avoided as these are not easy to measure.

Step 3: Select strategies for achieving these objectives

The third step in an outcomes-based approach is to select strategies to achieve the outcomes and objectives that have been identified.

FIGURE 3: Selecting strategies for achieving objectives



Strategies are long-term plans of action designed to achieve a particular objective or set of objectives. They describe how the objectives will be achieved, what will be done.

Whereas outcomes and objectives describe *what* is being sought, strategies and activities describe *how* these outcomes will be achieved. Strategies describe the components of a general plan of action aimed at achieving the objectives and outcomes. Activities translate the strategies into specific forms of service.

In early childhood services in Aotearoa New Zealand, the *Te Whāriki* early childhood national curriculum (May and Carr, 2000; Ministry of Education, 1996) incorporates a set of strategies for achieving goals and outcomes. These include key principles such as empowering children to learn and grow, and enabling children to learn through responsive and reciprocal relationships with people, places and things. These are general strategies for achieving positive outcomes for young children.

It is critical that services are able to demonstrate that the strategies and activities chosen are both logically related to the desired outcomes and known to be effective. Demonstrating the logical link between strategies and outcomes involves using *program logic* or *theories of change*, whereas demonstrating the effectiveness of interventions involves *evidence-based practice*.

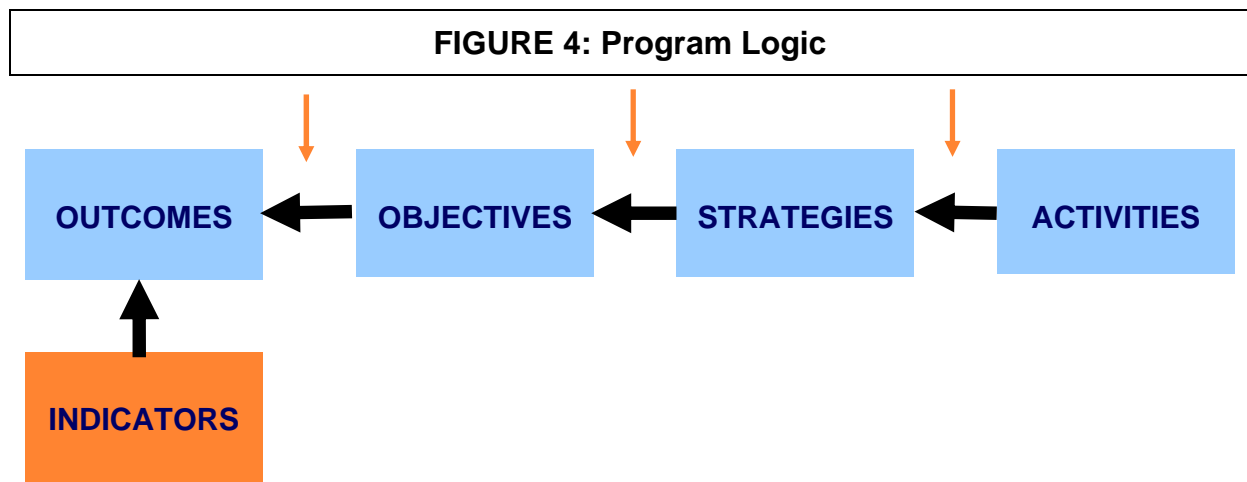
Program logic and theories of change

These are related concepts:

- **Program logic** is a way of analysing a program, its components and the linkages between what a program does and what it is expected to achieve). A full logic model will show what service, at what intensity (or dosage), delivered to whom and at what intervals are likely to produce specified short-term, intermediate and long-term outcomes. A key characteristic of this model is that the means (what you do) and the ends (the results or outcome of what you do) are separated.
- A **theory of change** explains the process through which change occurs, and shows how the service or program that is delivered results in the outcomes that

were intended. All forms of intervention should be based on a theory of change, that is, a model of how the intervention is expected to achieve the outcomes that have been chosen. This preferred theory may reflect a mixture of beliefs, assumptions and expectations, but ideally should be evidence-based.

Program logic is concerned with the links between the different elements of the outcomes-based model. In Figure 4, these links are indicated by the descending arrows).



Evidence-based practice

In addition to being able to demonstrate that the strategies and activities chosen are logically related to the desired outcomes, services also need to be able to show that the strategies are evidence-based and therefore known to be effective in achieving desired outcomes.

Why do we need evidence to back up what we do? There are at least two reasons. The first is that, if we do not have evidence to support what services we provide, then what we do will be based on what merely seems right, or on what we have always done. This can result in what Robin Sullivan (Children's Commissioner, Queensland) calls *cardiac evaluation* ('In my heart, I know what we do is good') or what UK paediatrician Leon Polnay calls *Biblical evaluation* ('We looked, and we beheld that it was good').

If services are not driven by clear outcomes and if the methods are not the ones best designed to achieve these outcomes, then they will be driven by other factors. These include

- habit or custom (this is how we have always done it),
- unproven assumptions (these particular children 'need' this kind of program), or
- community expectations (the tendency on the part of parents to over-value professional expertise and hands-on therapy).

Programs that base service delivery on any of these factors are less likely to achieve desirable outcomes than services that are clearly focussed on agreed goals and using proven methods of achieving these goals.

The second reason why we need evidence to back up what we do is that summaries of what make programs effective all conclude that effective programs are based on clear, scientifically-validated theoretical frameworks and methodologies which articulate how the services that are delivered achieve the desired outcomes (Bond and Carmola Hauf, 2004; Dunst, 1997; Halpern, 2000; Shonkoff and Phillips, 2000; Schorr, 1997; Simeonsson, 2000; Weissbourd, 2000). This need to be sure that we are using the most effective methods of achieving outcomes has led to calls for greater reliance on evidence-based practice.

What exactly is evidence-based practice? The usual understanding of this term is that it basing service delivery on research evidence, ideally only using practices that have been proven by research to be effective. However, a closer look at recent definitions (Buisse and Wesley, 2006; Sackett, Straus, Richardson, Rosenberg and Haynes, 2000) suggest a more complex picture.

With early childhood services in mind, Buisse and Wesley (2006) define evidence-based practice as 'a decision-making process that integrates the best available research evidence with family and professional wisdom and values' — in other words, it is not solely reliant upon research evidence, but is a balance of scientific proof, professional and family experience, and core values and beliefs.

From a medical perspective, Sackett, Straus, Richardson, Rosenberg and Haynes (2000) define evidence-based medicine as follows:

'Evidence-based medicine as the integration of best research evidence with clinical expertise and patient values.

- By *best research evidence* we mean clinically relevant research, often from the basic sciences of medicine, but especially from patient-centred clinical research into the accuracy and precision of diagnostic tests (including the clinical examination), the power of prognostic markers, and the efficacy and safety of therapeutic, rehabilitative, and preventive regimens.
- By *clinical expertise* we mean the ability to use clinical skills and past experience to rapidly identify each patient's unique health status and diagnosis, the individual risks and benefits of potential interventions, and their personal values and expectations.
- By *patient values* we mean the unique preferences, concerns and expectations each patient brings to a clinical encounter and which must be integrated into clinical decisions if they are to serve the patient.

When these three elements are integrated, clinicians and patients form of diagnostic and therapeutic alliance which optimises clinical outcomes and quality of life.' (p. 1)

There are well established research protocols for determining which interventions or treatments are the most effective. These typically involve five levels of evidence, with the 'gold standard' being represented by studies involving large randomised control

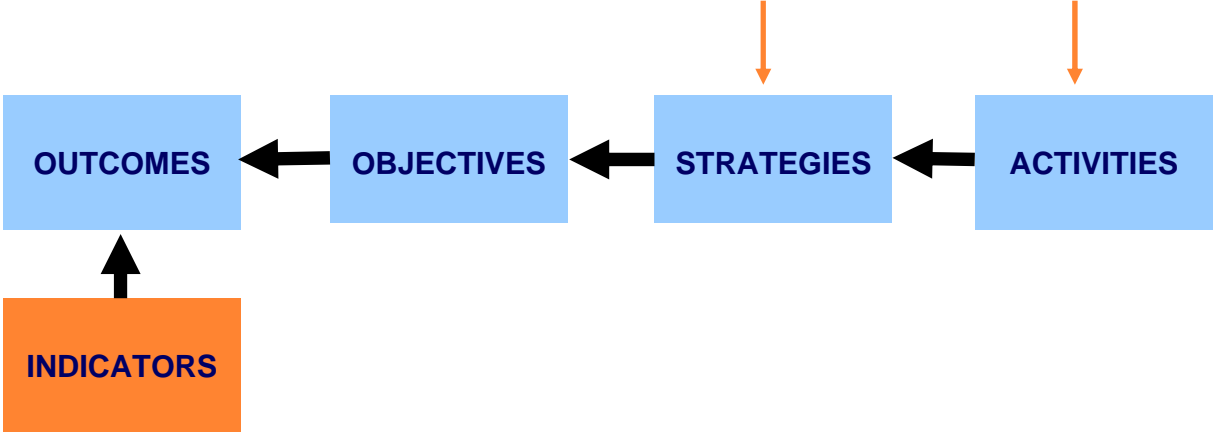
trials. This has led to a tendency to think that we should only be using interventions that have been proven to be effective using this methodology. However, there are many forms of intervention that have yet to be tested in this way and therefore have not yet been shown to be ineffective. A total reliance on interventions backed by randomised control trials might therefore exclude some effective interventions that have yet to be tested.

Another reason not to rely totally on evidence-based research is that much of the research that has been done is culturally specific, involving dominant populations in Western ‘developed’ nations. It cannot be assumed that programs that are effective with such groups will be equally effective with minority groups in the same nations, or with populations in other cultures. There are no universally effective strategies, nor are there any universally desirable outcomes. The inclusion of professional wisdom and parent values in the factors to be considered in selecting strategies ensures that those chosen are culturally relevant and acceptable.

To incorporate family values, we need to draw upon **practice-based evidence**. This involves getting continuous feedback about whether services are meeting people’s needs effectively, and uses this information to make modifications to services so as to meet people’s needs more effectively.

In Figure 5, the descending arrows highlight the two stages of the outcomes-based approach where evidence-based practice (in the broader sense just outlined) is critical.

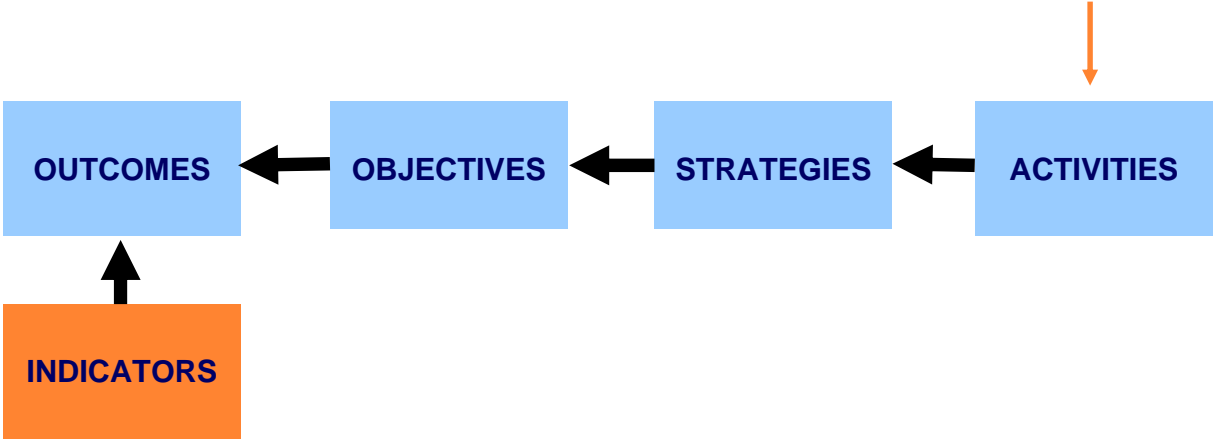
FIGURE 5: Evidence-based practice



Step 4: Translate the strategies into specific activities or programs

The fourth step in an outcomes-based approach is to translate the general strategies into specific activities and programs.

FIGURE 6: Translating strategies into activities and action plans



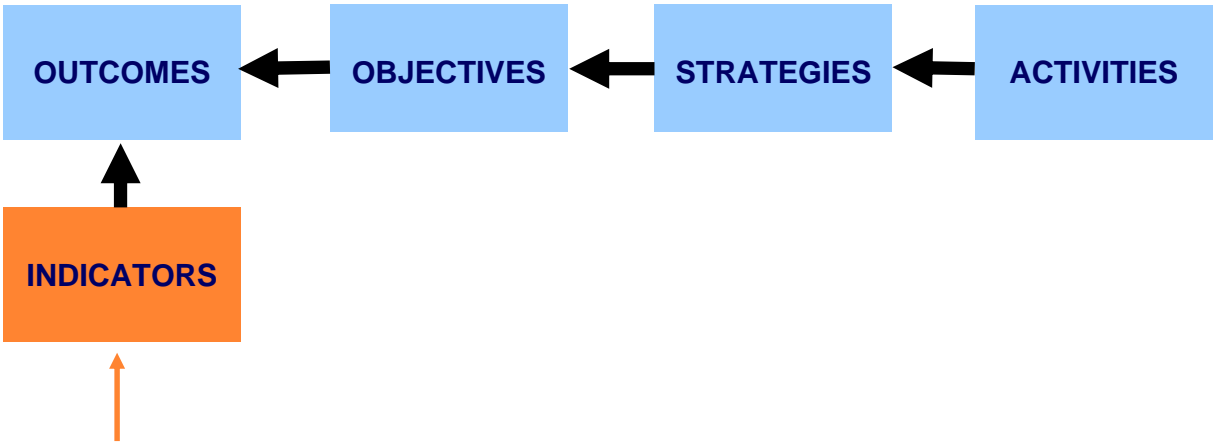
Activities are the actual services and programs provided. Activities translate the strategies into specific forms of service. In the outcomes-based approach, activities are the last element to be specified. In the more traditional service-based approaches, they are often the first. Thus, services have often begun by identifying the programs they plan to offer, based upon the available funding and the forms of service that they know best, rather than beginning with the outcomes they want to achieve and working backwards to objectives, strategies and activities.

This step culminates in the development of an **action plan** that specifies the activities to be provided, who is to provide them, and the timeline.

Step 5: Identify indicators to measure the progress made

The next step in an outcomes-based approach is to identify indicators to measure the progress made. (In some outcomes-based models, this step occurs earlier in the sequence, eg. immediately after the outcomes and objectives have been identified.)

FIGURE 7: Identifying indicators



Indicators are measures of social and family functioning that are known to be on the causal pathways of these serious outcomes. They answer the question, ‘How do we know we are making progress on this outcome?’ Several indicators can pertain to each outcome. For example, indicators pertaining to healthy children could include immunisation rates, rates of various diseases, and rates of exercise.

By virtue of being on the causal pathway to important outcomes, indicators tell us whether the strategies and activities being provided are having the desired effect and whether the recipients are on track to achieving positive outcomes in the long term. However, because outcomes are general statements of desired states, indicators can never be more than approximate representations of these outcomes. Nevertheless, some indicators are powerful predictors of later outcomes because, although relatively narrow in themselves, they act as proxies for clusters of indicators.

There are likely to be different outcomes and indicators at national / state and local levels - a single set of outcome measures is unlikely to be able to address all levels and purposes.

Examples of outcomes and indicators

As noted earlier, in Aotearoa New Zealand, the Ministry of Social Development (2004) has developed indicators of the social wellbeing of children and young people. These capture different aspects of the 10 selected social outcome domains, which in turn represent key dimensions of social wellbeing.

Examples of outcomes and indicators for children and young people (Ministry of Social Development, 2004)

HEALTH	
Desired outcome	All children and young people enjoy good physical and mental health with access to good-quality health care
Indicators	<ul style="list-style-type: none"> • Low birth weight births: The number of children who weighed less than 2,500 grams at birth, per 100 live births. • Infant mortality rate: The annual number of deaths of infants aged less than one year, per 1,000 live births in that year. • Hearing failure at school entry: The percentage of five-year-old children failing the school entry hearing screening test.
CARE AND SUPPORT	
Desired outcome	All children and young people enjoy secure attachment to parents and caregivers in a nurturing relationship where they are valued, respected and supported.
Indicators	<ul style="list-style-type: none"> • Child abuse and neglect: The number of children aged 0–16 assessed as abused (physically, emotionally, sexually) or neglected following a notification to CYF, per 1,000 children under 17 years of age.

ECONOMIC SECURITY	
Desired outcome	All children and young people enjoy a secure standard of living that means they can fully participate in society. All young people achieve the transition to economic independence.
Indicators	<ul style="list-style-type: none"> • Children living in low-income families: The proportion of dependent children aged under 18 years who were living in economic family units receiving an equivalent income, net of housing costs, below the low-income threshold. • Children and young people with low living standards: The proportion of dependent children aged under 18 years and young people aged 18–24 years living in economic family units with a low standard of living. • Food security: The proportion of households with children aged 5–14 years for which an adult in the household responded <i>always</i> to the statement “We can afford to eat properly” in the 2002 National Children’s Nutrition Survey
EDUCATION	
Desired outcome	All children and young people obtain the knowledge and skills to enable them to be full participants in society.
Indicators	<ul style="list-style-type: none"> • Early childhood education attendance at ages 3–4 years. The number of enrolments of children aged 3–4 years in early childhood education services, as a proportion of all 3–4 year olds.
CULTURE AND IDENTITY	
Desired outcome	All children and young people are able to participate in the culture and values important to them and their families and to feel secure with their identity.
Indicators	<ul style="list-style-type: none"> • Young Ma-ori who can speak te reo Ma-ori. The proportion of Ma-ori children under 15 years and Ma-ori young people aged 15–24 who can speak te reo Ma-ori, as recorded in the <i>New Zealand Census of Population and Dwellings 2001</i>.
ENVIRONMENT	
Desired outcome	All children and young people live in, and have access to, healthy natural and built environments.
Indicators	<ul style="list-style-type: none"> • Household crowding. The proportion of children under 18 years and young people aged 18–24 years living in crowded households.

Another outcomes-based framework developed in Aotearoa New Zealand comes from the Christchurch City Council (2006) that has identified set of community outcomes with matching indicators to guide its activities over the 2006-2012 time period.

IMPLEMENTING AN OUTCOMES-BASED APPROACH

What has been described so far – the selection of program outcomes, objectives, strategies, activities and indicators – represents the first phase of adopting an outcomes-based approach. Although this phase is about conceptualising and planning the program, it is by no means a simple task. Services typically find shifting to an outcomes-based approach difficult. This is because of the prevailing service-based paradigm and a strong tendency to confuse means with ends. Human service providers often focus more on the product (ie. service) than the outcome, that is, they think that the reason the service exists is to provide support and intervention programs to children and parents. As we have seen, this is to confuse the means with the ends: all the technical expertise and various forms of service are only a means to an end – to make some kind of change in the child and family. The question is what kind of change are we seeking? And exactly how does the services we provide achieve that change?

Once the hard work of identifying and agreeing on outcomes and strategies has been done, the next phase is to implement the chosen interventions. This involves the following steps:

- Delivering the activities and programs
- Evaluating the delivery of activities and programs
- Evaluating the impact of activities and programs
- Evaluating long-term outcomes

Step 6: *Delivering the activities and programs*

Having completed the first phase of the outcomes-based approach, the next step is to deliver the activities and programs that have been identified. This involves implementing the action plan that has been developed. This can be a plan that relates to national or state-level services or initiatives, or an agency- or team-level plan, or a plan for an individual child and family.

The plan will usually specify

- what the desired outcomes / goals are
- what will be done to achieve these outcomes
- who does what
- when this will be done by
- how the impact of the actions will be measured

Steps 7 and 8 involve evaluation of service delivery and outcomes. **Evaluation** involves systematically investigating the *effectiveness* of intervention programs with a view to improving policy and practice. This distinguishes evaluation from controlled experimental studies which measure the *efficacy* of interventions, that is, whether they can be shown to change children or families independently of other factors.

There are three distinct types of evaluation: process evaluation, impact evaluation and long-term evaluation.

- **Process evaluation** involves evaluating the process of service delivery, including both the level of service provided and the manner in which those services were provided. It is conducted while services are being delivered and on completion of the intervention, and addresses questions such as whether the scheduled services were delivered as intended, and whether the services were delivered in the manner that was intended.
- **Impact (or short-term) evaluation** involves evaluating the immediate effect or short-term outcome of an intervention. It is conducted at the completion of an intervention, and addresses the question of whether the intervention had the immediate impact on the recipients that was expected.
- **Long-term evaluation** involves evaluating whether the intervention contributed to desired long-term changes in functioning. It is conducted months or years after the intervention has been completed and is the ultimate test of the program's efficacy.

Ideally, services ought to conduct all three forms of evaluation, but the evaluation of long-term outcomes is generally beyond their resources. However, process and impact evaluation are within the capabilities of most services and ought to be (but often are not) routine.

Step 7: Monitoring and evaluating the delivery of activities and programs

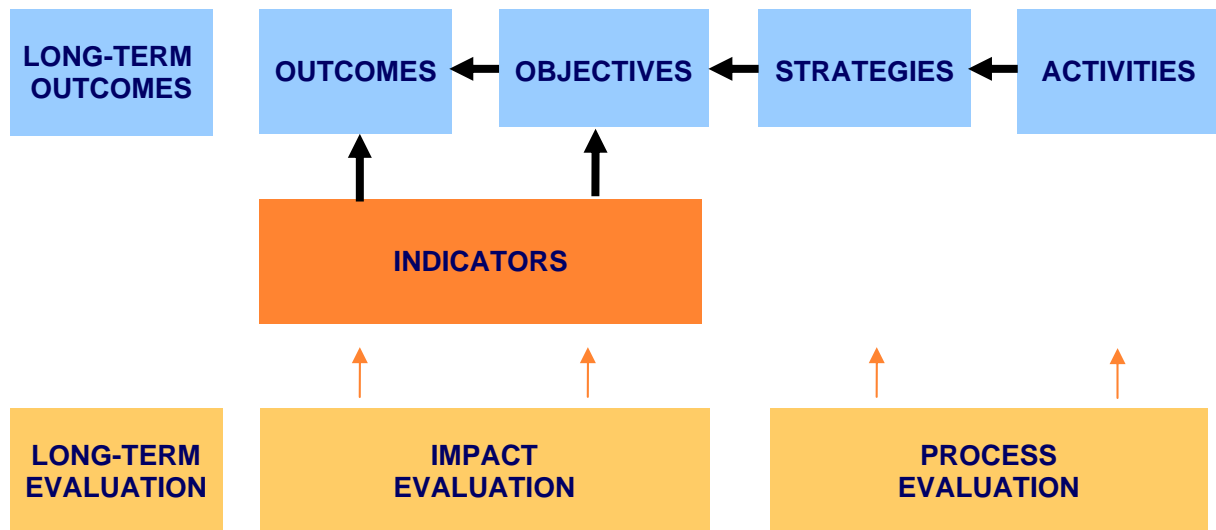
This step involves process evaluation and occurs while services are being delivered. It has two components: whether the scheduled services were delivered as intended, and whether the services were delivered in the manner that was intended.

Step 8: Evaluating the impact of the interventions

This step involves impact evaluation, and occurs at the end of a period of service. It addresses whether the intervention had the immediate impact on the recipients that was expected.

The relationship between the three forms of evaluation and the stages of the outcomes-based model are shown in Figure 8.

FIGURE 8: Forms of evaluation



Step 9: Reviewing outcomes, strategies and service delivery

The final step in an outcomes-based approach is to review the outcomes, strategies and service delivery in the light of the evaluation evidence.

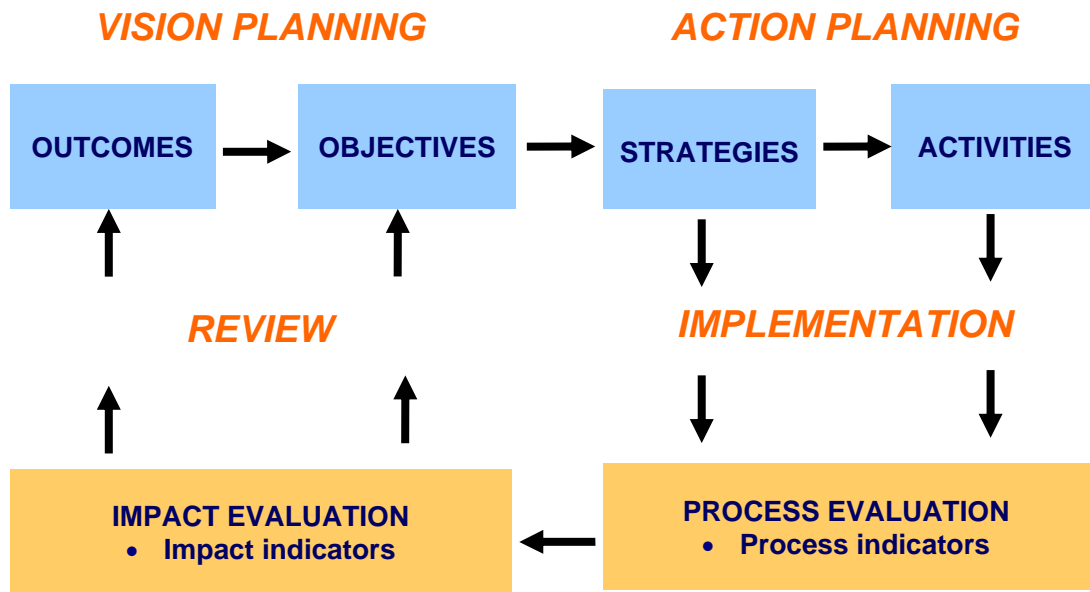
If the outcomes were not what were intended, there are three possible reasons:

- the wrong strategies were used (ie. they were not evidence-based or not logically linked to outcomes),
- the activities / services were not delivered as intended, or
- the services were not delivered in the manner needed for the services provided to be effective

Thus, to know if what we are doing is effective, we need to be clear about the theoretical and evidence bases of the strategies chosen, and we need to measure if the services were delivered as planned and in the manner intended.

The full model is shown in the Figure 9. The arrows have been reversed to show the cyclical nature of the process. Models of this kind will be familiar to those who have conducted action research, but the distinguishing feature of the outcomes-based approach is that it starts with the end in mind and seeks to keep those ends in mind throughout.

FIGURE 9: Cyclical outcomes-based planning and service delivery



OUTCOMES-BASED EARLY CHILDHOOD INTERVENTION

We will now apply this framework to early childhood intervention services. This will involve looking at

- what outcomes we are seeking for children with disabilities and their families,
- what strategies are known to be effective in achieving these outcomes, and
- how we can evaluate the delivery and impact of our interventions.

OUTCOMES AND OBJECTIVES FOR CHILDREN WITH DEVELOPMENTAL DISABILITIES AND THEIR FAMILIES

For early childhood interventions services to be effective, it is essential that there is agreement about what they are trying to achieve, what the desired outcomes are. However, shifts in early intervention philosophy and practice have been accompanied by changes in how we conceptualise what outcomes we are seeking for children and families (Moore, 1996, 2006b; Bailey, McWilliam, Darkes, Hebbeler, Simeonsson, Spiker and Wagner, 1998). For instance, one significant change that has occurred in the evolution of early childhood intervention practices is the recognition that we should be seeking outcomes for families as well as for their children (Bailey, Bruder, Hebbeler, Carta, Defosset, Greenwood, Kahn, Mallik, Markowitz, Spiker, Walker and Barton, 2006; Mannan, Summers, Turnbull and Poston, 2006). However, it is not necessarily clear what the balance between child and family outcomes should be.

The result is that there may no longer be a clear consensus in the early childhood intervention field as to what the desired outcomes are (Bailey, Aytch, Odom, Symons and Wolery, 1999; Harbin, Rous and McLean, 2005). To address this uncertainty, efforts have been made to clarify what outcomes we should be seeking (Early

Childhood Intervention Australia - Victorian Chapter, 2005; Early Childhood Outcomes Centre, 2005; Parrish and Phillips, 2003).

In the US, the Federal government has funded the Early Childhood Outcomes Center to promote the development and implementation of child and family outcome measures for infants, toddlers, and preschoolers with disabilities. The Early Childhood Outcomes Centre (2005) defines the long-term goals of early childhood intervention and early childhood special education in the following terms:

'For children, the ultimate goal of this support is to enable young children to be active and successful participants during the early childhood years and in the future in a variety of settings – in their homes with their families, in child care, preschool or school programs, and in the community. For families, the ultimate goal is to enable families to provide care for their child and have the resources they need to participate in their own desired family and community activities.'

They define an outcome as

'... a benefit experienced as a result of services and supports received. Thus, an outcome is neither the receipt of services nor satisfaction with services, but rather what happens as a result of services provided to children and families. The child and family outcomes are interdependent in that positive outcomes experienced by the family serve to promote the child outcomes and outcomes achieved by the child benefit the family.'

Outcomes represent desirable accomplishments of the system. However, a service system cannot guarantee the achievement of any outcome involving families or children.

'The achievement of an outcome is the result of a variety of factors, only one of which is early intervention or preschool special education. Even in the best system, it is likely that not all families or children will achieve all of the desired outcomes. Nevertheless, early intervention and early childhood special education should strive to achieve the outcomes for all the families and children they serve.'

These measures can be used in local, state, and national accountability systems. Three key child outcomes and five key family outcomes were identified:

Child outcomes:

1. ***Children have positive social relationships.*** Making new friends and learning to get along with others is an important accomplishment of the early childhood years. All children need support from adults in learning how to be successful participants in their social world but some children who face challenges in this area need additional or specialized support.
2. ***Children acquire and use knowledge and skills.*** Over the early childhood period, children display tremendous changes in what they know and what they can do. Everyday life can present children with a wide variety of natural learning

opportunities that serve to help children acquire progressively more advanced skills. Parents and other adults support children's acquisition of knowledge and skills by providing children with safe, nurturing and stimulating environments in which learning can flourish. Children with special needs can face a variety of challenges related to acquiring knowledge and skills and may need additional supports to realize their potential.

3. ***Children take appropriate action to meet their needs.*** As children develop, they become increasingly more capable of acting on their world. Children have a variety of needs – to eat, sleep, play, move, explore, and communicate to name but a few. With the help of supportive adults, young children become able to address their needs in more sophisticated ways and with increasing independence over the course of the early childhood years. Children with disabilities may use specialized technology or may need assistance from adults to allow them to meet their needs.

Family outcomes:

1. ***Families understand their children's strengths, abilities and special needs.*** To promote development and speak effectively on behalf of their children, all parents must recognize their children's unique features that will influence developmental progress. Early intervention and early childhood special education professionals can provide information for families and can help families learn new ways to access this information themselves. This information allows parents to better support their children's growth and development and to represent their children's needs more effectively in planning interventions.
2. ***Families know their rights and advocate effectively for their children.*** Federal legislation makes it clear that parents of children with disabilities have a set of rights with regard to assent and access to services. All families must be given the opportunity to participate in decisions regarding their child's eligibility for services, the goals to be addressed, and the services provided. Families are to be partners in the design and delivery of intervention and need knowledge and skills to fully participate in the process.
3. ***Families help their children develop and learn.*** A caring, warm relationship between a parent and the child is the foundation for all subsequent development. Families who help their children learn and develop provide for and interact with their children in a variety of positive ways that will promote the development of the child. Professionals can support families in acquiring the knowledge to parent effectively and in putting that knowledge to everyday use.
4. ***Families have support systems.*** Research has documented the important role of social support in helping individuals cope with stressful or challenging circumstances. Support can come from both formal (eg, professionals, agencies) and informal (e.g., relatives and neighbors) sources. By using family-centered help-giving practices, professionals can help families build and use informal support systems.

5. ***Families are able to gain access to desired services, programs, and activities in their community.*** Most families need and have access to a wide range of community resources, services, programs, and activities. These resources could include the medical services (eg, doctors, dentists), child care, religious institutions, libraries, recreational centers, and, for older children, programs such as sports or scouting. Professionals can assist families in understanding and accessing the services and activities available in their communities.

Another family outcome that has increasingly been identified as important is helping the family maintain or improve its quality of life (Bailey, McWilliam, Darkes, Hebbeler, Simeonsson, Spiker and Wagner, 1998; Bruder, Harbin, Whitbread, Conn-Powers, Roberts, Dunst, Van Buren, Mazzarella, and Gabbard, 2005; Summers, Marquis, Mannan, Turnbull, Fleming, Poston, Wang and Kupzyk, 2007; Turnbull and Turnbull, 2002).

To assist states and jurisdictions in developing and implementing a system for measuring family outcomes, the Early Childhood Outcomes Center has produced a resource document *Guidance for States in Documenting Family Outcomes* (Bailey, Bruder and Hebbeler, 2006) and a Family Outcomes Survey. This is an instrument for parents to rate the extent to which they perceive that a range of family outcomes have been achieved.

Another statement of outcomes in early childhood intervention comes from the Indiana *First Steps* Early Intervention System (Conn-Powers and Dixon, 2003). This contains a mix of child, family and community goals:

1. Children attain essential and important developmental skills.
2. Children participate in inclusive community activities, settings, and routines.
3. Children (and families) are safe, healthy, and well nourished.
4. Families participate as members of the early intervention team and carry out recommendations that help them to help their child.
5. Families are connected to other families, associations, and organizations for emotional support.
6. Families advocate by exercising their rights in requesting and choosing goals, services, and supports.
7. Communities are informed and promptly refer families to First Steps.
8. Communities welcome and fully include children with disabilities and their families (e.g., child care, transportation, retail, housing, employment).
9. Communities provide all families access to health care services.

In Australia, Early Childhood Intervention Australia (Victorian Chapter)(2005) has developed a set of outcome statements to guide the work of early childhood intervention service providers. These included outcomes for children, families and communities, and distinguished between outcomes that related to gaining functional skills and competencies, and those that related to learning how to participate meaningfully in home and community activities.

OUTCOMES FOR CHILDREN

Functioning	Participating
<p>Children will gain functional, developmental and coping skills that are appropriate to their ability and circumstances.</p> <p>Children will show confidence and enjoyment in their everyday life.</p>	<p>Children will participate meaningfully in home and local community activities to the extent of their ability.</p> <p>Children will experience and enjoy family life and community activities that are preferred by the family.</p>

OUTCOMES FOR FAMILIES

Functioning	Participating
<p>Families will be able to nurture and support their child according to their values and preferences.</p> <p>Families will be able to identify and address the needs of their child(ren) and family.</p> <p>Families will be able to advocate for themselves and their family, to the degree they choose.</p>	<p>Families will participate in social and community activities to the degree they choose.</p> <p>Families will feel supported by personal networks and local communities.</p>

OUTCOMES FOR COMMUNITIES

Functioning	Participating
<p>Communities will have a range of service options and facilities to respond to emerging needs of families in supportive ways.</p> <p>Communities will know how to, and be able to respond to the needs of all individuals and families.</p>	<p>Communities will value all members.</p> <p>Communities will be inclusive, providing for diversity, access and quality services for all families.</p>

Outcomes for individual children and families

The above sets of outcomes represent general aims that an early childhood intervention system or agency might seek for all children and families on service. For each child and family, outcomes are individualized, representing particular goals that the family in question would like to achieve at that point in time. The framework used in early childhood intervention services to identify these individual outcomes is the family service / support plan.

How do we determine outcomes for individual children and their families? We need to recognize that asking parents to identify what outcomes they want is a somewhat unusual or artificial task. In the normal course of our lives, we do not identify goals in any formal or systematic way. This is a point made by Pollard and Rosenberg (2002) in discussing how most people approach the task of rearing children:

'Another way to put it would be to say that we need to begin with the end in mind. We don't usually do this when it comes to rearing children. We pretty much rear them by the seat of our pants. We develop strategic plans for so many relatively unimportant things in our life, and we spend so much time working on these plans that never get used, that in the end strategic planning has given strategic planning a bad name. But we don't take the time to make strategic plans for the most important things in our lives, our children. Part of the reason is that we don't know what we want our children to be in the end. We may say we want them to be healthy, to be happy, to be content. But what does that really mean?' (p. 14)

So when we first ask parents of children with disabilities to say what they want for their children, we should not be surprised if they have difficulties doing so.

Responses vary, but may include

- They may give a very long-term general goal that cannot be guaranteed – to walk or talk – this kind of goal represents a hope or wish that must be acknowledged and respected
- They may say they do not know what they or their child needs, and ask or expect you to tell them
- They may want something specific for the child and not take into account their own needs or those of the family

Various ways of helping families of children with developmental disabilities to identify child and family goals have been described (Beckman and Bristol, 1991; Darling, 2000; Dunst and Deal, 1994; McWilliam, 1992; Rodger, Braithwaite and Keen, 2004; Rosenkoetter and Squires, 2004). Carl Dunst and colleagues (Dunst, Trivette and Deal, 1988) described the process in terms of helping parents move from an initial expression of general concerns to a more focused identification of needs and outcomes. Harrison (in Davies, 2007) describes a four-stage process of helping parents identify goals and strategies:

- Identify a wish (eg. *We want Jasmine to talk*)
- Identify a related function (eg. *communication*)
- Identify a goal (eg. *Jasmine communicates her needs twice a day*)
- Identify an intervention strategy (eg. speech therapy once a fortnight, parent attends a behaviour development program)

Apart from concerns about the examples of strategies that Harrison lists (in terms of the model presented here, these are activities rather than strategies), this is a useful framework. It shows that the role of the early childhood intervention workers is to help parents move from general statements of hopes and wishes to more specific statements of goals and strategies.

There are other aspects of selecting outcomes that need to be considered. They include:

- Should the focus of the outcomes be on the child or family or both? Families who are new to early childhood intervention services may assume that the focus of the services will be primarily on the child and not be aware of the ways in which the family might benefit.
- Should the outcomes take into account the family circumstances and routines? McWilliam (1992) describes a routines-based approach to planning services, while Bernheimer and Weisner (2007) stress the importance of families establishing workable family routines.
- How do we ensure that parents are making informed choices regarding goals for their children? As Turnbull and colleagues (2007) point out, people cannot exercise choice if they do not know what their choices are. This does not mean that professionals should be prescriptive in suggesting to parents which particular supports and services they should receive, but it does suggest that we need to develop ways of sharing professional knowledge with parents and informing them of the types of supports and services that an early childhood intervention service can provide.

Although parents may find the task of identifying outcomes rather daunting and confusing at first, they should find that it gets easier as they become more familiar with the process, more informed about the possibilities, and clearer about what they really want. This happens if professionals genuinely respect the parents' knowledge and views, and engage them in true partnerships. The assumption should be that both parties have complementary sets of expertise and the best results are obtained when these are pooled.

What professionals need to know from parents includes:

- What are your (long-term) hopes for the child?
- What would make a difference for you and your family?
- What skills and knowledge do you possess already?
- What are your family circumstances and routines?
- What resources can you bring to bear?

What parents need to know from professionals includes:

- What do you know about to help my child?
- What does my child need to learn to make progress?
- What proven ways are there of helping children like my child learn?
- What do I need to learn to help my child?
- What forms of support can you offer?

Professionals need to be aware of the language they use in communicating with parents:

- We have been trained in the use of professional language that serves as a useful shorthand for communicating with other professionals but is different from normal spoken language and acts as a barrier to non-professional understanding

- We have to unlearn this when we work with families, and find ways of describing what we do in plain English
- This is the collective task for ECI services in general as well as for each discipline
- When working with parents, we should also be mindful of the language we use and incorporate their preferred terms into FSSPs

How do you write goals in terms that specify clear outcomes? The usual criteria for outcomes is given by the acronym SMART: outcomes should be specific, measurable, achievable, realistic, and time-limited. Davis, Day and Bidmead (2002) have suggested that this be expanded to SMART^{EA} to include two additional criteria: explicit and agreed.

Lehman and Klaw (2003) describe a process for writing clear and measurable goals that involves *qualifying* each behavioural outcomes and then *quantifying* it.

To qualify a goal, you must be specific about the variables that surround the desired outcome. This means specifying

- where the behaviour is to occur
- when the behaviour is to occur
- who observes the desired behaviour
- the level of support the child needs to demonstrate the behaviour
- the type of measurement to be collected

eg. Needing only a single prompt, Sean will wait for his turn on the playground equipment

eg. With increasing frequency, Beth will use words to describe her distress while doing chores in the evening

After you've qualified it, you need **to quantify the goal** by choosing a system for measuring progress. For each goal, choose one of the following types of quantification:

- increasing or decreasing frequency of behaviour
- increasing or decreasing the duration of behaviour
- increasing a range of behaviour
- the decreasing need for assistance or prompts

How does one develop the skills to formulate appropriate goals and translate them into measurable objectives? Both practice and training can help. Lehman and Klaw (2003) suggest that these get easier and easier the more you do it. Pretti-Frontczak and Bricker (2000) have developed a training strategy for improving the quality of written FSSP goals and objectives, and this has been shown to be effective in improving the quality of written FSSP goals and objectives.

STRATEGIES AND ACTIVITIES IN EARLY CHILDHOOD INTERVENTION

Having identified outcomes and objectives for children and families, the next step is to select strategies and activities that are logically connected to the desired outcomes and are evidence-based.

In the early childhood field, research evidence regarding effective services have been synthesised by Brooks-Gunn, Fuligni and Berlin (2003), Groark, Mehaffie, McCall and Greenberg (2006) and Waldfogel (2006). Key features of effective community-based services have been identified by the Centre for Community Child Health (2006) – these include ten interpersonal and eleven structural properties.

In the early childhood intervention field, Shonkoff and Phillips (2000) have argued that there has now accumulated 'sufficient knowledge to build an intellectually rigorous, common theory of change for the field' (p. 340). Similarly, Odom and Wolery (2003) argue that there now exists as a strong, evidence-based set of practices that service providers and caregivers use to promote the development and well-being of infants and young children with disabilities and their families. Established and emerging trends in early childhood intervention services have been summarised by Moore (2006b).

However, Turnbull and her colleagues (2007) are not convinced that the early childhood intervention field has quite reached this stage. They maintain that there is a gap in current policy and practice related to families: the absence of a clear conceptualization of *what* supports and services should be offered in early intervention programs. They argue that, in implementing family-centred practices, early childhood intervention services have focused primarily on *how* families and professionals should interact. The field has not sufficiently addressed what supports and services should be offered to families to enhance the likelihood of positive outcomes for the families themselves and for their children with disabilities.

- The *how* of service delivery includes the key features of family-centred practice, such as the way that professionals honour parents' choices, involve multiple family members, build on family strengths, establish partnerships, and collaborate with families in individualised and flexible ways.
- The *what* of service delivery includes the specific types of family supports and services that are provided, such as respite care, provision of information (eg. community resources, government benefits, legal rights, information about the nature of the disability), and provision of emotional support (eg. counseling, parent-to-parent support, participation in support groups).

Turnbull and her colleagues suggest that the field has not yet developed a conceptual framework for the types of supports and services the ECI professionals should be competent to offer and that ECI programs should have the resources to provide.

Is this a fair claim? It is not true that no service frameworks have been developed. The developmental systems model championed by Guralnick (2005) is an attempt to

develop such a model. This model identifies four potential stressors specifically affecting families of children with developmental disabilities:

- the need for information about their children's health and development
- the interpersonal and family distress that can result from having a child with a disability
- additional resource needs resulting from having a child with a disability
- threats to the parents' confidence in their ability to meet their child's needs

Guralnick suggests that these four potential stressors should be specifically addressed by early childhood intervention services in identifying family needs and planning interventions.

There is not space here to discuss the all the proven strategies available to early childhood interventionists. However, the following framework gives a selection of strategies, divided according to the distinction made by Turnbull and her colleagues between the *what* and the *how* of service delivery.

Effective early childhood intervention strategies

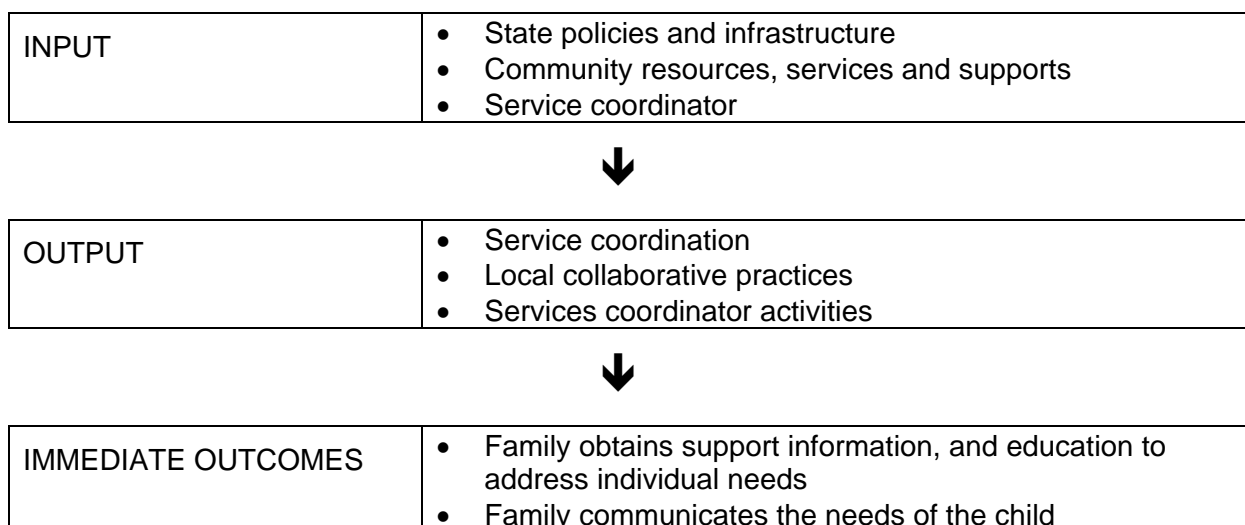
	What is delivered	How it is delivered
CHILD	<ul style="list-style-type: none"> • Assessment of child functioning and identification of child needs • Direct therapy and teaching • Inclusion in mainstream early learning and development programs • Natural learning opportunities 	<ul style="list-style-type: none"> • Responsive engagement and care practices • Child-centred practice
FAMILY	<ul style="list-style-type: none"> • Emotional support to parents • Information about child's health and development • Information about and access to relevant resources • Access to parent-to-parent support • Skills and empowerment • Quality of life 	<ul style="list-style-type: none"> • Responsive engagement and partnership • Family-centred practice • Strength-building
COMMUNITY	<ul style="list-style-type: none"> • Access to community facilities and services • Child- and family-friendly urban environment 	<ul style="list-style-type: none"> • Community engagement and partnership • Community strength-building
SERVICE SYSTEM	<ul style="list-style-type: none"> • Integrated services and key worker models • Tiered system of services based on universal system 	<ul style="list-style-type: none"> • Interagency collaborative practices • Transdisciplinary teamwork • Leadership style • Consultation and coaching

For each of these strategies, we can show evidence of efficacy and can develop logic models of how these benefits occur. For example, one of the strategies that is increasingly being deployed in early childhood and family services is that of integrating services to ensure that families have access to holistic seamless services. In the early childhood intervention sector, this has been prompted by evidence (Joseph Rowntree Foundation, 1999; Sloper, 1999) that families of disabled children have difficulties

- finding out about the services that are available to help them,
- making sense of the role of different agencies and different professionals,
- getting professionals to understand their situation and needs in the context of the whole family, and
- having their own knowledge of their child recognised

In the UK, these problems have been addressed through establishment of the Sure Start Early Support Program (www.earlysupport.org.uk) which is the central government mechanism for achieving better co-ordinated, family-focused services for young disabled children and their families. Evaluation of this program (Young, Temple, Davies, Parkinson, Bolton, Milborrow, Hutcheson and Davis, 2006) have shown that it is successful in promoting multiagency planning and delivery, in ensuring the appropriateness and responsiveness of multi-professional practice, and in family benefits. Parents report a reduced sense of burden resulting from otherwise having to co-ordinate services themselves, greater confidence engendered through the routine and predictable ways in which they knew professionals planned together, and greater accountability and increased opportunities for parents to become involved in decision making about their child's future.

So there is evidence that integrated services and key worker models can benefit families of children with disabilities. A logic model of how integrated services achieve these effects has been developed by Mary Beth Bruder and colleagues (Bruder, Harbin, Whitbread, Conn-Powers, Roberts, Dunst, Van Buren, Mazzarella, and Gabbard, 2005) in the US. In a simplified form, the model contains the following elements:



	<ul style="list-style-type: none"> • Family makes informed decisions about services, resources, and opportunities for their child • Child and family receive quality service • Agencies and professional are coordinated
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LONG-TERM OUTCOMES	<ul style="list-style-type: none"> • Child and family get supports and services that are coordinated, effective, and individualized to their needs
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IMPACT	<ul style="list-style-type: none"> • Family acquires and/or maintains a quality of life to enhance their well-being • Family meets the special needs of their child • Child's health and development is enhanced
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We might quibble with some of the headings of this model – eg. the fourth box might be more appropriately labeled *service integration outcomes*, and the fifth box labeled *long-term outcomes* – but this model has the great virtue of describing the way in which integrated services can lead to the ultimate goal, ie. improved outcomes for children and families.

What procedures can early childhood interventionists use to ensure that their practices are evidence-based? Buysse and Wesley (2006) recommend the following step-by-step approach:

1. **Identify relevant sources of evidence**, including
 - the best available research evidence,
 - the most authoritative statements of practice wisdom, and
 - core values and beliefs

2. **Make a judgment** based on
 - weighing research evidence against other sources of evidence,
 - resolving dilemmas created by conflicting evidence, and
 - considering the local context and the characteristics, needs and priorities of individual families

3. **Apply in practice** with particular case and situations

Further guidance on evidence-based practice is provided by Law (2000) who outlines a process whereby direct service providers can identify and introduce evidence-based practices. McClusky and Cusick (2002) describe strategies that program managers can use to introduce evidence-based practices in work settings.

MONITORING AND EVALUATING SERVICES AND OUTCOMES IN EARLY CHILDHOOD INTERVENTION

How do we know when we have achieved our outcomes with families? As we have seen, there are two main evaluation tasks: to evaluate the services that were

delivered (process evaluation) and to evaluate whether they had the desired effect (impact evaluation).

Process evaluation in early childhood intervention services

There are two aspects to process evaluation: measuring *what* was delivered and *how* it was delivered.

- **Measuring what was delivered.** The key question to be addressed here is: Did we deliver what we said we would deliver? Answering the question is relatively straightforward, provided the services to be delivered were clearly listed in the family service / support plan and have been routinely logged during delivery.
- **Measuring how services were delivered.** The key question here is: Did we deliver service in the manner that was intended? This involves measuring if the services were delivered in ways that were consistent with best practice and with the philosophy of the program.

There are several dimensions of the manner in which services are delivered that can be measured:

- family-centred practice - engagement / empowerment of families
- child-centred practice - engagement / skilling of children
- service coordination – simplifying and focusing access to services

Relevant measures are summarised in Mannan, Summers, Turnbull and Poston (2006) and include:

- **Beach Center Family-Professional Partnership Scale** (Summers, Hoffman, Marquis, Turnbull, Poston and Nelson, 2005)
- **Help-Giving Practices Scale** (Trivette and Dunst, 1994)
- **The Family-Centered Program Rating Scale** (Murphy, Lee, Turnbull and Turbiville, 1995)
- **Measure of Processes of Care for Service Providers** (MPOC-SP) Woodside, Rosenbaum, King and King, 2001)
- **Measures of Processes of Care (MPOC-56)** (King, Rosenbaum and King, 1995)
- **Recommended Practices in Family-Centred Early Childhood Intervention - Evaluation Guidelines** (NSW Ageing and Disability Dept. and ECIA-NSW, 1998)
- **Family-Centred Practice Checklist** (Wilson and Dunst, 2004)

It is also possible to measure the family centredness of the family service / support planning process itself. Relevant scales include (see appendix for more details):

- ***IFSP Family-Centredness Rating Scale*** (McWilliam, 1993; McWilliam, Ferguson, Harbin, Porter, Munn and Vandiviere, 1998)
- ***Goodness of Fit Survey*** (Albin, Lucyshyn, Horner and Flannery, 1996)
- ***Goals and Objectives Rating Instrument*** (GORI) (Notari and Bricker, 1990)
- ***Checklist for Intervention Plan Development*** (Jung, Gomez and Baird, 2004)

Impact evaluation in early childhood intervention services

Impact evaluation addresses the question of whether the services we provided made a difference and achieved the outcomes we intended. There are various ways of measuring impact, including the following:

- Data gathering
- Goal attainment scaling
- 'Before' and 'after' comparisons
- Impact evaluation scales

Data gathering

Lehman and Klaw (2003) maintain that this combination of theory and data gathering is an essential aspect of designing as well as evaluating early childhood intervention programs. Because children with developmental disabilities vary so much, interventions that benefit one child may have little or no impact on another. As a result, there is no single intervention or set of interventions that works for every child. Choosing interventions involves two steps.

- ***The first step is choosing a theoretical approach to intervention.*** Theory provides the framework or a general point of view structuring the overall program of intervention. A professional's choice of approach might be based on prior training, an assessment of their own strengths and weaknesses, personal beliefs, or a combination of these. A family member's choice might be based on what fits into their family culture, what matches their own observations about their child's learning style, the recommendations of professionals and other parents, and even how they feel about the people who represent the service options in your community.
- ***The second step in making intervention choices is to gather data.*** This tells us when a particular concept has been mastered or what form of intervention is working best with the child.

If theory is top-down, data is bottom-up. The two types of information - theoretical and empirical - work together: neither theory nor data are enough on their own. If you are a service provider, you need both sources of information to make good decisions. If you are a service consumer, you should expect that both sources will be used by those who are offer intervention for your child.

In order to collect data, the goal or outcome statements need to be formulated as data questions. Data are the answers to the data questions. Examples:

Goal: With increasing frequency, Peter will respond by saying 'Hi' when familiar people say 'Hi' to him.

Data question: What percentage of the time did Peter respond by saying 'Hi' when familiar people came to his home?

As noted earlier, writing clear goals involves quantifying them as well as qualifying them. Quantifying goals involves choosing a system for measuring progress. For each goal, choose one of the following types of quantification:

- increasing or decreasing frequency of behaviour
- increasing or decreasing the duration of behaviour
- increasing a range of behaviour
- the decreasing need for assistance or prompts

Ways of recording increasing or decreasing frequency are described in Lehman and Klaw (2003).

Goal attainment scaling

Another way of measuring child and/or family progress towards particular goals is goal attainment scaling (Kiresuk, Smith and Cardillo, 1994). This involves constructing a five-point scale (-2, -1, 0, +1 and +2) for every goal that is set for a child (or a family), and measuring progress in terms of these mini-scales. For research purposes, the outcome levels achieved can be converted into standard scores which are scaled to a mean of 50 and a standard deviation of 10.

Studies involving the use of goal attainment scaling with children who have disabilities have been described by Bailey and Simeonsson (1988), Davies (2007), King, McDougall, Palisano, Gritzan and Tucker (1999), King, McDougall, Tucker, Gritzan, Malloy-Miller, Alambets, Cuning, Thomas and Gregory (1999), Simeonsson, Bailey, Huntington and Brandon (1991), and Stewart, Law, Russell and Hanna (2004). The pros and cons of using this technique have been analysed by King, McDougall, Palisano, Gritzan and Tucker (1999), who also provide standard criteria and procedures for its use in paediatric settings.

One potential problem with this approach concerns the actual choice of goals. Goodman (Goodman, 1992; Goodman and Lloyds, 1993) notes that it is possible that the goals chosen for children could be beyond what they can reasonably be expected to achieve. As a result, the programs provided may be pitched inappropriately, making excessive demands of the child. A consequence of this is that the same inappropriately high goals may be chosen again for several years on end because the child appears to be making no progress. On the other hand, real progress may pass unrecognised.

In Sue Davies book on the Kurrajong EIS approach (Davies, 2007), Justin Harrison describes the use of goal attainment scaling as a way of evaluating children's progress and the impact of service on families. As noted above, goal attainment

scaling uses a five point scale, with 0 representing the expected goal. The example given is as follows:

Baseline (what is the situation now?)	Little improvement	Goal-expected level of achievement	A little better than expected	Much better than expected
- 2	- 1	0	+ 1	+ 2
Jasmine never communicates her needs without screaming or crying	Jasmine communicates needs up to once per day	Jasmine communicates her needs effectively twice a day	Jasmine communicates her needs four times a day	Jasmine communicates her needs five or more times a day

In working with children who have developmental disabilities or delays, it is important to keep in mind that our interventions have the potential to make matters worse for the child and family. Since one of the key principles that should guide our work is ‘Do no harm’ (Davis, Day and Bidmead, 2002), we need to allow for the possibility that the child’s functioning will deteriorate for some reason.

Harrison (in Davies, 2007) offers a way in which comparisons between different children and families can be calculated, by converting goal attainment scaling scores into T-scores. A spreadsheet for calculating the T-scores automatically is provided in the CD that accompanies the book.

‘Before’ and ‘after’ comparisons

Another approach to measuring change is described by Lehman and Klaw (2003). They suggest that, for the purposes of intervention, change is the transformation of one regular pattern of behaviour into another regular pattern of behaviour. To find out if a new pattern of behaviour has been reliably established, we need to demonstrate the difference between ‘before’ and ‘after’ behaviours. This involves a comparison of means. There are three steps to performing such a comparison for each goal:

1. Divide the data for that goal as closely as possible into thirds. The first third of the data corresponds to ‘before’ intervention and the last third of the data to ‘after’ intervention. Ignore the middle third of the data.
2. Compute the mean of the ‘before’ data and the mean of the ‘after’ data separately
3. Compare the two means in terms of the scale for the goal. If the two means reliably reflect different categories of behaviour, then we can conclude that change has occurred.

Lehman and Klaw (2003) provide straightforward explanations of how to analyse data, including how to calculate means and standard deviations.

Impact evaluation scales

In addition to methods of impact evaluation that rely on data collection, there are various scales which can be used to assess the impact of services provided. These relate to general goals for early childhood intervention services rather than to the outcomes sought for a particular child and family.

Relevant scales have been reviewed by Mannan, Summers, Turnbull and Poston (2006) and include:

- **Family Quality of Life Scale** (Summers, Poston, Turnbull, Marquis, Hoffman, Mannan and Wang, 2005).
- **Parenting Stress Index** (Abidin, 1990)

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- There are strong reasons why we should be adopting an outcomes-based approach to planning and service delivery
- This approach is equally applicable at national or state, agency or team, and individual child and family levels
- The outcomes-based approach encourages us to keep the end in mind at all times, and to choose strategies that are logically related to the outcomes we are seeking and are evidence-based
- The outcomes-based approach also requires us to monitor and evaluate the services we provide as well as the outcomes achieved
- An outcomes-based approach is a **process**, not a **product**: there is no universally applicable set of outcomes or strategies. What matters is not that we use some prescribed practices towards some prescribed ends, but that we are clear about
 - what outcomes we are trying to achieve,
 - how the strategies we use achieve the outcomes we are seeking, and
 - whether we are delivering the services we intended and are doing so in ways that truly engage and respond to children and parents

Implications

- If our services are a means to an end and we find that they are not reaching that end, we should change them
- The onus is on professionals to make their services accessible to all families, not on families to make use of the services that professionals decide to provide
- All child and family support services would benefit from adopting an outcomes-based approach
- Early childhood intervention services need to clarify the outcomes they are seeking, build skills in helping parents articulate their desired outcomes, identify the most effective strategies and activities for achieving these outcomes, and become practiced at monitoring the services they provide and evaluating their impact

The 'stories' we tell ourselves are not fixed and carved in stone, but evolve constantly to reflect changed circumstances and understandings. The version of the story that I have told today about what we are seeking to achieve with young children with developmental disabilities and their families is part of wider evolving story about all our children - their nature, their place in society, and how to provide the conditions they need to develop well. Although I have focused on children with disabilities and their families, the challenge of articulating the outcomes we as a society want for all children, along with the strategies for ensuring those outcomes, is one we all face.

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